

“ECONOMIC SCIENCE FOR RURAL DEVELOPMENT”

Proceedings of the
International Scientific Conference

RURAL BUSINESS AND FINANCE
1. Rural Business Economics and Administration
2. Finance And Taxes

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Foreword

Every year the Faculty of Economics, Latvia University of Agriculture holds the international scientific conference "Economic Science for Rural Development" and publishes internationally reviewed papers of scientific researches, which are presented at the conference. **This year the conference is organised for the 13th year running and all the papers are published in English.** Selected papers from the Proceedings are included into *ISI Web of Knowledge* database and the Faculty of Economics has applied also to Scopus database for including the Proceedings into this database.

Researchers from various European countries representing not only the science of economics in the diversity of its sub-branches have contributed to the conference this year; they have expanded their studies engaging colleagues from social and other sciences, thus confirming inter-disciplinary and multi-dimensional development of the contemporary science. The conference is dedicated to topical themes of rural development; hence, the research results are published in three successive volumes (No. 27, 28, and 29). The first volume of scientific conference proceedings was published in 2000.

Professors, doctors of science, associate professors, assistant professors, PhD students, and other researchers from the following higher education, research institutions, and professional organisations participate at the International Scientific Conference held on April 26-27, 2012 and present their results of scientific research:

Agricultural University in Cracow
Alberta College
Aleksandras Stulginskis University
Corvinus University of Budapest
Council of Latvian Chamber of Commerce and Industry
Daugavpils University
Estonian University of Life Sciences
Fulda University of Applied Sciences
Institute of Economics and Social Sciences, Estonian University of Life Sciences
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Ural State Mining University
Valga County Government
Ventspils University College
Vidzeme University of Applied Sciences
Wageningen University
Warsaw University of Life Sciences
West Pomeranian University of Technology in Szczecin

The following topical themes have been chosen for the conference:

- Production and co-operation in primary and secondary agriculture
- Integrated and sustainable development
- Finance and tax
- Rural business economics and administration
- Resources and sustainable consumption

The comprehensive reviewing of submitted scientific articles has been performed on international and inter-university level to ensure that only high-level scientific and methodological research results, meeting the requirements of international standards, are presented at the conference. Every submitted manuscript has been reviewed by one reviewer from the author's native country or university, while the other reviewer came from another country or university. The third reviewer was chosen in the case of conflicting reviews. All reviewers were anonymous for the authors of the articles. Every author received the reviewers' objections or recommendations. After receiving the improved (final) version of the manuscript and the author's comments, the Editorial Board of the conference evaluated each article.

All the papers of the international scientific conference "Economic Science for Rural Development" are arranged into the three following thematic volumes:

No. 27 Integrated and Sustainable Development

No. 28 Rural Business and Finance **Rural Business Economics and Administration** **Finance and Tax**

No. 29 Resources and Cooperation **Resources and Sustainable Consumption** **Production and Cooperation in Primary and Secondary Agriculture**

The publishing of the Proceedings before the conference will promote exchange of opinions, discussions, and collaboration of economic scientists on the international level. The research results included into the Proceedings are available worldwide to any stakeholder.

The abstracts of the conference proceedings provided in English are submitted to the international databases:

Web of Knowledge, which is a unified platform, that integrates all data and search terms. It provides access to the world's leading citation databases, including powerful cited reference searching, the Analyse Tool, over 100 years of comprehensive backfile and citation data. *Web of Knowledge* also delivers access to conference proceedings, patents, websites, and chemical structures, compounds and reactions. While other databases simply aggregate data, *Web of Science* information is carefully evaluated and selected. This time-tested approach helps conserve an institution's resources and researchers' time by delivering access to the most relevant resources. *Web of Science* offers a true cited reference index, which is still the best tool for discovery and the only method of retrieving accurate citation counts.

AGRIS - International Information System for the Agricultural Sciences and Technology set up by the Food and Agriculture Organisation of the United Nations (FAO UN), and especially to the databases containing full research texts set up by the academic higher education institutions.

EBSCO Academic Search Complete is the world's most valuable and comprehensive scholarly, multi-disciplinary full-text database with more than 8,500 full-text periodicals, including more than 7,300 peer-reviewed journals.

CABI PUBLISHING CAB ABSTRACTS database. *CAB Abstracts* gives researchers instant access to over 6.3 million records from 1973 onwards, with over 300,000 abstracts added each year. Its coverage of the applied life sciences includes agriculture, environment, veterinary sciences, applied economics, food science, and nutrition. **CAB Abstracts** is a comprehensive bibliographic database that covers worldwide literature from all areas of agriculture and related applied and life sciences. Published by CAB International, a division of CAB International, CABA is the world's most comprehensive database in its field containing 5 million entries of which 95% are supported by abstracts. Starting from 2009, part of entries is available as full-text periodicals.

The Conference Committee and editorial Board are open to comments and recommendations for the development of future conference proceedings and organisation of international scientific conferences.

We would like to thank all the authors, reviewers, members of the Programme Committee and the Editorial Board as well as supporting staff for their contribution organising the conference.



On behalf of the conference organisers

Andra Zvirbule-Berzina

Associate professor of Faculty of Economics
Latvia University of Agriculture

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“ECONOMIC SCIENCE FOR RURAL DEVELOPMENT”

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RURAL BUSINESS AND FINANCE

1. Rural Business Economics and Administration

Public Activities in Developing Green Economy: Case Studies in Latvia

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Abstract. The authors have analysed the implementation of public activities in several local municipalities in Latvia. The aim of the research is to identify the main driving forces and prerequisites for the development of green economy in local communities. Tasks of the research are to identify the main features of green economy, to study legislation regarding public involvement, to analyse the possibilities of public involvement in developing green economy, to study the current situation in selected local communities, and to suggest ways of tackling problems concerned and share best practices. The study is based upon in-depth interviews; data have been triangulated by the analysis of statistical data and observations.

The results of the research demonstrate that public, when engaged in cooperation with local governments, can have a major impact upon development of green economy in local communities. Local governments that are responsive and supportive towards the activities have undergone by the local community experience higher level of public involvement in adapting to green economy principles. Often the initiative comes from small enthusiast groups or even individuals; thus, they may grow considerably, when supported by the local government. In some municipalities, the lack of a balance between business and environmental activist interests impedes the economic development. The discussion with entrepreneurs on cleaner technologies might help reduce environmental impact but still provide jobs for local people. Development of these skills and sharing of the best practices could be undertaken by the Latvian Association of Local and Regional Governments.

Key words: public activities, green economy, local community, partnership, cooperation.

JEL code: R11, Q01

Introduction

Development of green economy is seen as today's response to the worldwide crises that are experienced during the past few years. Many people treat this as not only a financial crisis but also as energy, environmental, food, and ethical value crisis. Radical changes in the production and consumption patterns faced by the present generation are necessary, and they also change the functioning of the economic system. Meanwhile, these fundamental changes are quite slow; the authors believe that a lot can be done on the local level to foster cooperation between the local governments and the community.

The authors have analysed a number of case studies that pertain to diverse green economy development related issues by using in-depth interviews with different stakeholders. Apart from having purely academic objectives, the research is also aimed at promoting best practices among other local governments and the public in Latvia. Hence, the authors mainly focused on case studies reflecting good practice and positive examples.

Content analysis was used to find available political, economic, infrastructure, and information instruments that facilitate the development of green economy in Latvia. Analysis of statistical data and observations were used to draw conclusions on public benefits from involvement in the development of green economy.

The Baltic Sea is a very precious resource for all countries of the region. Thus, simultaneously it is a particularly vulnerable ecosystem, which suffers from different economic activities in the sea and in the Baltic Sea basin countries. Therefore, for the analysis purposes the authors have selected Latvian municipalities located on the bank of rivers belonging to the Baltic Sea basin. The case studies involve the following municipalities: Sigulda and Valmiera located on the bank of the river Gauja as well as the territory of North Vidzeme Biosphere Reserve, which is located on the bank of river Gauja water basin; Jurmala - on the river bank of Lielupe, and Ikšķile - on the river bank of Daugava.

Results and discussion

1. The concept of green economy

Green economy has become a frequently used term in the economic theory, politics, mass media, and speeches of well-known people. There are many versions of the contextual meaning behind the term that is closely linked to such concepts as: Green New Deal, green jobs, green stimulus, clean technologies, triple bottom line, new economy, low-carbon sustainable economy etc.

The United Nations Environmental Programme (UNEP) has defined green economy as "*one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy*

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can be thought of as one which is low carbon, resource efficient and socially inclusive" (UNEP, 2011).

According to the UNEP, the key measures in greening economy are: investment in natural capital, decarbonising of the economy, and creation of green jobs. The main areas for implementation of these changes are renewable energy, manufacturing, waste management, building, transport, tourism, and urban development (UNEP, 2011). Having combined the diverse views on green economy, the authors defined it as an economy with minimised impact of the economic activity upon the nature, by simultaneously providing a major share of active population with jobs, thereby, increasing public wellbeing. This might seem as a comeback to old-time technologies having lower environmental impact and making all people work hard. The authors hold that it is possible also with new and modern technologies designed for effective use of resources, waste and emission reduction, and making the human work easier. The severe social problems have been caused by high unemployment rates, especially in the rural areas, demand creation and maintenance of work places. In times when all resources are scarce, except for manpower, it should be used more efficiently. The development of a social security system and equitable distribution of benefits is not sufficient for solving the problem with unemployment. To gain satisfaction, people need to develop their capabilities and feel useful for their family, community, and public. Latvia, likewise also other European countries, is experiencing the problem of human degradation, since people they are losing the sense of meaningful life, despite various social benefits and care facilities. This is a serious obstacle for sustainable development.

Green economy is also closely linked to the concept of sustainable development. Sustainable development requires that industrially developed countries seek steady state economy, which is characterised by more-durable goods with low rates of throughput, qualitative improvement, and non-growing population (H.Daly, 1991). Developing countries with their comparatively small impact upon environment deserve the possibility to solve the problems of poverty by economic development and actual growth. Transition economies are somewhere in-between. There is still the need for economic growth to solve problems of unemployment, poverty and social deprivation, whereas, the lower consumption levels might be an advantage under circumstances when change of consumption patterns is inevitable.

Latvia as a transition economy faces the dilemma of economic growth and reduction of environmental impact. On the one hand, Latvia can be considered quite a green country what is supported by statistical figures and compound sustainability indexes used worldwide. For example, forest covered territory in Latvia is around 50 per cent; greenhouse gas emission (GHG) in 2009 amounted only to 40 per cent of the 1990 levels (the lowest indicator in the EU) (European Union, 1995-2011); and Latvia is the only country from those listed in Annex I to the United Nations Framework Convention on Climate Change, with negative GHG emission (including emissions/removals from land use, land-use change and forestry) (UNFCCC, 2011). On the other hand, huge efforts are devoted to achieve rapid economic growth, develop manufacturing and increase exports that may

considerably increase the environmental impact, if it is not undergone in a smart way.

According to the authors, a preferable solution would be to maintain the average consumption at the current level as an informed choice for the sake of cleaner environment than striving hard to achieve higher level of income, by attempting to reduce the environmental impact only afterwards. Therefore, public efforts to facilitate environmentally friendly way of living and develop green economy are worth studying and sharing best practices worldwide.

2. Spatial planning in the Context of the EU policies

Spatial planning is one of the most powerful tools for local governments to promote public involvement in decision-making processes by also promoting green economy. The existing legislation in the EU and Latvia supports both these processes.

Important principles of spatial planning, considering the specifics of the Baltic Sea region, have been developed by the Vision and Strategies around the Baltic Sea 2010 (VASAB), an organisation, which was established in 1992. In 2009, the VASAB presented its Long Term Perspective for the Territorial Development of the Baltic Sea Region. The document underlines the ongoing heavy dependence of the Baltic Sea Region on oil resources and imported energy. These conditions strengthen the necessity for transnational spatial and development planning for the Baltic Sea Region in the context of green economy (VASAB 2010, 2009).

In the European Union strategy "Europe 2020" sustainable growth is identified as one out of three key goals for a resource efficient, greener, and more competitive economy (Europe 2020, 2011). The authors consider that all European spatial and regional planning documents contain the principle of sustainability. The sustainability principle is crucial for developing green economy in the entire European Union, including urban and rural areas. Spatial planning is a crucial legal tool for local governments to regulate the development of territories, including construction for production and service purposes.

3. Statutory commitment of public participation

The rights and duties of public involvement as provided for in the principle of openness, stating that the spatial plan is developed by public involvement, ensuring openness of information and decision making, is laid down in Section 4 of the Spatial Development Planning Law of the Republic of Latvia, effective as of 1 December 2011. The law provides that the responsible authority has the duty to provide information and ensure decision-making transparency, clarify public opinion and organise public participation in the territory development planning, providing the widest possible and understandable information (Spatial Development Planning Law, 2011). The law aims to ensure that spatial development is planned in a manner to increase environmental quality of living and achieve sustainability by effective and efficient use of sites and other resources as well as ensuring a purposeful and balanced economic

Table 1

Development Planning Key Principles

Development Planning System Law (2008)	Spatial Development Planning Law (2011)
<ol style="list-style-type: none"> 1. The principle of sustainable development. 2. The principle of interest co-ordination. 3. The principle of participation. 4. The principle of collaboration. 5. The principle of financial possibilities. 6. The principle of openness. 7. The principle of supervision and assessment. 8. The principle of subsidiarity. 9. The principle of interconnection between development planning and drafting of laws and regulations. 10. The principle of balanced development. 11. The principle of topicality. 12. The principle of document coordination. 	<ol style="list-style-type: none"> 1. The principle of sustainability. 2. The principle of succession. 3. The principle of equal possibilities. 4. The principle of continuity. 5. The principle of openness. 6. The principle of integrated approach. 7. The principle of diversity. 8. The principle of mutual coordination.

Source: Development Planning System Law (2008), Spatial Development Planning Law (2011)

development. Although, spatial planning is a continuous process involving not only development and approval of a spatial plan but also information analysis on the changes required in the future, public participation is of episodic nature. Furthermore, usually public involvement is observed only if some spatial plan affects their personal interests. Having analysed the spatial planning materials that have been submitted to the Ministry of Environmental Protection and Regional Development, it is possible to conclude that only few submissions concern the interests of the entire society. Unfortunately, general public and NGO's treat short-term, spontaneous episodes of involvement, like protests, as the most effective form of participation, although this does not speak for long-term constructive forms of collaboration requiring planning (Indriksone, 2007).

It is important to state that local governments may involve in the spatial planning process not only local inhabitants of the relevant municipality but also people not living there, e.g. experts and NGOs. However, local governments should always keep in mind the aim of their activities – territorial local governments have been created and function to pursue identified interests of local people living there. Therefore, territorial local governments should not subject to the pressure of some particular individuals or an organisation, thereby putting excessive burden upon the owners of land in the relevant municipality.

The scope of the Development Planning System Law (2008) is to promote sustainable and stable development of the state and to facilitate the improvement of quality of life for people living there. In order to analyse the performance of municipalities, a summary on the principles established in the applicable laws and regulations is presented in Table 1. The summary illustrates the possibilities of public participation and support towards green economy. The development plan should be based upon the key principles defined by these laws. Other principles, which supplement or specify the development principles of some particular economic sector should be defined in the laws regulating the relevant sector.

Public participation is essential for every decision making process, whereas, for Latvia, especially topical is

involvement in the development of territorial development planning documents, development of nature protection plans, performance of environmental impact assessment (EIA) and strategic environmental impact assessment, and public discussion of construction plans (Gavena I., et al., 2011).

Public participation in Latvia is effectuated through formal (e.g. associations, foundations, trade-unions, employer organisations, religious organisations) and informal (unregistered initiative groups, interest groups) public organisations and private individuals (public representatives). Analysis of the conducted interviews revealed that a precondition for involvement of local public in the development of green economy was the existence of an active community core, which is well-informed on the existing environmental problems and ready for change.

There are some common features of already approved spatial plans

- approved plans are a kind of compromise between the economic development, environmental protection and the majority of local people choosing the best possible plan, keeping in mind the reserved public attitude towards the economic development perspectives. Meetings, discussions and workshops are an integral part of the consultative work of spatial development planners who also assist in collecting the necessary information, for delivering the message, defining problem solutions by means of "collective wisdom", and increasing trust and effective time management;
- many public recommendations are received for changing the territorial zoning from industrial to environmentally friendly. Slow settlement of ownership issues;
- there are no instruments available for municipalities to deal with slums that are in private ownership or measures to force completion of objects according to the approved plan;
- the plan developed as a result of public discussion is an instrument for the implementation of a strategy approved by the local government;

- the principle of caution is observed – no new solutions are likely to be implemented, in case the public identifies existence of some risk or unclear solutions, instead of flexible and contemporary solutions for the use of some territory, including those that might lead to green economy – as perceived by the planners.

4. Types and samples of partnerships

The authors are giving an overview on the types of partnerships and techniques, which could be used by public, NGOs and municipalities to promote and strengthen green economy activities. This overview is prepared based on the best practices and observations of the authors. The authors have divided partnership types and techniques in three major groups: formal tools such as legislation, spatial planning, and landscape planning; informal tools such as discussion, public actions, public relation activities - as awareness of green economy; and sustainable strategic thinking.

Municipalities with higher level of public involvement apply all three partnership types and techniques. For example, Sigulda municipality considers that the most important tool for partnership and promotion of green economy is spatial plan including landscape planning, aiming at preservation of environmental values and specific culture and history based elements. Municipality and community partnership examples to be named are implementation of the international project "Nature. Urban. Future"; municipal regulation to allow waste sorting only in the confined areas; responsiveness of the municipality towards public complaints and information posting. For example, if the local population have filed a complaint to the municipal authorities that some industrial company is creating excessive amounts of black smoke or that snow above heating mains is melting in the winter, there are follow-up actions by the municipality to verify and prove this information and to find solutions.

Ikskile municipality is supporting the public incentive to transform Ikskile into the first Transition Town in the Baltic States. Transition Town is a movement started in Totnes, the United Kingdom (UK) in 2005 and that has gained much popularity in the UK, the USA, Canada, and Australia. The main objectives of the movement are promotion of independence from fossil fuels and reduction of GHG emissions by putting into practice the famous principle – think globally, act locally. The priorities defined by the municipality are culture environment and youth development. Municipality has two people's centres, several sport teams, and art groups. There are several commissions established involving not only officials but also public, which deal with green economy issues, e.g. Greenery Conservation Commission, Interest and Adult Informal Education Programmes Licensing Commission, Energy audits and Renovation Application Evaluation Commission.

Jurmala as a resort and attractive place for living has to tackle public opinion conflicts. The municipality has double responsibility – development of the city and preservation of Jurmala as a resort of national importance. Active public involvement in Jurmala is observed regarding issues affecting private interests of local population, for example, entrepreneurs supported the idea of a new resort and entertainment opportunities

because they saw changes in the zoning as a possibility for creating new job places. The local inhabitants, on their turn, were against such an idea, claiming that an entertainment zone would cause much noise and make peaceful living impossible. Many discussions concerned also nature territories: a group of people was collecting signatures to protect nature mounts, whereas, another group in Varnukrogs struggled hard to legalise their cottages, thereby, being allowed to perform construction in the nature territories.

A positive example for greener economy is the green light given by Jurmala municipality for a plan of SIA "Zalas tehnologijas" to recycle household waste in metantanks and produce biogas by reconstructing the former Sloka paper mill for this purpose. The plan foresaw production of biogas by recycling Jurmala water treatment plant sludge, imported green-mass, low quality grain, and Jurmala green-mass waste, for example, freshly mowed grass, fallen leaves and sea-sludge.

The municipality of Carnikava has also a number of cooperation examples with local community. The municipality has carried out a research on public consideration of the development strategy for 2010 – 2027. Another example to be named is the decision to introduce a tourism duty, passed in May 2011. The decision brought along an outburst of negative attitude from NGOs, tourism companies, the Ministry of Economics, and public. The example demonstrates the decision is accepted without discussion of tourism entrepreneurs and locals. After emergency meeting of Carnikava Council in July 2011, changes were accepted in the rules of tourism tax in November 2011. The authors' conclusion is that it is necessary to encourage entrepreneurs, NGOs and society for advised activities.

Vidzeme University of Applied Sciences in Valmiera is implementing an international project "Creative Rooms". The aim of the project is to create space for creative activities via lifelong learning activities. These activities are called "Green school classes" for individuals who would like to learn new skills, gain experience, and knowledge on green activities. The average number of participants is 30. The classes are open and take place in the Integrated Library of Valmiera. Valmiera Town Council has a long-term perspective to use biogas for public transport in Valmiera in the future. Biogas is produced by the waste management company "North Vidzeme Waste Management Organisation" in the polygon "Daibe" (Atstaja et al. 2011).

Since 2005, the North Vidzeme Biosphere Reserve Administration is implementing a monitoring programme the main scope of which is to involve local people including school children in the monitoring of nature environment. With the support of the United Nation Development Programme project, the administration has created a Public monitoring support group involved in awareness raising activities, presenting materials and organising workshops on nature for participants in public monitoring. The results demonstrated high interest from local people to get involved in these activities. Local libraries were involved in public monitoring programme as local support points (Druva-Druvaskalne et al, 2009).

The examples of strategic thinking in the abovementioned municipalities are consideration of well-being of people, comprehensive education of youth,

Table 2

Characteristics of sustainability of certain indicators of case study territorial units

Territorial unit	Approved spatial plan	Natural increase per 1000 inhabitants		Market sector economically active statistical units per 1000 inhabitants	
		2009	2010	2009	2010
Jurmala	In 1995; amended in 2010	-4.1	-4.2	44	46
Carnikava	In 2005; amended in 2011	-0.2	-0.3	46	50
Sigulda	Re-approved in 2009	1.8	0	58	61
Valmiera	In 2007; amended in 2011	-0.6	-2.9	61	65
Ikskile	In 2006 for Ikskile town; in 2009 for Tinuzi parish	5.4	2.4	52	61
Latvia	-	-3.7	-4.8	57	60

Source: MEPRD (2011), the Central Statistical Bureau of Latvia (2011)

and preservation of cultural and natural environment as regards all measures taken and long-term projects.

5. Results and benefits for public and municipalities

Analysing the case studies of Latvian municipalities, it was concluded that public participation prescribed by the law very often takes place only episodically, mainly to protect one's own and not public interests. "Not in my backyard!" syndrome persists in many municipalities. Nevertheless, there are also good examples of public local involvement in planning processes and development of green economy initiatives – cleaner technology businesses, educational projects, eco-villages, collective cleanups etc.

The main benefit from involvement of a municipality in green economy is an increased welfare and better living conditions for its people. There is capacity for water treatment and social infrastructure in many municipalities to increase the number of users by cutting the average maintenance costs accordingly. Green management approach of municipalities could serve as a tool for gaining new people. For example, Sigulda municipality is experiencing positive natural population growth in the past three years and the birth rate in 2011 had gone up by 25%.

In Table 2, the authors have compared the research results based upon the best practice in partnership of green economy activities of several municipalities and the average indicators of Latvia. Table 2 demonstrates some sustainability indicators of the authors' study (Livina et al., 2009). All studied local governments have approved spatial plans and the natural increase indicator per 1000 inhabitants was above the average in Latvia (-4.8 in 2010 and -3.7 in 2009) during the global economic crisis, except for Jurmala in 2009. The comparison of economically active statistical units in the market sector per 1000 inhabitants in 2009 and 2010 demonstrate an upward trend that speaks on increasing business and public activity. Although, the indicators of Jurmala and Carnikava as regards economically active statistical units in the market sector per 1000 inhabitants in 2010 is under the average that can be explained by the seasonal nature of the activity profile of these municipalities.

Conclusions, proposals, recommendations

1. Green economy is a way to solve the development and environmental impact dilemma. While changes in the functioning of an economic system are very slow, local governments can promote green economy on the local level, thereby, contributing towards overcoming the crises the world is experiencing.
2. Green economy can be facilitated by support received from the public involvement. Changes in consumption patterns, local economy structure, and public attitude towards preservation of nature are matters of education, awareness, and ethics. Therefore, the priorities for reaching sustainability lie in comprehensive development of youth and interest education.
3. The Spatial Development Planning Law of the Republic of Latvia defines responsibility of a local municipality to involve public in spatial development planning process and the law determines to balance interests of sustainable territorial development between inhabitants and entrepreneurs. This is a formal partnership tool, which could be filled with informal tools as discussions, meetings, observation of place etc.
4. Local governments, which are responsive and support public participation not only formally but in practice, can benefit in multiple ways - increased number of population (considering the downward trend in the entire country) accounting for budget income; increased economic activity with lower environmental impact; and improved health and living conditions of the local population.
5. The authors' recommendation is to make use of all three types of partnership in practice and to involve in municipal activities all possible stakeholders supporting green economy - local people, NGOs, entrepreneurs, libraries, education institutions etc.

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Farming Efficiency Across the EU Member States and Farming Types: Frontier Benchmarking

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Abstract. Most of the Central and East European countries are still peculiar with relatively low efficiency and productivity of agriculture. This paper analyses farming efficiency in the selected European Union Member States during 2009. The aim of this study was to apply the benchmarking method and thus reveal the competitive advantages of the Lithuanian agricultural sector by comparing efficiency of different farming types. The data envelopment analysis was employed for the analysis. The results of analysis showed that for Lithuania, the most prospective farming types in terms of international competitiveness were those related to animal farming, namely, dairying (milk) and mixed farming.

Key words: efficiency, productivity, farming types, European Union, data envelopment analysis.

JEL code: C14, C61, Q13.

Introduction

The effective decision-making aimed at sustainable change requires appropriate benchmarking practices. More specifically, the sustainable change can be fostered through benchmarking-based comparative analysis, which enables to identify the best practices and thus, improve the situation. As Jack and Boone (2009) reported with reference to Bogan and English (1994), benchmarking could (i) create motivation for change; (ii) provide a vision for what an organisation can look like after change; (iii) provide data, evidence, and success stories for inspiring change; (iv) identify best practices for how to manage change; and (v) create a baseline or yardstick by which to evaluate the impact of earlier changes. Moreover, a steady growth in productivity and efficiency leads to non-inflationary economic growth, which, in turn, results in reduced unemployment rate and increased earnings.

The issue is of the particular importance in the area of the agricultural policy. As for the European Union (EU) Member States, it is important to streamline the structural and income support policies so that they lead to increase in efficiency as well as competitiveness of the agricultural sector (OECD, FAO, 2011). Therefore, the appropriate benchmarking system would improve the quality of decisions taken by farmers, farmer advisors, and policy makers.

Moreover, the Central and East European countries are specific with relatively high importance of agriculture in the total economy. The latter finding makes agricultural policy especially important here. Usually, the benchmarking processes are based on Key Performance Indicators. Indeed, the multi-criteria assessment should be employed for the analysis, for these indicators are usually conflicting ones and should be considered simultaneously. There is, however, a lack of international comparison of farming efficiency across different farming types. Hence, this study focuses on farming efficiency of the different farming types across the EU Member States.

Data envelopment analysis (DEA) is suitable for the latter purpose. A number of studies have attempted to investigate the issues of efficiency and competitiveness (Krisciukaitiene et al., 2010). Indeed, DEA is a method widely applied for efficiency assessment in agriculture (Van Zyl et al., 1996; Odeck, 2009; Vinciuniene, Rauluskeviciene, 2009; Bojnec and Latruffe, 2008; Van Passel et al., 2009). Gorton and Davidova (2004) provided an overview of papers on farm productivity and efficiency. Rimkuvieni et al. (2010), and Balezentis and Balezentis (2011) have performed an international comparison of the EU Member States' achievements in rural development. Nevertheless, there is a lack of such comparison across different farming types.

The aim of this study is to apply the benchmarking method and thus reveal the competitive advantages of the Lithuanian agricultural sector by comparing efficiency of different farming types. More specifically, this paper focuses at the three Baltic States given they are specific with similar geo-political environment as well as production structure. However, farming efficiency in these states is estimated in relative terms with respect to the EU-27 states. The **object** of the research – technical efficiency of different farming types in the EU. The following **tasks** are set: 1) to describe the DEA method; 2) to define variables identifying farming efficiency; and 3) to apply the DEA model when analysing efficiency of different farming types. The research is based on the Farm Accountancy Data Network (FADN) data covering the period of 2009 (European Commission, 2011). The DEA model was implemented by employing R language, namely, package *Benchmarking* (Bogetoft, Otto, 2011).

Results and discussion

1. Preliminaries of DEA

DEA is a non-parametric method of measuring the efficiency of a decision-making unit (DMU) such as a firm or a public-sector agency. The very term of efficiency was initially defined by Debreu and then by Koopmans.

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Debreu discussed the question of resource utilisation at the aggregate level, whereas Koopmans offered the following definition of an efficient DMU: *A DMU is fully efficient if and only if it is not possible to improve any input or output without worsening some other input or output.* Due to similarity to the definition of Pareto efficiency, the former is called Pareto–Koopmans Efficiency. Finally, Farrell summarised research of Debreu and Koopmans, thus, offering frontier analysis of efficiency and describing two types of *economic efficiency*, namely, *technical efficiency* and *allocative efficiency* (indeed, a different terminology was used at that time). The concept of technical efficiency is defined as the capacity and willingness to produce the maximum possible output from a given bundle of inputs and technology, whereas the allocative efficiency reflects the ability of a DMU to use the inputs in optimal proportions, considering respective marginal costs. However, Farrell did not succeed in handling Pareto–Koopmans Efficiency with a proper mathematical framework.

The modern version of DEA originated in studies of A. Charnes, W. W. Cooper and E. Rhodes. Hence, these DEA models are called CCR models. Initially, the fractional form of DEA was offered. However, this model was transformed into input- and output-oriented multiplier models, which could be solved by means of the linear programming (LP). In addition, the dual CCR model (i. e. envelopment program) can be described for each of the primal programs.

Unlike many traditional analysis tools, DEA does not require to gather information about prices of materials or produced goods, thus making it suitable for evaluating both private- and public-sector efficiency. Suppose that there are $j = 1, 2, \dots, t, \dots, N$ DMUs, each producing $r = 1, 2, \dots, m$ outputs from $i = 1, 2, \dots, n$ inputs. Hence, DMU t exhibits input-oriented technical efficiency θ_t , whereas output-oriented technical efficiency is a reciprocal number $\theta_t = 1/\phi_t$. The output-oriented technical efficiency ϕ_t may be obtained by solving the following multiplier DEA program:

$$\begin{aligned}
 & \max_{\phi_t, \lambda_j} \phi_t \\
 & \text{s. t.} \\
 & \sum_{j=1}^N \lambda_j x_i^j \leq x_i^t, i = 1, 2, \dots, n; \\
 & \sum_{j=1}^N \lambda_j y_r^j \leq \phi_t y_r^t, r = 1, 2, \dots, m; \\
 & \lambda_j \geq 0, j = 1, 2, \dots, N; \\
 & \phi_t \text{ unrestricted.}
 \end{aligned} \tag{1}$$

In Equation (1), coefficients λ_j are weights of peer DMUs. Noteworthy, this model presumes the existing constant returns to scale (CRS), which is rather arbitrary condition. CRS indicates that the manufacturer is able to scale the inputs and outputs linearly without increasing or decreasing efficiency.

Whereas, the CRS constraint was considered over-restrictive, the BCC (Banker, Charnes, and Cooper) model was introduced. The CRS presumption was overridden by introducing a convexity constraint $\sum_{j=1}^N \lambda_j = 1$, which enabled to tackle the variable returns to scale (VRS). The BBC model, hence, can be written as follows:

$$\begin{aligned}
 & \max_{\phi_t, \lambda_j} \phi_t \\
 & \text{s. t.} \\
 & \sum_{j=1}^N \lambda_j x_i^j \leq x_i^t, i = 1, 2, \dots, n; \\
 & \sum_{j=1}^N \lambda_j y_r^j \leq \phi_t y_r^t, r = 1, 2, \dots, m; \\
 & \sum_{j=1}^N \lambda_j = 1; \\
 & \lambda_j \geq 0, j = 1, 2, \dots, N; \\
 & \phi_t \text{ unrestricted.}
 \end{aligned} \tag{2}$$

The best achievable input can therefore be calculated by multiplying actual input by technical efficiency of certain DMU. On the contrary, the best achievable output is obtained by dividing the actual output by the same technical efficiency $\theta_t = 1/\phi_t$, where ϕ_t is obtained from Equation (2). The difference between the actual output and the potential one is called slack. In addition, it is possible to ascertain whether a DMU operates under increasing returns to scale (IRS), CRS, or decreasing returns to scale (DRS). CCR measures gross technical efficiency (TE) and, hence, resembles both TE and scale efficiency (SE), whereas BCC represents pure TE. As a result, pure SE can be obtained by dividing CCR TE by BCC TE. Noteworthy, technical efficiency describes the efficiency in converting inputs to outputs, while scale efficiency recognises that economy of scale cannot be attained at all scales of production.

2. Comparison of farming efficiency in Lithuania and selected countries

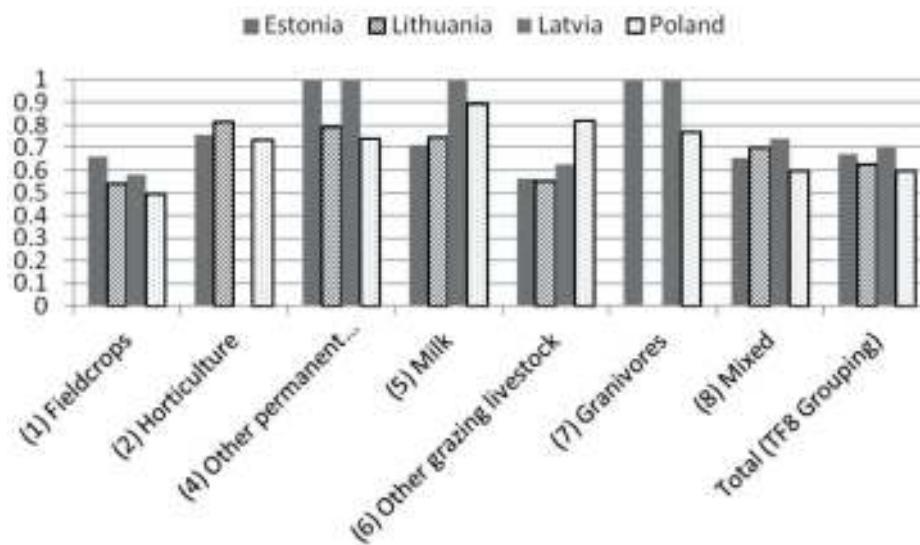
As it was mentioned before, our analysis was based on the FADN data. More specifically, the TF8 farming type classification was employed for the analysis. The latter classification defines the following eight farming types: Fieldcrops; Horticulture; Wine; Other permanent crops; Milk; Other grazing livestock; Granivores; and Mixed. In addition, the aggregate category (Total) is defined for each Member State. Considering wine is not produced in the Baltic States, the authors did not take into account the latter farming type. Thus, the total number of observations accounted for 170 (8 farming types x 27 Member States minus 46 missing observations).

The farming efficiency was estimated in terms of input and output indicators. The following input indicators

covered the land, labour, and capital factors employed in agricultural production: utilised agricultural area (UAA) in hectares (ha), total labour in Annual Working Units (AWU), total assets in EUR, and intermediate consumption in EUR. The output indicators identify crop, livestock, and other output (in EUR). The applied output decomposition enabled to distinguish between different production structures specific to certain farming types. The DEA minimises input and maximises output indicators when calculating efficiency scores.

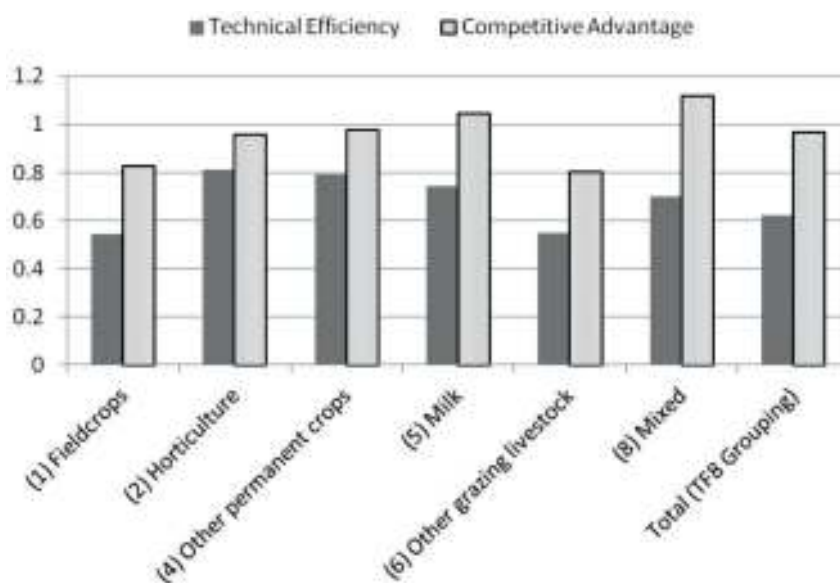
The R package *Benchmarking* (Bogetoft, Otto, 2011) was employed for DEA computations described in the antecedent section. More specifically, the output-oriented DEA model was applied, for agricultural producers can increase outputs by means of modernisation, whereas inputs are less likely to be altered.

The main findings are presented in Figure 1, which depicts VRS technical efficiency across the three Baltic States and Poland. In this case, Poland was chosen as the most proximate state peculiar with similar geopolitical environment. The last group of columns in Figure 1 describes the overall technical efficiency of farming in the enumerated states. More specifically, Latvia was ranked the first (TE=0.7), whereas Estonia (TE=0.67), Lithuania (TE=0.62), and Poland (TE=0.6) remained behind. As for Lithuania, the most efficient farming types were horticulture (TE=0.81), other permanent crops (fruit and permanent crops combined; TE=0.79), milk (TE=0.74), and mixed farming (TE=0.7), in that order. Meanwhile, other permanent crop farming and granivore farming appeared to be fully efficient in Estonia, whereas the same types plus dairying were fully



Source: authors' estimations based on the FADN data (European Commission, 2011)

Fig. 1. Technical efficiency of various farming types across the selected states, 2009



Source: authors' estimations based on the FADN data (European Commission, 2011)

Fig. 2. Technical efficiency and competitive advantage of various farming types in Lithuania, 2009

efficient in Latvia. However, the FADN did not provide data for granivore farming in Lithuania and horticulture in Latvia.

These differences in TE, however, are impacted by the nature of different farming types. Hence, further analysis is needed for each particular farming type. For instance, the mean efficiency of granivore farming was 0.86, that of horticulture – 0.85, that of other permanent crops – 0.81, that of dairying – 0.71 etc. (as of 2009). The competitive advantages in this case can be revealed by comparing, for instance, Lithuanian TE and the EU-27 TE for specific farming type. The latter ratio and technical efficiency for each farming type are depicted in Figure 2. As one can note, the highest competitive advantage was observed for mixed farming and dairying. These farming types were more efficient than the average EU farm specialised in respective area (ratios 1.12 and 1.04, respectively). The previously mentioned farming types—horticulture and other permanent crops (fruit and permanent crops combined)—were also approaching the mean EU efficiency for certain farming type (ratios 0.95 and 0.97, respectively).

For Lithuania, the most prospective farming types in terms of international competitiveness are those related to cattle production, namely, dairying (milk) and mixed farming. Indeed, Lithuania is specific with high availability of feed. Furthermore, the dairying sector underwent some kind of modernisation even before Lithuania acceded to the EU. Hence, milk products are being exported to both the EU and third countries, thus, constituting a stable source of income. The enumerated advantages, however, are likely to shrink in the future, mainly because of growing wages and other expenditures. In addition, the current absolute level of intermediate consumption might lead to high values of efficiency measures, albeit it is not sufficient to provide momentum for Lithuanian farmers' graduation in the commodity chain. Noteworthy, the increased activity of animal farming would in turn lead to increase in demand for feed. To conclude, the new Rural Development Programme as well as the agricultural policy in general should be focused on support of the farming types, which contribute to increase in export.

Conclusions

1. The farming efficiency was estimated in terms of input and output indicators. The output-oriented data envelopment analysis model was applied for the analysis. Comparison of the selected EU Member States showed that the Latvian agricultural sector was ranked the first (TE=0.7), whereas Estonia (TE=0.67), Lithuania (TE=0.62), and Poland (TE=0.6) remained behind (as of 2009).
2. For Lithuania, the most prospective farming types in terms of international competitiveness are those related to animal farming, namely, dairying (milk) and mixed farming. Indeed, this situation is due to low production costs. Accordingly, the new Rural Development Programme as well as the agricultural policy in general should be focused on support of the farming types, which contribute to increase in export. The public support could be delivered through income and structural support measures as well as

institutional alleviations (establishment of farmers' markets).

3. The current level of intermediate consumption is relatively high in Lithuania if compared with other EU Member States. However, it still might not be sufficient in absolute terms to modernise the agricultural production and, thus, successfully compete in the common market. In this context, the pressure on a more reasonable CAP payments' distribution among the EU Member States becomes especially important.
4. The FADN practice can be improved by establishing the uniform estimation of input costs. For instance, labour costs and capital depreciation costs remain the most problematic issues. Thereafter, the allocative efficiency of farming could be estimated.

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Analysis of Competitiveness of Latvia's ICT Service Sector

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Abstract. The recent economic and financial crisis has again raised issues on organisation and industry competitiveness. The information and communication technologies (ICT) industry of Latvia is often mentioned as one of the industries with the highest potential in Latvia and seen as one of the future foundations of the country economy. However, there have been very few researches done on the industry competitive position in the country as well as research on future development forecasts in an extended manner from the perspectives of strategic forces and resource based view.

The aim of this paper is to analyse Latvian ICT industry competitiveness using Porter five forces model and resource based view models. The research will provide recommendations for strategy developments for individual organisations and the industry. The research includes literature review, exploratory interviews with experts of Latvian ICT industry, quantitative analysis, logical analysis, and generalisation. This paper contributes to organisations, which are taking strategic decisions on entering the ICT industry of Latvia and it will help shape strategies for the current ICT industry players in Latvia. The paper could be used by governmental institutions developing economic strategies of Latvia.

Key words: ICT industry, industry analysis, competitiveness.

JEL code: L86.

Introduction

Information and communication technologies are increasingly moving to the core of national competitiveness strategies globally, because of their power as a critical enabler of growth, development, and modernisation. Latvia is not an exception in this global race, and thus, ICT is defined as one of building blocks of information society and knowledge economy in Latvia.

Globally, ICT is the priority of many countries and best index to compare countries in information society and ICT developments area. It is "Networked readiness index" developed by the World Economic Forum and ISEAD business school. The index compares 138 countries, which are evaluated on 31 environment, 20 readiness and 20 usage components of ICT. In 2010 – 2011, the total rank of Latvia is 52 with the score of 3.9. The Baltic neighbours of Latvia are ranked higher: Estonia - 26 with the score of 4.8 and Lithuania - 42 with the score of 4.2 (Dutta, Mia, 2011).

The National Development Plan of Latvia 2007-2013 defines ICT as one of the prerequisites for successful national priorities: an educated and creative individual, technological excellence, and flexibility of companies, and the development of science and research.

Competitiveness of local ICT industry is an important area for reaching long-term priorities of information society development, since the ICT industry is delivering strategic resource for the entire society to reach sustainable development and improve living standards. Basically, ICT industry is delivering key commodity of knowledge economy on the national level. National development of information society is as effective as the ICT industry is capable to innovate and deliver required products and services. So, competitiveness of local ICT industry should be considered when prioritising resources for particular industry support on the national level.

Theoretical foundation of competitiveness analysis

National prosperity does not grow from labour, natural resources, and interest rates as insist traditional economists. A nation's competitiveness depends on industry capacity to innovate and upgrade (Porter, 2008). Competitiveness should be sustainable and based on competitive advantage. According to Barney (1991), competitive advantage is when a company is implementing value creating strategy not simultaneously being implemented by any current or potential competitors; while sustained competitive advantage is when value creating strategy is not simultaneously being implemented by any current or potential competitors and when these other companies are unable to duplicate the benefits of this strategy.

Traditional industry analysis can be made using Porter's five competitive forces model that captures essential division of value between the current and potential industry players. This model may be used to determine the ultimate profit potential in the ICT industry measured in terms of long-run return on invested capital as well as industry structure provides snapshot of the rules of the game of industry (Porter, 1998). Porter model assumes that companies within an industry or within a strategic group are identical in terms of the strategically relevant resources they control and strategies they pursue (Porter, 1981). Resource heterogeneity, which develops in an industry or group, will be very short lived because the resources that companies use to implement their strategies are highly mobile, for example, they can be bought or sold on factor markets (Barney, 1991).

Five forces model (Porter, 1998; Magretta, 2012) provides the evaluation of new entrants to industry, suppliers, buyers, substitutes, and rivalry among the existing industry players. Number of new entrants in industry depends on entry barriers, which typically are

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economies of scale, switching costs, capital requirements, brand identity, and products differences; access to distribution channels; cost advantages; technology intensity; and government policy. Another important factor to consider analysis potential of new entrants is the probability of retaliation of existing competitors. The more intense is the competition, the higher is the probability of retaliation from existing competitors. The following factors are sources of increased rivalry: slow industry growth, diverse competitors, numerous or equally balanced competitors, high exit barriers, lack of product differentiation or switching costs, and high fixed and storage costs.

Buyers are the third area to consider for analysis as buyers may force down prices, bargain for better quality and service, or play competitors off against each other. Buyer power constitutes buyer bargaining leverage and buyer price sensitivity. Buyer leverage is increased by low buyer concentration, especially in a fragmented industry, buyer volume, low switching costs of buyer, and ability of buyer to integrate backward or produce in-house as well as buyer has full information and availability of substitute products. Buyer price sensitivity is increased if product forms a high share of buyers total costs, buyer has low profit margins, product is standard, product is unimportant to quality of buyers' product, and industry product does not save the buyer money. Thus, it is strategically important to find buyer who possesses the least power, because that may improve the strategic position of an enterprise.

Supplier bargaining power may increase due to the following factors: suppliers are more concentrated than companies in the industry they sell to, lack of substitute products, industry is not an important customer of the supplier, suppliers product is an important input to buyers business, suppliers products are differentiated and/or they have built up switching costs, or suppliers group possess a credible threat of forward integration. Hence, substitute products should be considered when analysing industry. Pressure from substitute products will depend on relative price performance of substitutes, switching costs, and buyer propensity to substitute.

Industry context should be analysed by a simple industry fragmentation test (Porter, 1998): the industry is fragmented if top 4 companies have less than 40% of the market share. Fragmented industries have weak bargaining position with suppliers and buyers. The ways for enterprises to overcome fragmentation are specialisation, unique features or service, and focusing on bottom line by having low overhead, tight cost control, and attention to detail.

In research done by Rumelt (1991), one of key conclusions is that company's specific variables are more important than industry attractiveness. Thus, it is important to consider resource based view that combines external environment and enterprise resources when analysing competitiveness (Montgomery, Collis, 1995). Resource-based view of competitive advantage examines the link between company's internal characteristics and performance. This model assumes that companies within an industry may be heterogeneous with respect to the strategic resources they control. Second, this model assumes that

these resources may not be perfectly mobile across companies, and thus, heterogeneity can be long lasting (Barney, 1991).

The resource-based view of the company pushes value chain logic further, by examining the attributes that resources isolated by value chain analyses shall be possessed in order to be sources of sustained competitive advantage. Thus, resources of a previous industry setting may be weakness, or simply irrelevant in a new industry setting (Barney, 1991).

Company's resource shall have four attributes in order to hold potential of sustained competitive advantage (Barney, 1991; Foss, 1997):

- it shall be valuable, in the sense that it exploits opportunities and/or neutralises threats in a company's environment;
- it shall be rare among a company's current and potential competition;
- it shall be imperfectly imitable. Imperfectly imitable resources can follow one or the combination of three reasons: (a) the ability of a company to obtain a resource is dependent upon unique historical conditions; (b) the link between the resources possessed by a company and a company's sustained competitive advantage is casually ambiguous; and (c) the resources generating company's advantage are socially complex;
- there cannot be strategically equivalent substitutes for this resource that are valuable but neither rare nor imperfectly imitable.

Position of the ICT industry service sector in the economy of Latvia

In 2010, Latvia ICT industry contributed 3.6% of the total gross value added to the economy of Latvia. ICT industry comprises ICT manufacturing, ICT wholesale, and ICT services, thus, employing 17 900 persons in 2 899 enterprises with the turnover of LVL 1 452 million (Table 1). Further, the article analyses ICT service sector in details.

ICT services feature 6.34% of all service enterprises, 6.87% employed persons and 15.4% of value added in the service sector of Latvia. ICT services employ 82% of the industry employees and represent 84% of the enterprises. ICT services include software publishing, telecommunications, computer programming and consulting, data processing, hosting, web portals, and repair of computers and communication equipment.

Telecommunications is the biggest ICT service sector generating 68% of all ICT service revenues and 76% of all profits before taxes. During 2008-2010, there were established 394 new enterprises in the ICT service sector and 500 new employees entered this sector. Most of new enterprises or 64% were established in computer programming, consulting and related activities; followed by data processing, hosting and web services – 35% of new enterprises (Central Statistical Bureau of Latvia, 2011).

ICT industry in Latvia is back to the 2% growth in 2010 after the decline of turnover by 15% in 2009. Computer programming and consulting turnovers declined by 23% in 2009 and were back on the positive track by an annual growth of 6% in 2010. Data processing, hosting and web

Table 1

Key indicators of the Latvian ICT sector enterprises in 2010

	Number of enterprises	Number of persons employed	Turnover (mln. LVL)
ICT manufacturing	57	800	61
ICT wholesale	418	2 500	621
ICT services	2 424	14 600	770
Software publishing	34	100	3
Telecommunications	413	5 500	522
Computer programming, consulting and related activities	1 285	6 400	173
Data processing, hosting and related activities, web portals	478	1 900	57
Repair of computers, peripheral equipment and communication equipment	214	700	15
ICT industry total	2 899	17 900	1 452

Source: Central Statistical Bureau of Latvia

related business were most stable and even in 2009 their turnovers were growing by 2% and continue with the same trend by 27% growth in 2010. Only telecommunication sector of ICT service industry was still declining by 3% in 2010 (Central Statistical Bureau of Latvia, 2011).

ICT service sector has more variance in terms of value added and profitability depending on service activity of enterprise (Figure 1). Telecommunications is the most attractive service segment in the entire economy of Latvia generating LVL 540 thou. value added on average and LVL 168 thou. profit per enterprise on average. Computer programming and consulting ranks the 8th with the average value added per enterprise amounting to LVL 71.5 thou. and it is the 3rd by the average profit of LVL 11.6 thou. per enterprise (Central Statistical Bureau of Latvia, 2012). Thus, ICT services are a very attractive sector in the economy of Latvia regarding profitability.

Personnel costs constitute the major cost position from the costs perspective. In 2010, personnel costs amounted to 39% of all value added in ICT service sector; although in telecommunications, the proportion of personnel costs in the value added was the lowest - 26%, while it was the highest in computer programming and consulting - 68%, and data processing and hosting - 54% (Central Statistical Bureau of Latvia, 2011). So, the ICT services, especially, computer programming, consulting, and data processing and hosting are dependent on personnel costs and the quality of service employees.

Comparing the average costs of an employee with other activities of Latvia shows that the ICT services - telecommunications ranks the 1st with LVL 10 222 average costs per employee and computer programming ranks the 2nd with LVL 9 848 average costs per employee; thus, ICT services are experiencing higher costs of human resources (Central Statistical Bureau of Latvia, 2012). Reasons behind this are the lack of qualified specialists on the market and high costs of developing such specialists in the companies. Telecommunications can be a different case, because they are the least dependent on people

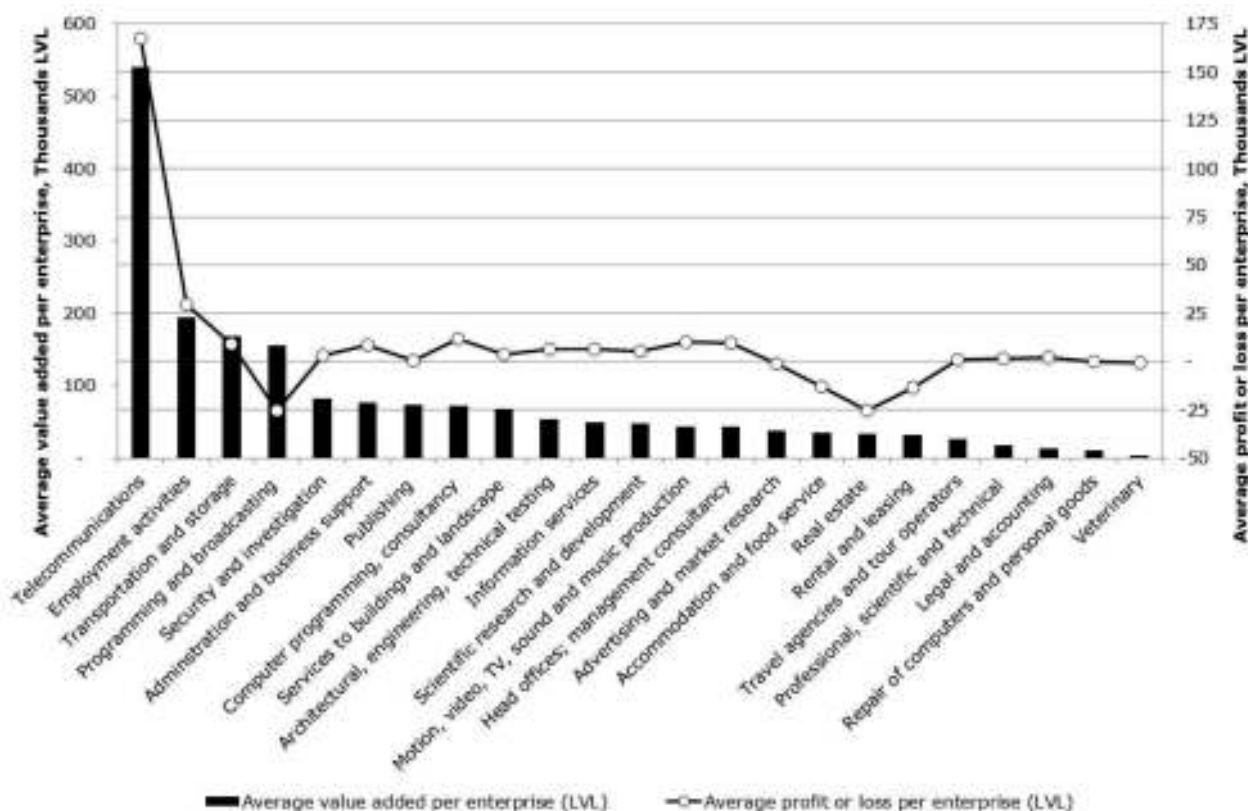
resource, thus, they may be overspending for personnel compared with the average situation in Latvia.

Research and development infrastructure in the country is an important source for developing ICT innovations. The national level Research Centre on Information, Communications and Signal-processing Technologies and ICT Competence Centre are established in ICT sector (Balina, 2011). Yet, this development may not be sufficient for Latvia to reach the level of Baltic neighbours and it could be more complicated to outperform them on global markets, since Estonia is currently one of the leaders among ICT innovators and Lithuania has already made significant investments into national technology park and incubator "Sunrise Valley".

Competitive position and strategic resource availability analysis of the ICT service sector

The ICT service industry of Latvia is open to new entrants in most of the activities. In general, ICT services are the sector with low entry barriers, because an enterprise can be established by one industry specialist with sufficient know-how and some access to customers. This is very explicitly observed in statistics where 84% of all ICT enterprises are operating in service segment.

Mobile telecommunications is the only state regulated sector of ICT services with a limited number of players. Telecommunication sector, especially mobile and fixed line network providers, requires high upfront capital investments, thus, creating high entry barriers in this particular activity. Hence, the top enterprises of this sector are the largest enterprises in the country - Lattelecom and LMT (Table 2). In 2010, Top 5 enterprises were generating 65% of all turnovers, employing 40% of all employees, and providing 28% of all profits in telecommunications activity. Thus, telecommunication sector can be considered as consolidated; although, small enterprises operating in open niches of telecommunications markets are holding over 70% of the industry profits.



Source: authors' calculations based on the data of the Central Statistical Bureau of Latvia

Fig. 1. Comparison of average value added and profits of Latvia service activities, 2010

Top ICT telecommunication sector players in Latvia, 2010

Table 2

	Turnover, 2010 (mln. LVL)	Profit, 2010 (th. LVL)	Profitability, %	Number of employees
Latt telecom, SIA	130.29	19.24	14.77	1191
Latvijas Mobilais Telefons, SIA	125.63	30.46	24.25	435
Tele2, SIA	93.75	21.33	22.75	286
BALTCOM TV, SIA	11.72	1.2	10.23	184
BITE Latvija, SIA	27.31	-8.55	-31.32	134
Total	388.7	63.68	16.38	2230

Source: Diena-Bonier, 2012

Buyers of telecommunications include local households, businesses, and the government. Buyer power is high in this market as services provided are similar. Service providers can differentiate themselves with investments in marketing and customer service by building their brands.

Internet based voice communications are the main substitute and competitor for this sector, thus, the key strategy for companies in this sector is to provide Internet service that has already been done by all key players. At the same time, smaller enterprises are more flexible and they react to the changing market environment faster, because they are not holding long-term investments into telecommunication infrastructure,

thus, improving their profitability and return on capital investments.

Computer programming and consulting is the largest segment of ICT service sector in Latvia, and the entry barriers are the lowest here. On the contrary, rents are still higher in this sector as in other comparable services with high dependency on specialist know-how, for example, management consulting, advertising and marketing, and legal and accounting services. Certification of specialists on specific knowledge and experience of these specialists in different industries and project scales is the entry barrier in this sector. Entry barriers are mainly proprietary knowledge of an individual or company, and switching costs of buyer from one computer software

Profitability analysis of ICT service enterprises in Latvia, 2010

	Average return on capital	Median of return on capital
Software publishing (NACE 58.29)	-90.71	13.70
Programming activities (NACE 62.01)	-566.49	-1.22
Computer consultancy activities (NACE 63.11)	-12.23	0.24
Data processing, hosting and related activities (NACE 63.11)	-0.35	-1.97
Web portals (NACE 63.12)	-206.36	-17.83
All Latvia enterprises	-215.96	-8.91

Source: Lursoft, 2012

solution provider to other. Even though entry barriers are low in this ICT sub-segment, there is a high probability of retaliation from the existing competitors to new entrant. This sector is specifically knowledge intensive, thus, there can be cases when some employees leave the company to establish a new one and take some customer information with them.

Buyers of programmers and IT consulting are local businesses and the government. Buyer power and leverage varies across the offered type of service. There are very lucrative niches where only few players are operating even globally. Local enterprises may have exclusive rights to serve those solutions and there could be sectors where buyer power is high, thus, competitive position of enterprise is weaker.

Data processing and hosting activity has considerably lower barriers than telecommunications but higher entry barriers than programming and IT consulting. Entry barriers depend on the scale, which an enterprise is planning to operate. For example, high initial capital investments are needed in cloud computing scenarios, which are requiring large data centres, and opposite, hosting a provider for a limited number of customers with one or two servers based in the office or even home cellar requires smaller investments. Bigger data centres and cloud offers on the market will lead this segment to consolidation in long term. Consolidation will mainly happen on infrastructure providers, and the number of companies providing different type of services will continue to grow.

From supplier perspective, Latvian ICT services are integrated in partner networks of global technology providers – Microsoft, Oracle, Cisco, VMWare as well as there are lot of custom made solutions, which are integrating to larger platforms. So, there is high concentration around global ICT industry suppliers. In addition, there are companies, which are cooperating with smaller software providers or on self-developed platforms. It is typical for ICT industry that there are high switching costs between suppliers, especially, in enterprise solution space. Lack of substitute products is one source of bargaining power of suppliers.

ICT services have better returns on capital or equity than the enterprises of Latvia in general, although, there are differences between enterprise activity. Return on capital ratios are analysed for 2010, which was a difficult year for the overall economy due to the

recent deep financial crisis (Table 3). In ICT service sector, the best performing average returns on capital are within data processing and software publishing, followed by computer consultancy and software publishing. In 2010, programming enterprises experienced higher losses on average than the enterprises of Latvia in general. Analysing median return on capital, one can conclude that half of enterprises operating in software publishing had return on capital higher than 13.7% and half of computer consultancy enterprises were working with return on capital higher or equal with 0.24%. Half of enterprises in programming were experiencing negative return on capital (-1.22%), data processing and hosting (-1.97%), and web portals (-17.83%).

Overall, this analysis explains that companies in this sector do not have investment funds for research and development on average, and at the same time, it is challenging to attract investment capital in such financial situation. Nevertheless, further financial years will be more with positive ratings, earned profits first cover the previous year losses.

In general, ICT service industry is fragmented due to low entry barriers and no economies of scale caused by high qualification employee requirements. There is almost no possibility to overcome industry fragmentation in ICT services, except some possibilities such as modularising products that could work in programming, IT consulting and developing of implementation and consulting methodologies. Since the possibilities to overcome fragmentation are limited, ICT service companies should cope with fragmentation in long run. Thus, key recommendations for enterprises are specialisation by product or customer type, specialisation by product segment or by type of order, development of unique features or service, focusing on bottom line by having low overhead, and implementing tight cost control and attention to details.

Conclusions

Competitiveness of local ICT industry is an important area for reaching long-term priorities of information society development, since the ICT industry is delivering strategic resource for the entire society to reach sustainable development and improve living standards. National development of information society is as effective as ICT industry is capable to deliver the required products and services. Thus, competitiveness of local ICT

industry should be considered when prioritising resources for particular industry support on the national level.

ICT industry is already contributing significantly to the economy of Latvia and its contribution is expected to grow. Value added and profitability is higher than in the majority of other economic sectors of Latvia.

In telecommunications sector, the biggest threat is a substitute product, such as Internet based voice communications and lower entry barriers in the future that may lead this currently consolidated sector to fragmentation. To keep long-term competitiveness, key player of this sector should be focusing on keeping industry more consolidated and avoiding fragmentation.

In the rest of ICT services activities – software publishing, programming, computer consultancy, data processing and hosting, and Internet portals – specific knowledge and skills is a key to entering this business. As the overall ICT service industry is fragmented, companies in this sector should cope with fragmentation in long run, and the key recommendations for enterprises are specialisation by product or customer type, specialisation by product segment or by type of order, development of unique features or service, focusing on bottom line by having low overhead, and implementing of tight cost control and attention to detail.

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Theoretical and Practical Aspects of Rural - Urban Typology

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Abstract. One of the main goals set both by the European Union and the Latvian government is territorial cohesion and balanced spatial development. The common understanding of urban and rural areas is essential to implement this goal. The aim of this research is to compare and evaluate experience and approaches in classification of rural and urban areas. The methods of analysis, synthesis and logical construction, statistical data calculations as well as scientific discussion were applied in the research. According to the research results, there are numbered approaches in the world - based on demographic indicators, main economic activity, or social beliefs. There is no unified understanding on rural and urban in Latvia as well. If using the Central Statistical Bureau information - 32% of population lived in rural area, based on the OECD approach - 39.3%, while the State Regional Development Agency data show that 35.4% of total population in 2010 lived in rural areas. Such situation can become a problem when implementing national and international development programmes and there is a great need to develop a single classification of spatial division.

Key words: rural – urban dichotomy, spatial development.

JEL code: R00

Introduction

The main trend in today's territorial development is the concentration of people and resources in cities, leading to unequal development of territories. The year 2008 was a dividing line when half of the world's population lived in cities. In Europe, urbanisation is more explicit – already in the 1950s, more than half of its population lived in cities (United Nation, 2009). As a result, the economic structure of territories changes, human lifestyles and the perception of life have become more diversified, leading to unequal development of territories. One of the main goals set both by the European Union (EU) and the Latvian government is to balance the development of cities and rural areas by promoting their mutual functional linkages and partnerships (Latvijas ilgtspējīgas attīstības..., 2010). An important issue in implementation of these goals is a common understanding of spatial division – which criteria classify area as urban, and which – as rural. The development of clear criteria is vitally essential for effective analysis of the spatial processes and successful development of the entire country.

The rural – urban typology related issues have been analysed in studies by different authors in Latvia: A. Melluma (1994), J. Iesalnieks (1995), A. Krauklis (2000), Z. Krisjane, M. Berzins (2008), and L. Kule (2010).

The aim of the research is to compare and evaluate experience and approaches in classification of rural and urban areas in the world and in Latvia. the following tasks are set to achieve the goal:

- 1) to evaluate the theoretical aspects of the concepts 'rural' and 'urban' in three dimensions - demographic, economic, and social;
- 2) to analyse the small-town identification possibilities as rural or urban area.

Research methodology – the methods of analysis, synthesis and logical construction, statistical data calculations as well as scientific discussion were applied for fulfilment of the above assignments.

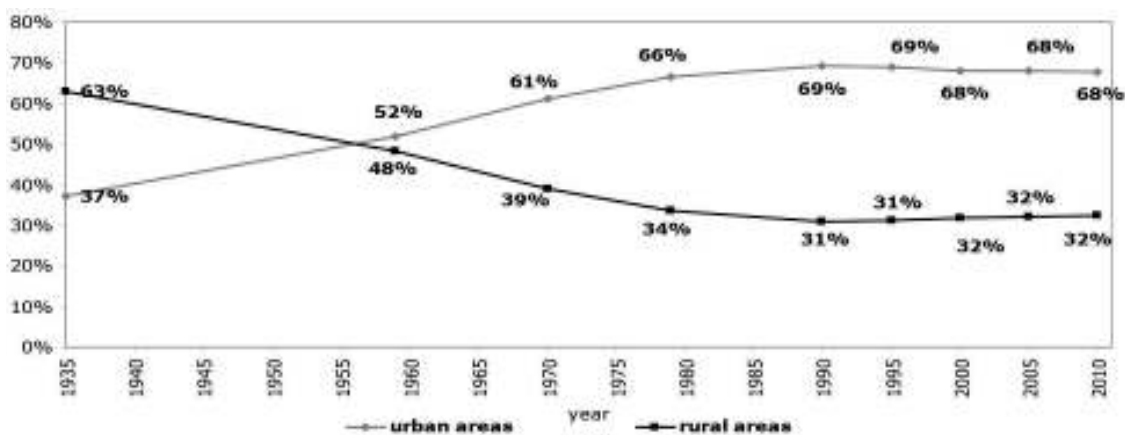
The regulatory enactments of the Republic of Latvia, scientific publications and special literature as well as statistical data from national and international institutions were used to achieve the goal and fulfil the tasks.

Results and discussion

Traditionally, 'rural' and 'urban' have been seen as opposites. Most development theory and practice is implicitly based on the dichotomy between rural and urban areas, populations, and activities. This is reflected in the division of policies - urban planners usually concentrating on urban nodes and giving scant attention to agricultural or rural-led development, while rural development planners tend to ignore urban centres and define rural areas as consisting only of villages and their agricultural land (Tacoli, 1998).

In the past, there was a clear visual line between rural and urban areas – fortifications or walls. At present, such physical boundaries do not exist, thus, it is often very difficult to determine at which point the city ends and where the rural area begins. The distinction between 'rural' and 'urban' is probably inescapable for descriptive purposes; however, it often implies a dichotomy, which encompasses both spatial and sectoral dimensions. The key issue dividing various individual authors (Hurbanek, 2008; Pezzini, 2001; Woods, 1998) and their approaches is the manner in which they define rural or urban areas. While Hurbanek (2008) tries to find key characteristics of various rural settlements, when defining rural areas, other authors (Pezzini, 2001) discuss the delimitation of rural areas on the basis of an urban – rural dichotomy, without clearly defining individual categories.

Presently, there are several criteria according to which a particular territory can be defined as urban or rural – by population number, density, economic activity, distance from cities etc. H. Schmal (1981) compiled all the criteria that can be used as a benchmark for determining the status of territories in three dimensions – *demographic, economic, and people behaviour*.



Source: authors' construction based on the Central Statistical Bureau data, 2011

Fig. 1. Share of population in rural and urban areas in Latvia, 1935 - 2010

1. The demographic approach

The demographic approach stresses demographic indicators as the main ones, determining whether a place belongs to an urban or a rural area. In Europe, the majority of countries characterise urban and rural areas according to the number of population. Because of national differences in the characteristics that distinguish urban from rural areas, the distinction between the urban and the rural population is not yet amenable to a single definition that would be applicable to all countries or, for the most part, even to the countries within a region (United Nations Statistics Division, 2011). The Nordic countries (Norway, Sweden, Iceland) consider settlements with 200 inhabitants as urban, in the Central Europe, the customary limit is 2,000 (Czech Republic, France, the Netherlands) or 5,000 inhabitants (Austria, Slovakia, Germany). Countries of the Southern Europe (Greece, Italy, and Portugal) and also Poland, and Switzerland use a limit of 10,000 inhabitants for the delimitation of urban settlement (Demographic Yearbook, 2005).

In Latvia, the Law on Administrative Territories and Populated Areas (2008) determines - the area is classified as an urban if the population exceeds 2000, the rest of the territory - as rural. This approach can be used conditionally, as in the classification other aspects are taken into account, for instance, a developed infrastructure, road network, secured business opportunities, and cultural services. Over the recent years, the number of towns has not changed in Latvia - in total 76 populated places were granted as towns. As a result, there are towns with a relatively small population, such as Durbe (621 inhab.), Subate (736 inhab.), or Ainazi (993 inhab.), while the largest population, apart from republic cities, is in Ogre - almost 26 000. Presently, the number of population is less than 2000 permanent residents in 21 towns (27% from all towns) as it is set by the Cabinet of Ministers (Central Statistical Bureau, 2011). According to the legislative acts, these populated places have to change their status but it is not done because of various reasons - historical traditions, protests of population etc. Although, discussions on changing the status of small towns have been started many times on the national level, no decision has been made so far. This approach is used by the Central Statistical Bureau as the

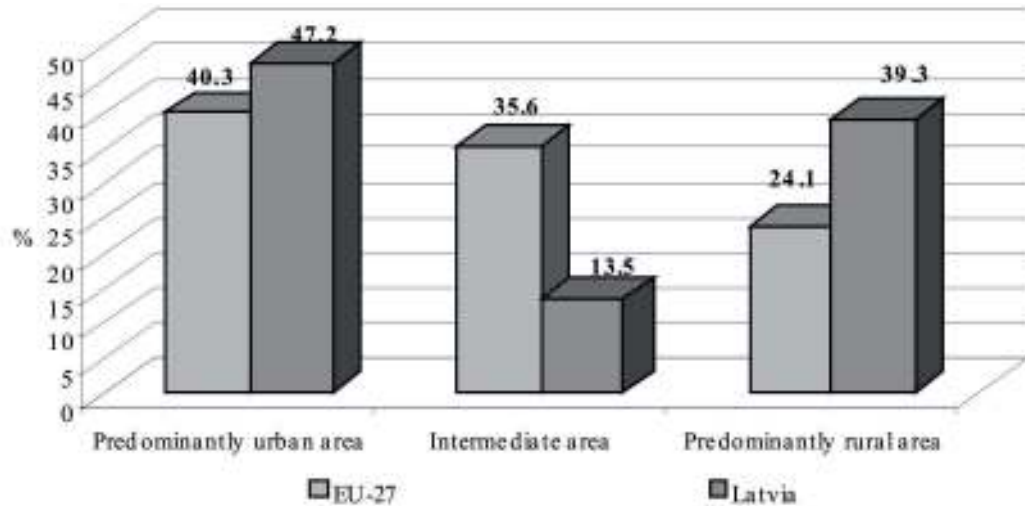
main principle to summarising and analysing the statistical indicators on the national level. In Latvia, the population share living in urban areas has considerably changed over time (Figure 1). Generally, 37% of population lived in urban areas in 1935, since then the share of population has been increasing continuously until reaches the top in 1990 - 69% of population lived in urban areas.

Yet, this approach faces various problems, for instance, the number of declared and actual population can vary considerably, people live in one place and work in another place, people have several places of residence and work. Therefore, it is difficult to determine the number of population in a particular territory.

As a criterion, other demographic indicators can be used, for instance, population density that is undoubtedly higher in urban territories. This approach is used by the Organisation of Economic Cooperation and Development (OECD) - within each of its 30 member countries, local areas were clustered according to the rural and urban typology, where rural areas were identified as communities with population densities below 150 inhabitants per square kilometre. The regions are also grouped in three clusters depending on the share of regional population living in rural areas: predominantly rural (over 50%), intermediate (15 to 50%), and predominantly urbanised (below 15%) (OECD Regional typology, 2010).

According to this typology (Figure 2), only 24.1% of the EU population lives in predominant rural areas. In Latvia, totally 39.9% of total population lives in predominant rural areas, yet, the territory covers bigger part of Latvia (62%). These trends - exacerbated by structural reductions in agricultural employment and ageing of the population - result in urban over-concentration causing further social and environmental problems. Following the OECD methodology, Riga statistical region is classified as predominantly urban, Kurzeme and Latgale region - as intermediate region, and Zemgale, Vidzeme and Pieriga - as predominantly rural regions based on share of rural population (A Revised Urban..., 2010).

Some countries, such as Japan, would require different population threshold to identify areas, for instance, a threshold of 500 inhabitants per km² due to the higher population density compared with other countries. As well as Belgium, where two different optimal



Source: authors' construction based on the Eurostat data, 2010

Fig. 2. Share of population in the EU-27 and Latvia, 2010

Table 1

Traditional stereotypical differences between urban and rural populations

Urban	Dimension	Rural
Secondary and tertiary sector dominant	Economy	Primary industry sector and supporting dominant activities
Manufacturing, construction, administration and service	Employment	Agriculture, forestry and other primary industry occupations
Higher than national averages	Education	Lower than national averages
High	Services accessibility	Low
Liberal and radical elements are strongly represented	Political views	Conservative, resistance to change

Source: authors' construction based on Scott, Gilbert, Gelan, 2007

population density limits are identified for its two regions: at 600 inhabitants per km² for Flanders and at 300 inhabitants per km² for Wallonia (Pizzoli, Xianoning, 2000).

Although Latvia is not an OECD member state and, thus, its formal definition is not mandatory for Latvia, taking into account the experience of other new EU Member States (Poland, the Czech Republic, Slovakia), Latvia can use this classification as the main principle in spatial division. If using the OECD definition, the majority of Latvian small cities and other territorial units meet the criteria of rural areas. In administrative division aspect of the 110 Latvian municipalities, only two (Stopinu and Salaspils) would be defined as urban areas with a density of 187 and 184 inhabitants per km² as well as all the republic cities (Central Statistical Bureau data, 2011).

When delimiting urban or rural areas according to population density, the comparison of various European countries in terms of municipality size is problematic. On the one hand, there are states with very large municipalities (measured by the number of inhabitants), such as Great Britain and Scandinavian countries, while on the other hand, there are countries with relatively small municipalities that are very numerous in certain

regions. Such countries include the Czech Republic, France, and Latvia among others (Regions at the Glance, 2005).

2. Economic approach

This approach views any territorial division by engagement of population in various economic sectors, industries, and occupations emphasising that certain industries are appropriate for different territories (Pizzoli, Xianoning, 2000).

Goals of land use, building density, morphology, and distance between buildings are some of the features that help understand the differences between rural and urban areas. Traditionally, it is considered that urban areas are characterised by intense built-up, while the large distances between buildings are more characteristic to rural areas. European Spatial planning documents define rural areas as a certain type of landscape and land use where agriculture is the key activity. Density of settlement may not, however, be a sufficient criterion in many countries, particularly where there are large localities that are still characterised by a truly rural way of life. Such countries will find it necessary to use additional criteria in developing classifications that are

more distinctive than a simple urban rural differentiation. Some of the additional criteria that may be useful are the percentage of the economically active population employed in agriculture, the general availability of electricity and/or piped water in living quarters, and the ease of access to medical care, schools and recreation facilities (Population Density and Urbanisation, 2011). For instance, in Panama and Nicaragua areas are considered as urban if there are streets, electric light, and water supply systems, meanwhile in the Russian Federation, Armenia, Azerbaijan, and Georgia, a number of inhabitants and predominance of agricultural or non-agricultural workers and their families are taken into account.

In Latvia, this approach is reflected in the long-term planning document "Sustainable Development Strategy of Latvia until 2030" (2010) - to maintain a traditional lifestyle with the historic settlement structures, landscapes, and traditions. This can be achieved by ensuring that the rural areas parallel production of agricultural and forestry produce, provides recreational opportunities for urban residents, high-quality living space for urban workers as well as territory for non-agricultural businesses. The document stresses the need to develop both the agriculture and forestry industry as well as diversify economic activity without any priorities.

In rural areas, the availability of basic services (trade, social, health, education, infrastructure etc.) impacts possibilities of the economic activity and quality of life. Services are a precondition for a new, flexible economic development, innovation in local communities. Various researchers from European and the North American countries have found a reduction in service availability especially in rural areas (Latvija. Parskats par..., 2005). In Latvia, the project of Guidelines in Regional Policy 2012 - 2018 (2011) defines the basket of services available for inhabitants depending on the classification of populated areas - village, county development centre, regional development centre (21), the National Development Centre (5), and the International Development Centre (4). On the lowest level, public and private institutions have to provide basic services in culture, health, social care, education and science, postal services, and business; on each next level, the list of available services are expanding.

However, the economic development causes a situation in which business activities are not explicitly differentiated depending on their relation to rural or urban areas - quite often central offices of large companies are not located in city centres anymore, more often urban residents live a "green" lifestyle, start growing fruit and vegetables, thus becoming engaged in agriculture. Whereas, in agricultural areas, alternative businesses of various types are done - tourism, health and entertainment services, commerce at shopping malls etc. Researchers Mogk, Kwiatkowski, Weindorf (2010) in the United States stress the opportunities for urban agriculture in Detroit, pointing to the need to promote urban agriculture in the era of limited resource - the total population size and overall demand increase result in food deficit due to exploitation of all existing agriculture land outside urban areas. As a result of these processes, it is problematic to determine, which economic activities are solely characteristic of rural territories and which ones - of cities.

3. Social aspects

The traditional distinction between urban and rural areas has been based on the assumption that urban areas provide a different way of life and usually a higher standard of living than are found in rural areas. In the 1960s, scientists had an opinion that rural territories featured greater social stability and safety, whereas urban life was much more unpredictable. Many of the rural community members are acquainted with one another, they have a higher sense of community, and rural residents often identify themselves with the territory in which they live (Cloke, 1994). The rural idyll "presents happy, healthy, and problem-free images of rural life safely nestling with both a close social community and a contiguous natural environment" (Cloke, Milbourne, 1992). The urban-led rural idyll emerged from the idea of the countryside as a place to escape from the realities of urban life and has been most evident in the desire for public access. This has latterly developed to encompass residential choice, employment and quality of life issues. Here, too, the idea of a landscape untouched by urbanism has strong resonance (Scott et al., 2007).

The education level of the population in the area is one of the measurements to identify the human resources and skills. In rural areas, they are expected to be low so that mainly manual activities are developed. Indicators refer to the spatial dimension of social life, highlighting that in rural areas, distances are higher, and opportunities are lower with respect to urban areas. In this case, it is not always easy to find out a suitable and available variable, which is why several alternative solutions are applied by the authors suggesting this approach. Distances from some key services, services available per square kilometre or per capita, and the length of roads for square kilometres are some of the proxy variables. Some studies suggest the use of socioeconomic structural characteristics such as infrastructures or human capital (Pizzoli, Xianoning, 2000). Although, the differences between urban and rural ways of life and standards of living remain significant in developing countries, in many industrialised countries this distinction has become blurred (Population Density and Urbanisation, 2011).

In Latvia, there is a strong tradition to describe and identify people by their place of residence (urban, rural population etc.) and assume that people living in the same area have similar traditions, values, and even similar characteristics. Often the rural inhabitants and the farmers are used as synonyms, despite the fact that less and less people are engaged in the agricultural industry (Latvija. Parskats par..., 2005).

4. Rural areas and small towns

Controversial is the question about small-town identification as rural or urban area. In some developed countries rural areas and towns are separate, determining the rural as territorial residual category - outside of urban areas. However, differences between the rural areas and small towns are not clearly defined in other cases. Rural areas often include small towns, villages, and other populated places with fewer than 1,000, 2,000 or 10,000 people based on principle that the small rural towns provide supply of services for surrounding rural areas. Even more - research results in Finland show that small towns are dependent on the surrounding rural area development (Hinderlink, Titus, 2002). Labour market

Table 2

Socio-economic indicators in urban and rural areas in Latvia on average, 2004 - 2010

Indicator	Area	2004	2006	2008	2010
Change in the number of population over the previous 5-year period (%)	Urban	-4.7	-2.8	-2.5	-2.6
	Rural	-1.8	-3.0	-2.9	0.0
Demographic burden	Urban	570.5	550.9	518.0	517.2
	Rural	641.5	588.6	538.7	506.4
Individual income tax revenues in municipal budgets per capita (EUR)	Urban	133.7	163.9	353.0	332.9
	Rural	67,5	100,2	202,4	325.8
Unemployment rate	Urban	5,5	5,6	3,2	13
	Rural	8,0	7,0	4,4	12.4

Source: authors' construction based on Development of Regions..., 2004, 2006, 2008, 2010

researcher Rasnaca with colleagues (2008) indicates similar trends in Latvia and concludes that there is no evidence that small towns in Latvia are more successful than in Finland. This approach emphasises that small cities are integrated rather than "closed" system. City functional sizes generally do not overlap with its administrative borders. Urban functions are influenced by the demographic (age, profession) structure, seasonal population (number of inhabitants), and while the functions make it possible to change the structure of the population (Kruzmetra, Rasnaca, 2007). Thus, it would be necessary include small towns defining the rural areas.

The State Regional Development Agency through survey "Development of Regions in Latvia, 2010" (2011) uses two types of municipalities - urban municipalities and rural municipalities. Rural municipalities (50 municipalities) are those the territory of which is not approved a city by the Cabinet of Ministers, while urban municipality (60 municipalities) has one or more towns or cities. Rural municipalities occupy 35% of the total territory and 15% of the population. However, this distinction is incomplete, since municipalities in Riga suburban area are called the rural because of lack of town or city in its territory.

When analysing the overall trends (Table 2), it can be concluded that all indicators have improved, yet, there are still significant differences between urban and rural areas. Several conclusions can be made based on this approach. Population change on average does not show significant difference in the time dimension, except the year 2004. In 2010, the population in rural areas did not change showing that the attractiveness of rural areas has been increased, and people are not longer attached to live in cities with growing pollution and crime. From 2004 to 2008, the highest indicators of demographic burden were observed in rural areas. The year 2010 is a year of change - demographic burden is higher in urban than in rural areas comparing with previous years. The level of welfare increased in Latvian rural areas in slower rates than in urban areas on average, based on the individual income tax revenues in municipal budgets per capita. In 2004, individual tax revenue volume in urban and rural areas differs by more than 90%, over time these differences are reduced, for instance, in 2010, the difference is only 2%. The values of indicators that characterise, to some extent, the attractiveness of life environment in 2010 are better in rural municipalities,

yet, better values of economic and demographic indicators are observed for the urban municipalities, indicating the impact of the large urban areas.

There are countries, which use the complex method, including a number of indicators. For instance, Spain includes the population age structure, economic dependency, the farm's main occupation as well as density of population and building in its rurality index calculations.

However, there are also opposite views, which state that it is not possible to make any division between rural and urban areas. The main argument for this view is the belief that urban and rural areas may not be separated or isolated - no matter how successfully the classification would be created, it represent only one part of an overall multi-faceted picture.

Conclusions, recommendations

1. One of most common principles in spatial division of urban and rural areas is the use of demographic indicators - in Europe the majority of countries characterise urban and rural areas according to the number of population starting from 200 to 10 000 inhabitants (in Latvia - 2000); meanwhile the OECD and Eurostat consider population density as the main criteria for statistical purposes.
2. The traditional approach is based on belief that rural and urban areas can be classified in terms of most common economic activities, land use, availability of services, and education; meanwhile, other studies argue that old assumptions have to be reviewed taking into consideration globalisation effect, networking, communication and impact of electronic trade, and service availability.
3. The spatial development studies argue that the small towns are part of surrounding rural areas and cannot be separated as individual unit, these areas are strongly connected and interdependent.
4. There are several approaches used in Latvia for definition of urban and rural areas - based on the status of settlements, population density, and administrative division. Every approach is used by different institution and for different purpose - as a result, there is no unified understanding and it can becomes a problem when implementing national and international development programmes.

5. In Latvia, according to the Central Statistical Bureau provided statistical reports, rural areas are territories that are located outside the town borders set by the Cabinet of Ministers – in 2010, 32% of total population lived in rural areas. Based on the OECD approach, 39.3% of population lived in predominantly rural areas, 13.5% - in intermediate and 47.2% of total population lived in predominantly urban areas in 2010. The State Regional Development Agency divides all administrative units into two groups – urban municipalities (one or more towns are located in its territory) and rural municipalities where 35.4% of total population lives.
6. It is essentially to elaborate a unified definition and classification indicators for urban and rural areas in order to implement the EU and national policies regarding spatial development and territorial cohesion, taking into consideration today's situation in spatial development and population tendencies, international experience, and practice.

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Milk Market in Poland - Selected Aspects of Functioning

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Abstract. The paper discusses key elements of functioning of the milk market in Poland after the accession to the European Union. In Poland, it was stated that there was the surplus of supply over the demand in the analysed period in the milk market. It was affected by the fact that Poland had been a net milk and dairy products exporter. In foreign trade, there was a trend towards eliminating the differences between export and import milk and dairy products. Poland's milk market, the same as in the European Union, is regulated by milk quota system. This system had a favourable impact on the intensification of processes of the specialisation of both the concentration of the production and milk processing, and at the same time reduced production and food - processing potential options. In the analysed period, there was an advantageous milk balance – this is proved by the indicator of the self – sufficiency, which is on the level of 110%. Dynamics of prices changes in the milk market in Poland were on the similar level as the level of total food.

Key words: milk market, dairy sector, milk production, milk processing.

JEL code: D40

Introduction

Poland is regarded as one of the major milk producers in the European Union and the milk processing industry is one of the key sectors of Polish agriculture. The value of milk produced in Poland is estimated at ca. PLN 3.5 billion annually (Information Bulletin of the Ministry of Agriculture and Rural Development No. 1-2/2010). In connection with the situation which may occur after the expiry of the milk quota system in 2015, it seems necessary to commence activities aimed to support the entities operating in the dairy sector. This sector encompasses both milk producers and processing plants. The supply of raw material for dairy industry in Poland is based on individual suppliers producing over 12 million tons of milk annually (Jablonska – Urbaniak T., 2010). The structure of milk production is significantly dispersed. This has an impact on the increase of the expenditure for improvement of milk quality. Since the introduction of the milk quota system in Poland, the number of suppliers has been decreasing, thus, proving concentration and specialisation of milk production. The dairy sector structure is based primarily on dairy cooperatives. Dairy plants focus their activity on the domestic market (nearly 90% of sales volume). In 2010, milk was purchased by 288 entities of which 200 processed the purchased raw material. Reduction of the number of milk collection points is also visible (Jablonska – Urbaniak T., 2010).

The main aim of the paper was presentation of the selected aspects of functioning of dairy sector in Poland after the accession to the European Union. The specific tasks are:

- 1) presentation of the general situation on the Polish milk market;
- 2) characteristics of milk processing;
- 3) presentation of the milk balance and the changes in prices in the milk market;
- 4) analysis of the foreign trade of Poland with the dairy products and tendency on the global milk market.

The paper attempts to determine the selected aspects of functioning of the dairy sector in Poland on the basis of materials and source data of Central Statistical Office - Główny Urząd Statystyczny (GUS), Agricultural Market Agency - Agencja Rynku Rolnego (ARR), Ministry of Agriculture and Rural Development - Ministerstwo Rolnictwa i Rozwoju Wsi (MRiRW), Institute of Agricultural and Food Economics - National Research Institute - Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej – Państwowy Instytut Badawczy (IERiGZ – PIB), Polish Chamber of Milk - Polska Izba Mleka (PIM), Analytical Centre of the Customs Administration - Centrum Analityczne Administracji Celnej (CAAC), Food and Agriculture Organisation, and available secondary sources. The research tools included a critical analysis of the status of research with respect to a particular topic and descriptive analysis. An inductive method was adopted for the inference. The paper provides a theoretical, empirical, and general overview.

Domestic milk market

The Polish milk market as in the entire European Union (EU) is characterised with the surplus of supply over demand. In the period of 2006 – 2010, milk production exceeded domestic consumption by 15% (27 EU Member States – 10%) (Szajner P., 2010). The dairy industry in Poland is characterised with a low production marketability measured as a relation between the sale and production (80%). Taking into account the share of the purchased milk in the total milk produced, it is ca. 65% (in the EU Member States 90 – 95%). This results in a situation where Polish dairy industry does not fully utilise its processing capacities. According to the estimates, their use in the dairy industry is 75 – 80% (Szajner P., 2010). An additional element regulating the milk market in Poland after the accession to the EU is the milk quota system. This system is intended to contribute to the stabilisation and development of the milk sector by

Table 1

Characteristics of milk production in Poland in selected years in the period of 2004 - 2010

No.	Items	2004	2005	2008	2009	2010
1.	Milk cow headage (in thousand)	2770	2769	2702	2629	2551
2.	Index (2004 = 100%)	100	99.96	97.55	94.91	92.09
3.	Milk production (in million kg)	11824	11913	12426	12447	12430
4.	Index (2004 = 100%)	100	100.75	105.09	105.27	105.13
5.	Cow productivity (in kg per cow annually)	4262	4302	4595	4731	4870
6.	Index (2004 = 100%)	100	100.94	107.81	111.00	114.27
7.	Milk cow farms with cows (in thousand)	736	712	551	495	465
8.	Index (2004 = 100%)	100	96.74	74.86	67.26	63.18
9.	Number of milk suppliers (in thousand)	389	294	222	200	186
10.	Index (2004 = 100%)	100	75.58	57.07	51.41	47.81
11.	Milk supplies to dairy plants (in thousand kg)	7997	8831	8941	9138	9014
12.	Index (2004 = 100%)	100	110.43	111.80	114.27	112.72

Source: author's calculations based on Milk market – Condition and Prospects (various years, IERIGZ - PIB; Central Statistical Office Yearbooks (various years), Agricultural Development Agency data, Polish Chamber of Milk

keeping the balance on the EU milk and dairy products market and ensure the sales of the raw material at the prices advantageous for the suppliers. It is also an element of intervention into the market, which the EU attempts to depart from. This system is to function until 2015. As a result of the pre-accession negotiations, Poland obtained the production quotas of 9380 thousand tons including 8500 thousand tons of supplies for the dairy industry, 464 thousand tons of direct sales, and 416 thousand tons of restructuring reserve – to be used in the economic year 2006/2007 (Szajner P., 2010).

The reform of the Common Agricultural Policy (CAP) envisages a gradual increase of the milk quotas on the milk market and their abolition from 1 April 2015. According to the decisions of the European Commission (EC), the national milk quotas have increased since 2009/2010 and will continue to increase until 2014/2015 at the annual rate of 1%. In the economic year 2014/2015, the Polish milk quotas are to be at the level of 10056 thousand tons (Szajner P., 2010), which would not materially improve the efficiency of production. Such a slow increase of production limits will contribute to the slowdown of the dairy sector restructuring process at the raw material base and industry level. The raw material producers are limited by the quotas, which, if exceeded, are subjected to penalty charges. It also limits the production potential. The dairy sector may not take full advantage of them.

Raw material base

The changes across the milk sector have different scale intensity in both time and structure and they are as follows.

Taking into account the aspects related to raw material, one has to do with the concentration and productivity growth processes. Since Poland's accession to the EU structures until 2010, the milk cow headage has decreased by nearly 8% in parallel with over 14% productivity improvement. This may be a consequence

of the increased specialisation in the milk cow breeding fostered by the functioning of the milk quotas system, which, due to its restrictive nature, results in the reduced profitability of small farms. The decrease of the cow population accompanied by their increased productivity occurred in parallel with nearly 40% drop in the number of milk producing farms and over 52% reduction of milk suppliers. Taking into account the size of the farms, small farms (up to 9 cows) withdraw from the business, the number of farms keeping from 100 to 199 milk cows grows with the largest farms keeping over 200 cows also in retreat (Olkowska O., 2010, 2011). These data show the growing specialisation and concentration of milk production. A faster growth of productivity in comparison with the reduced headage translated into 5% increase in milk production between 2004 and 2010. Increased milk supply to dairy plants by almost 13% and reduction of the number of milk suppliers by over 52% can be also observed. This proves the concentration of the raw material production and relative decrease of milk use in feeds and for consumption purposes.

Milk processing

Dairy sector in Poland was restructured with respect to ownership, technology, and concentration of the scale of milk production and processing.

With respect to milk processing, the ownership restructuring led to a separation of a group of strong private companies. Because of capital and entity consolidation in the cooperative sector, there are several economically viable dairy cooperatives operating on the domestic milk market. The structural transformations have led to the reduction of number of cooperatives and growth of the scale of the processing business. The average level of raw milk processing per company increased from 25.5 thousand tons up to 43 thousand tons in the period of 2003 – 2009. An increasing consolidation of the entities producing, buying, and processing the raw milk is observed (Szajner P., 2010).

Table 2

Characteristics of the milk sector processing branch in selected years in the period of 2004 – 2010

No.	Items	2004	2008	2009	2010
1.	Number of dairy plants	265	224	214	214
2.	Index (2004 = 100)	100	84.53	80.75	80.75
3.	Employment (in thousand)	41.4	35.8	35.6	35.6
4.	Index (2004 = 100)	100	86.47	85.99	85.99
5.	Average employment per dairy plant (employees)	156	160	166	166
6.	Index (2004 = 100)	100	102.56	106.41	106.41
7.	Sales volume (in million PLN)	17191	20894	20888	23987
8.	Index (2004 = 100)	100	121.54	121.51	139.53
9.	Milk processed per dairy plant (in million kg)	30.2	39.9	42.7	42.1
10.	Index (2004 = 100)	100	132.12	141.39	139.40
11.	Sales value per dairy plant (in million PLN)	64.9	93.3	97.6	112.1
12.	Index (2004 = 100)	100	143.76	150.39	172.73
13.	Sales value per employee (in thousand PLN)	415	584	587	671
14.	Index (2004 = 100)	100	140.72	141.45	161.69
15.	Processed milk value per employee (in thousand kg)	195	250	257	253
16.	Index (2004 = 100)	100	128.21	131.79	129.74

Source: author's calculations based on: Milk Market – Situation and Prospects (various years, IERIGZ - PIB; Central Statistical Office Yearbooks (various years), unpublished statistical data of the Central Statistical Office

Table 3

Balance of milk in Poland in selected years in the period of 2004 – 2010, in million kg

No.	Items	2004	2005	2008	2009	2010
1.	Production	11824	11913	12426	12447	12430
2.	Import	350	518	647	764	828
3.	Total milk available	12174	12431	13073	13211	13258
4.	Export	1652	2168	2321	2102	2124
5.	Use for feeds	589	567	573	515	515
6.	Human consumption	9933	9696	10179	10594	10619
	Self-supply included:	2215	2060	2111	2009	1957
	Marketable milk	7718	7636	8068	8585	8662
8.	Total expenditure	12174	12431	13073	13211	13258
9.	Self-sufficiency ratio (%)	112.4	116.1	115.6	112.0	111.6

Source: author's calculations based on: Milk Market – Situation and Prospects (Various Years, IERIGZ - PIB; Central Statistical Office Yearbooks (various years), unpublished statistical data of the Central Statistical Office

A modernisation of the operation of milk suppliers, buyers, and processing plants has occurred in parallel with the abovementioned processes. The main reason of this situation was the necessity to adapt to the requirements with respect to health safety.

In the analysed period, nearly 20% decrease in the number of dairy plants occurred accompanied by nearly 40% growth of the raw material processing volume per plant. An increase in average employment in the dairy cooperative combined with drop in the total employment proves liquidation of small dairy plants. The average employment shows that medium - sized companies are dominant. In the analysed period, the productivity per employee has increased by nearly 30%. In 2010,

the volume of milk processed per individual dairy plant increased by nearly 40% in comparison with 2004. The increase of the value of sales per dairy plant taken at face value was also visible. This indicates the increase of productivity deriving from the concentration and consolidation of the milk-processing branch.

Milk balance and prices on the milk market

While calculating the milk balance in Poland, it becomes evident that the self-sufficiency ratio (relation of production to domestic consumption) throughout the period has exceeded 110%. It was related to surplus

Table 4

Changes of prices of the raw material and dairy products against the background of milk products and consumer goods in Poland in selected years in the period of 2000 – 2010, %

No.	Items	2000 - 2003	2004 - 2006	2007 - 2009	2004 - 2010
1.	Raw milk purchase prices	117.5	129.7	97.5	142.4
2.	Wholesale prices	108.4	109.4	103.4	115.4
3.	Dairy products retail prices	114	107.4	112.1	124.1
4.	Butter milk prices	109.3	118.8	109.3	135.7
5.	Consumer goods and services	119.3	106.8	110.5	121.8
6.	Total food	113.5	109.2	115.8	131.4

Source: author's calculations based on: *Milk Market – Situation and Prospects (Various Years, IERiGZ - PIB; Central Statistical Office Yearbooks (various years), unpublished statistical data of the Central Statistical Office*

Table 5

Volume of import and export of dairy products in Poland in selected years in the period of 2004 – 2010, in thousand tons

No.	Items	2004		2009		2010	
		Import	Export	Import	Export	Import	Export
1.	Milk powder	5.9	129	27	120.7	37.1	103
2.	Liquid milk and cream	5.9	52.9	49.8	281.8	57.8	239.6
3.	Butter and milk fat	4.1	27.6	9.3	18.3	12.8	25.5
4.	Cheese and quark cheese	8.7	81.3	38	142.9	39.8	140
5.	Yogurts and dairy drinks	1.9	43.7	21.3	107.5	27.7	123.3
6.	Ice cream	2	8.2	8.6	25.3	8.4	27.6
7.	Casein	11.5	6.2	11	3.9	7.4	4
8.	Whey	8.3	47.8	24.9	130.7	27.3	135.4

Source: author's calculations based on: *Milk Market – Situation and Prospects (Various Years, IERiGZ - PIB; Central Statistical Office Yearbooks (various years), unpublished statistical data of the Central Statistical Office*

of supply over the demand occurring on the Polish market. The value of the index has been decreasing each year since 2008. It was linked with the narrowing difference between export and import in terms of quantity. In addition, the volume of milk used in feed production and self-supplies has slightly decreased and was accompanied with the simultaneous growth of the milk production. It can be said that the balance on the Polish milk market was positive in the analysed period.

The growing trend in per capita milk consumption is evident in Poland. In 2005, it was 259 kg and in 2010, it reached 276 kg. However, it is still lower in comparison with other European countries, especially in comparison with the Northern parts of the continent (Germany, Denmark, Ireland, and Scandinavian countries, where it ranges from 300 to 470 kg per capita).

The growth of milk prices on the milk market can be observed in the analysed period. An advantageous factor for milk producers was the fact that purchase prices showed the highest dynamics (42.4%) among all milk market levels despite the slope in the period of 2007-2009. Price fluctuations of raw milk purchase were much deeper in comparison with the wholesale and retail prices. It has to do with a long milk cattle production period, which delays in time the consequences of producers' decisions.

Changes in the retail prices of butter and dairy products in the years 2004-2010 reflected the food and consumer goods and services price fluctuations in general. Only wholesale prices proved considerable deviations. Prices of butter and dairy products grew faster than inflation. This may have contributed to high food price growth dynamics in general and relatively low milk consumption in Poland.

The advantage of the Polish dairy producers over their competitors from the EU countries is evident - on 15 international markets. It manifests in the raw milk prices, which in Poland are ca. 15% lower in comparison with the EU average.

World's milk market and foreign trade in dairy products

The situation on the domestic milk market is to a large extent moulded by the results of foreign trade. In view of surplus of supply on the domestic market, Poland is a net exporter of milk and dairy products. In the analysed period, export dominated over the import in terms of both the quantity and value. The reduction of these differences can now be observed. In 2004, the volume of export exceeded import over 8 times (in terms of value nearly 5.5) but already in 2010, the volume of export was much bigger than import exceeding it

Table 6

**Value of import and export of dairy products in Poland in selected years of the period of 2004 – 2010,
in EUR million**

No.	Items	2004		2009		2010	
		Import	Export	Import	Export	Import	Export
1.	Milk powder	10	207.1	46.6	173.3	68.3	211.6
2.	Liquid milk and cream	5.3	28.9	28	123	36.5	147.9
3.	Butter and milk fat	9.1	66.2	25.6	43.3	44.6	81.1
4.	Cheese and quark cheese	27.7	191.1	106.6	368.5	123.1	400.5
5.	Yogurts and dairy drinks	1.5	35.9	24.1	103.3	29.1	121.8
6.	Ice cream	2.8	10.7	14	43.4	14.1	49.3
7.	Casein	45.6	28.5	36.8	16.1	44.6	22.7
8.	Whey	5.7	21	16.5	61.5	19.5	95.3

Source: author's calculations based on: Milk Market – Situation and Prospects (Various Years, IERIGZ - PIB; Central Statistical Office Yearbooks (various years), unpublished statistical data of the Central Statistical Office

3.5 times (in terms of value nearly 3). Differences in F/X rates, which have influence and manifest in the export and import of dairy products are of great importance in foreign trade.

In 2009, the results of foreign trade in dairy products worsened; it was a consequence of the crisis, which started in 2008. In the consecutive year, an improvement was observed, which manifested in the growth of trade with foreign partners. The value of import in 2010, in comparison with the preceding year, increased by EUR 81.6 million (27%), while the value of export by EUR 197.8 million (21%).

The balance of foreign trade in 2010 was EUR 750.4 million *vis a vis* EUR 634.2 million in 2009 (over 18% and more). Taking into account the trading volume, in 2010 there was surplus of export over import (2009 - 641.2 thousand tons, 2010 - 580.1 thousand tons) in comparison with the preceding year. In 2010, it contributed to the increase of import by 28.4 thousand tons in comparison with 2009, and it was accompanied by the decrease of export by 32.7 thousand tons. In general, the volume of export was ca. 4% lower in comparison with 2009. Poland exported mainly to the EU Member States - over 80%. In contrast, the volume of import in 2010 increased by nearly 15% in comparison with the preceding year. In 2010, there was a considerable increase of both export and import of butter, milk fats, yogurts, and dairy drinks. These changes were multidirectional in other product groups.

In the period of 2007-2009, some turbulence was observed on the milk market, which ended in 2010. With the high price level, the world's global market reached certain balance. Since the mid-2009, a faster growth of demand and dairy products trade turnover was observed in comparison with the milk supply. According to the data of the Food and Agriculture Organisation (FAO), the following growth was observed: global milk production up to 712 million tons (by 1.8%), global turnover up to 42.7 million tons of the raw milk equivalent (by 2.0%), and milk consumption in developing countries up to 67.6 kg per capita (by 2.1%) (Seremak – Bulge J., 2011). High prices of majority of dairy products were also observed on the world's markets. The vital

correlation between milk prices and dairy products in Poland and the EU, and the world prices has to be emphasised.

Conclusions

The aim of the paper was to present the selected conditions of the milk market in Poland after the accession to the European Union.

1. In the analysed period, there was surplus of milk over the demand in Poland. A slight increase in the milk and dairy products per capita consumption was observed in Poland. However, the activities aimed to increase dairy consumption should be intensified.
2. As the entire EU market, the domestic milk market in Poland is regulated with the milk quotas, which constitute a peculiar market stabiliser and limiting factor. By stabilising the prices and keeping the balance, they foster market development. They also enforce specialisation and concentration of milk production and processing. Yet, they limit the potential production and processing capacities.
3. The progress in the specialisation and concentration processes at the milk production and processing level can be observed taking into account the raw material base.
4. In the analysed period, there was an advantageous milk balance on the Polish market - the self-sufficiency ratio exceeded 110%.
5. A general growth of prices on the milk market is observed. The year 2009 is an exception as it brought reduction in the milk purchase prices. The milk prices variations dynamics was at the level similar to food in general.
6. The surplus of supply over demand on the Polish milk market results in a situation where Poland becomes a net milk and dairy products exporter. A trend towards eliminating the differences between export and import also becomes evident. A favourable factor is the price advantage of the Polish milk producers over their EU competitors on the internal markets.
7. A challenge for the dairy sector will be the abolition of the milk quota system from 1 April 2015. It will have to do with the commencement

of activities aimed at harmonisation of market functioning under modified conditions. It is necessary for milk and dairy products producers to undertake them.

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Role of Place Attractiveness for Local Economic Development

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Abstract. This article discusses the importance of place attractiveness for local economic development in the context of international competition of territories. Discussion is based on the review of international academic literature, paying major attention to the public management perspective. The authors draw attention to the concept and process of local economic development, which integrates a number of other important place development methods, facilitating retention of exiting and attraction of new important resources for a sustainable development of a place (region, city, town, other). The main aim of the article is to discuss the inter-relations between the place attractiveness and its LED through the analysis of concepts, content, and processes of local economic development and place attractiveness.

Key words: place development, place attractiveness, local economic development.

JEL code: R

Introduction

The power to attract activity and people is one of the most important pre-conditions for a place success. Therefore, the enhancement of place attractiveness is a continuous public policy effort and object of research. As literature analysis showed, the fields of local economic development (LED) and place attractiveness are sufficiently discussed as separate topics, yet, there is a lack of scientific and empirical analysis on their interdependency.

In the era of global competition, large and small communities (cities, towns, villages) are facing new challenges to maintain and strengthen their competitiveness in order to create a flexible, adaptable, and diverse local economic structure, which would allow the community to be in a better competitive position, and thus, to create a higher quality of life for its members. To achieve this aim, places are constantly competing for many different factors (skilled, creative entrepreneurs and workers, businesses, events, public funding etc.), which stimulate their economies. Therefore, one of the most important conditions, which determines inter-community competition outcome, is the ability of the community to compete for these factors. In this context, the attractiveness of a place is regarded as one of the most important pre-conditions for its community's future economic success.

The main aim of the article is to discuss the inter-relations between place attractiveness and its LED through the analysis of concepts, content, and processes of local economic development and place attractiveness. The tasks of the research are: 1) to disclose the essence of the concepts of local economic development and place attractiveness; 2) to present the process of LED emphasising its strategic nature; and 3) to explain the main factors that influence attractiveness of a place to specific target groups. The authors of the article state that improvement of its attractiveness helps promote and support the image of a place so that it can become competitive and attractive for potential

resource generating elements (investment capital, skilled people etc.), which are crucial for the local economic development.

Research results and discussion

Decentralisation of government competencies, responsibilities and resources, and transfer of decision-making powers from national level to lower government levels give local communities more decision making powers as well as responsibility for the quality of life of community members. Different researchers (Dunning, 1998; Brenner, 2004; Savitch and Kantor, 2002) denote that nation-states transfer increasingly more powers and responsibilities to local level authorities in order to take advantages of globalisation on the level, where their expression is most intense.

Free movement of people, capital and goods strengthened international competition among products, services, persons, and even territories - states, regions, cities, villages, communities. If some decades ago, the main competitors-territories were nation-states, nowadays, even a small and remote community has a number of competitors. They compete to retain existing or attract new economic (financial), social and/or technological resources; they strive to enhance their attractiveness to society groups, which can guarantee its stability or long-term growth. As nowadays skilled people relate the attractive place with the "quality of place" (more prosperous, healthier, safer, open, cleaner, fun, sustainable, ...), the communities should seek to offer conditions, which are important for successful businesses and smart people. This encourages development of a new local policy and implementation of complex measures to attain a clear objective - to increase the attractiveness of the place.

In this context, communities face new challenges, which require application of more effective or new methods of socio-economic development of their territories. Different experts suggest different solutions

to this issue: strategic management, local economic development, place marketing, strategic networking, creative financing - to name just a few. The authors of the article will pay major attention to the local economic development (further - LED) as a tool to generate community's internal and external resources.

The relationship between place attractiveness and LED is coming forward as a very important scientific area, concerning the place's (regional and local) development. Most of the theoretical and empirical approaches tend to analyse each of the terms separately, without deeper academic or empirical investigation of the impact of place attractiveness on development taking in a place (city, town, village, other).

Essence of local economic development

The growing attention to locality and community decision-making in democratic states facilitates LED. Local governments are committed to create sustainable human settlements that provide decent quality of life and meet the social, economic, and material needs of communities in a holistic way. LED should be seen as a tool for development of place economies when exploited local opportunities address local needs and contribute to the national development goals of economic growth and poverty alleviation. LED leads to increase of the local economy's capacity to create wealth for local residents in two ways: either in the growth of local jobs, when unemployed labour and land is used, or when the local resources (labour and land) are used more productively.

LED is a process when local government and/or community-based groups manage their existing resources and enter into new partnership arrangements with the private sector, or with each other, to create new jobs and stimulate economic activity in a defined economic zone (Blakely, 1994). White and Gasser (2001) determined four LED features as it: (a) requires participation and social dialogue; (b) is based on territory; (c) entails the mobilisation of local resources and competitive advantages; and (d) is locally owned and managed. LED is an outcome of co-operation between public organisations, communities and private enterprises in a total production, distribution, and consumption processes.

Promoting robust and inclusive local economies requires concerted, coordinated action in all fields of governance. Local governments choose different strategies to affect local economy as well as to develop different policy-making and administrative processes using diverse instruments. Eisinger (1988) has distinguished supply-side and demand-side policies of LED. Supply-side policies refer to incentives to attract economic activity into the area, e.g. tax incentives, debt financing schemes, infrastructure investment, regulatory policy, tax increments, land and site development, and financing arrangements. Demand-side policies are strategies to promote new enterprises creation and small-business expansion, government assistance to local businesses in new product development and market expansion, supporting research and development, strategic investment (e.g., business incubators, venture capital financing, and job training programmes). Public sector agencies spend money purchasing goods and services from local businesses; seeking to encourage

participation of local business enterprises in its local procurement activities.

In the times of unstable economy, places orient themselves to attraction of external resources, as the groups, which call for assistance, remain more constant in communities (i.e. local problems), while the capital and economically active residents are more mobile (i.e. problems solving). LED concerns actions that take place in place internal environment, through the motivation of the existing local enterprises, in order to contribute to local development, to become more competitive and to expand their financial and production activities, and external environment through the attraction of new investments and residents, while there are quite close interdependency of these two.

Local economic development process

LED is a process that brings together resources from within and outside the community to promote economic growth in a systematic and organised manner on the local level. LED is connected to, and thus, dependent on, other processes such as effective planning, communication, actions coordination, controlling and evaluation, and the authorities' motivation to perform development activities. LED process is based on careful and detailed planning and, primarily, on good practice in urban planning and development (Cunningham and Meyer-Stamer, 2005). LED process is an integral part of the extensive process of strategic management. Effective strategic management ensures that priority issues are addressed and limited resources are well targeted. Five main stages in LED process may be identified:

- the local economic development process begins by *place diagnosis and institutional mapping*, i.e. identifying the stakeholders (individuals, public institutions, enterprises, community organisations, and other groups) interested in the local economy. The knowledge, skills, and resources that each of these stakeholders bring to the LED process provide a critical foundation for success;
- LED initiative needs to be based on a profound *investigation of the local economy*. Local conditions analysis and assessment helps acquire knowledge on the local economy and its resources. Each place and community has a unique set of local attributes that can advance or hinder LED. The aim of the local economy assessment is to identify the strengths and weaknesses of place socio-economic and political environment including its human resource capacity, and local government's 'friendliness' to all types of business activities;
- by *designing economic development strategy*, a shared economic vision and goals, objectives, programmes, projects, and action plans are set. It is very important to determine the role and the contribution of the existing enterprises as well as the establishment of new ones in a place (city or region). LED implementation needs good coordination, thus, LED institutionalisation embodies establishment of the local economic development unit in municipality and/or committee in a council of local government or a local economic development agency, a business association, and a stakeholder forum. This process

ensures that all major stakeholder groups are given the opportunity to define the goals to be achieved, and the means of achievement, they will be bounded and timeframed for participation in the implementation of the strategy;

- local economic development *strategy implementation* is driven by the action plans. The local stakeholders, according to their competence, resources, and capacities, implement the bottom-up development strategy following the action plans;
- good *monitoring and evaluation* techniques help quantify outcomes, justify expenditures, determine enhancements and adjustments, and develop good practices. Permanent monitoring is accomplished through the formal institutions set in step one. The evaluation of programmes and projects outcomes ensures that the strategy continues to lead to the achievement of the LED vision, goals, and objectives. This information is also used in the review of the complete local economic development strategy.

The five-step LED process should be tailored to complement and correspond with other integrated local development processes. The process of designing and implementing LED policy may vary according to the types of policies adopted and institutions established in the municipality.

Concept of place attractiveness

Criteria characterising the location decisions of business and people in the 20th and the 21st centuries illustrate the change of interests for the qualities of a location (place). In the past century, the location was chosen based primarily on the needs of businesses ("traditional" approach). In the 21st century, in the knowledge-based economy, where the relative advantages on the market depend largely on the creative, complex skills, the needs of creative and competent workforce play a crucial role.

Although, the need to be attractive is regarded by most entities as a "self-evident fact", there are other perspectives as well. Some researchers say that places do not strive to increase their attractiveness; on the opposite – they seek to restrict their attractiveness, especially if it is very distinct comparing with other places of similar size and functions. For example, "the principle of attraction" proposed by Forrester (1969) states that every class of society, all geographic locations strive to be equally attractive.

Specifically to say, all locations strive to be equally unattractive. Why all areas want to be attractive - because people move from unattractive areas to more attractive ones. Movement of people is like a levelling process. When people move to attractive places, prices there rise, vacancy rates fall, supply of workplaces decrease, the natural environment is loaded, availability of high-quality housing, and public services is reducing. In other words, the growing location's population facilitates the decline of all qualities of the location, which previously made it an attractive one.

However, most of us will agree that the improvement of attractiveness, not the opposite, is on the agendas of most public authorities. Perhaps the strength of the

need (motivation) to increase particular community's attractiveness can change with time, but it will always remain an important task for its leadership.

Factors of attraction

The authors propose to search for an answer to the question "to whom a community should direct its efforts to be attractive?" A general answer, referring to Braun (2008), can be "to all people and organisations that are important for the functioning of the community". Of course, community uniqueness and attractiveness from the point of view of different economic subjects is different, depending on their specific needs and activity characteristics. It is obvious that a certain community cannot be "perfect" - equally appealing to all groups in the society: local or external business, residents, visitors, young, elderly etc. Consequently, for communities, seeking to manage their attractiveness, primarily, all it is necessary to understand and decide which group of society (target group of the community) is most relevant in order to ensure its socio-economic growth and competitiveness.

To choose the target group of a city, a town, or a village is a particularly important challenge, since this choice would affect the community's development activities (choice and communication of attractive location characteristics) in the coming few years. Strengthening the community's attractiveness is a continuous and long-term process, the cornerstone of policy and efforts, not a one-time action.

Before development of programmes, to enhance the attractiveness of a place, it is very important to understand that place attractiveness for different society groups (target groups) is not the same; the attractiveness of a community consists of many different characteristics. Kotler et al. (1993) identify the following major target groups of a community: visitors, residents/employees, business/industry, and export markets.

Berg et al. (1990), Ashworth and Voogd (1990) distinguish residents, businesses, and visitors.

Jensen (2005) suggests five main objects, which every community should consider in its efforts to achieve higher competitive position: mobile investors, mega internal products, citizens creating value added, public funds, exceptional events, and important infrastructure spheres.

If preparing the community attractiveness plan for the first time, it is suggested to focus on three general target groups: residents, business, and visitors - as their activities, objectives and interests have the most prominent differences. Below is a more detailed explanation of factors, which determine a community's attractiveness for each of these target groups.

– Community's factors important to *business*

As analysis of academic and empirical literature shows, most communities strive to attract business, which could create new employment opportunities for the local population and to generate income of the community's budget.

Kirvaitiene (2007) states that it is very important to understand companies' interests for a place, as their (successful or not) fulfilment are directly reflected in

economic and social indicators of the community, such as impact for a general GNP, investments coming to the place, number and quality of created work places, residents migration etc.

If several decades ago communities put most efforts to draw attention of industries, today they want to attract attention of businesses belonging to "clean industries". According to van den Berg, van der Meer and Otgaar (1999), an attractive place for business community should have good accessibility, acceptable land prices, local taxes and legal requirements, and sufficient quantity and quality of labour force supply. Other factors such as living environment and quality of public services are important as well. Braun (2008) states that entrepreneurs and investors look for the following most important community's characteristics: location, built environment, labour force, existing and new customers, suppliers, finance, and partners.

In his discussion about place's brand, Jensen (2005) emphasises the importance of creation of place's conditions, which are necessary to attract capital. Places, "friendly" to business, i.e. maintaining high level of technological infrastructure, have to maintain other important elements, such as quality of life.

— **City factors important to residents**

In general, the attractiveness of the community to residents means all community characteristics, which meet needs of all their family members. According to Braun (2008), these are jobs, education institutions, leisure facilities, other institutions and services, and family and friends. According to van den Berg, van der Meer and Otgaar (1999), attractive to residents is a place with a good, accessible, clean, safe environment; good access to employment, high quality education and health care services; and high quality city culture, attention to public safety, religion, arts.

Anholt (2007) states that people, thinking about communities, often pay attention to rather practical things, such as climate, pollution, transport and traffic jams, standards of living, leisure and sports facilities, legal environments, and, of course, cultural city's life. Ejigu (2004), speaking about reasons to visit a location, gives the following classification of visiting purposes: business, conference, short-stay, long-term stay (to see its main places of interest), passing through or coming to a place on a daily basis, to visit family and friends.

— **Community factors important to visitors**

An attractive community draws also visitors and tourists. It is important to notice that, in recent decade, the spatial behaviour of visitors has changed: people travel more often but trips are shorter in time. This group of society, contrary to the previously discussed two other community target groups, does not aim to settle in the city for a long time.

According to van den Berg, van der Meer and Otgaar (1999), a community's attractiveness as a visitors' destination relies on the existence of different tourist products, such as attractions, museums, events, the climate, the landscape as well as hotels, restaurants, and shops.

Braun (2009), discussing place marketing issues, emphasises that visitors look for a temporary accommodation (hotel, apartment, camping, family's house etc.) plus the accessibility to relevant attractions

or other facilities or locations. This author also points out to the fact that the visitor considers additional factors like the costs and type of accommodation, architecture and design, comfort, availability of restaurants, the direct neighbourhood, parking facilities, public transportation, and other amenities.

Before starting the development and implementation of community attractiveness improvement strategies, it is important to understand that these efforts shall be based primarily on the existing community's advantages, its values, identity, especially its socio-cultural heritage. This will help create a distinctive local character, which draws attention of visitors, residents, and businesses, distinguishes it from many other locations, and encourages settling in the community. It is also important to achieve that the objectives to enhance the attractiveness of a community would be the result of debates and consensus of leaders of all community interest groups (political and administrative level, private, and NGOs sector). These objectives should be reflected in the wording of vision of the community's local economic development strategy. Community's attractiveness enhancement efforts will be successful only if it is systematic, targeted, whole-community effort to use the existing local qualities and characteristics to create and promote conditions for living, doing business, and visiting, which are required by modern society groups with the highest socio-economic potential.

Conclusions

- Globalisation and the knowledge economy bring complex challenges for local governments seeking to achieve a better competitive position of their community. The most important challenges are to maintain the existing or desired competitive position by creating a flexible, adaptable, and diverse local economic structure, allowing the community to improve its situation in regional and global competition. To achieve this, communities are competing to retain existing (internal) or attract new (external) major development factors, particularly high-skilled, creative workers, successful businesses that are the driving force of the knowledge-based economy, and visitors.
- Improvement of place attractiveness is an important element within the strategies of LED. Place attractiveness plays a key role for the success of places in gaining competitive advantage, optimally allocating economic resources, and designing long-term economic development strategy and policies.
- LED may be defined as a set of special activities, undertaken by local government to promote economic development of the community. LED can be understood as a self-supporting process: it helps retain and use internal community resources more effectively and attract external ones. Therefore, LED strategy is an important tool, which helps manage current and/or potential resources necessary for the development of economic processes. Coordinated attraction of resources should be based on detailed segmentation of resource markets in order to ensure more successful processes of local economic development. Only comprehensive analysis of the

economic environment provides the answer what resources are most relevant for a particular place.

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Support Diversification for Micro, Small and Medium Size Enterprises in Zemgale Region

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Abstract. The paper presents the concept of support diversification for development of micro, small and medium size enterprises (MSMEs) in Zemgale region, Latvia. Financial, advisory, and educational support is crucial for the establishment and development of micro, small and medium size enterprises worldwide. The World Bank, the European Commission, and governments have all showed an increased interest in financing and supporting MSMEs. The research is focused on discussion and classification of support available for the establishment, and growth and development of micro, small and medium size enterprises in Latvia. Cluster analysis groups 22 local municipalities of Zemgale region into 4 clusters, and the authors suggest to diverse support according to specific needs of region and enterprises in each cluster. In the clusters that link territories with low number of micro enterprises per 1000 capita, it is necessary to stimulate the establishment of new micro enterprises through programmes like Promotional Programmes Office ALTUM Start Programme, Micro Lending Programmes as well as education and training. In contrast, in clusters with high number of micro enterprises per 1000 capita but low number of small and medium size enterprises, it is important to stimulate the growth of micro enterprises into small, medium and large enterprises through Competitiveness and SME Growth Loan programmes.

Key words: financial support, support diversification.

JEL code: E02

Introduction

The firm size plays an important role in entrepreneurship. Micro, small and medium size enterprises (MSMEs) face difficulties and problems, when trying to survive and develop. According to Schiffer and Weder, there are 3 main problems that small and medium size enterprises are facing: tax policy, access to finance, and inflation. Large enterprises are more concerned about policy instability, tax policy, and inflation (Schiffer M., Weder B., 2001). Access to finance is one of the problems that the European Commission is concerned about. The European Central Bank conducted survey between 22 August and 7 October 2011, covering a sample of 8316 firms in the euro area. According to the survey results, external financing needs of MSMEs have slightly increased between April and September 2011. The survey results show that access to bank loans has deteriorated at the same time. On balance, firms' opinion about the availability of bank loans has decreased by 5 percentage points reaching 14%. Moreover, the survey results point to slightly lower rates of success when applying for a loan. Meanwhile, the percentage of respondents reporting "access to finance" as their main problem was unchanged and stood at 16% (Report on the Results..., 2011). Because financial support is limited, it is important to diverse it according to the needs of specific region and enterprise. In this paper, the authors take into account not just financial support offered for MSMEs but also consultations, knowledge sharing, and advisory services for MSMEs.

The **aim of the research** is to analyse possibilities of support diversification for micro, small and medium size enterprises in Zemgale region. Three **research tasks** are set up to reach the aim:

- 1) to describe the role of micro, small and medium size enterprises;
- 2) to classify and describe support that is available for the establishment, and growth and development of micro, small and medium size enterprises in Latvia;
- 3) to analyse opportunities of support diversification for micro, small and medium size enterprises through cluster analysis of Zemgale region.

The **research methods** are monographic descriptive, analysis, synthesis, statistical methods, and cluster analysis. The paper presents the classification of support that is available for MSMEs into two main groups: 1) support for the establishment of MSME and 2) support for the growth and development of MSME. Cluster analysis is used to group 22 local municipalities of Zemgale region into four homogeneous groups, so that the authors can suggest different strategy for each group of local municipalities. Cluster analysis is based on 4 socio-economic indicators from the year 2009: number of micro size enterprises per 1000 capita, number of small size enterprises per 1000 capita, number of medium-size enterprises per 1000 capita, and specially supported territory status. If a territory has the status of specially supported territory, it shows that there are long-lasting negative social and economic processes in this territory.

1. Role and importance of micro, small and medium size enterprises

Micro, small and medium size enterprises play an increasing role in economy, but there is not common understanding of the term micro, small and medium size of enterprise. The number of employees and financial data

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Table 1

Share of micro, small and medium size enterprises in the number of enterprises, employment and number of employees per enterprise in the EU countries average, 2008

Enterprises	Micro	Small	Medium	MSME	Large
Number of enterprises					
Number	19 058 000	1 424 000	226 000	20 709 000	43 000
%	91.8	6.9	1.1	99.8	0.2
Number of employees					
Number	39 630 000	27 652 000	22 665 000	89 947 000	43 414 000
%	29.7	20.7	17.0	67.4	32.6
Number of employees per enterprise					
Number	2.1	19.4	100.3	4.3	1006.1

Source: authors' calculations based on the *European SMEs under...*, 2010

Table 2

Number of micro, small and medium size enterprises in Latvia and their growth rates in 2004-2009

Year	Micro enterprises	Growth rate, %	Small enterprises	Growth rate, %	Medium enterprises	Growth rate, %
2004	89230	-	10062	-	2006	-
2005	95879	7.45	10832	7.65	2125	5.93
2006	105603	10.14	11193	3.33	2363	11.20
2007	113288	7.28	12745	13.87	2546	7.74
2008	113008	-0.25	12482	-2.06	2546	0.00
2009	115654	2.34	10122	-18.91	2037	-19.99

Source: authors' calculations based on *Mikro, mazo un videjo uzņemumu...*, 2011

(turnover, assets, investment, or capital) are the most common way to define size groups of micro, small and medium size enterprises. According to the Commission Recommendation of 6 May 2003, the common definition used by 27 Member States define, that:

- micro enterprise is an enterprise, which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million;
- small enterprise is an enterprise, which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million;
- medium enterprise is an enterprise, which employs fewer than 250 persons and which has an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million (MSME definition, 2003).

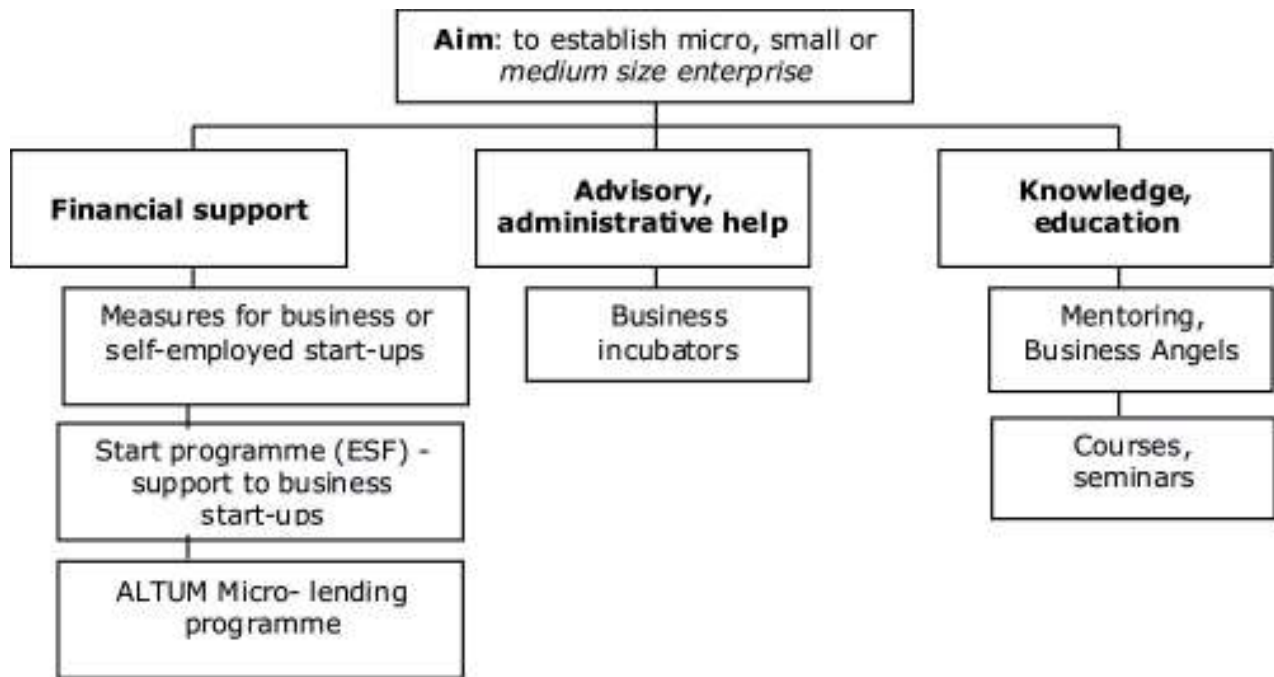
According to this definition, around 99.8% of enterprises in the European Union countries are micro, small or medium (Table 1).

Around 92% of all enterprises in the EU are micro (up to 9 employees), and in total these enterprises employ over 39 million people, with the average of 2 employees per enterprise. Over 1.4 million or 7% of all enterprises can be classified as small. Yet, they employ 21% of all employees in the EU, with the average of 19 employees per enterprise. Medium enterprises

comprise only 1% of all enterprises, but they employ 17% of all employees. In total, micro, small and medium size enterprises constitute 99.8% of all enterprises, employing 67% of all employees in the EU, with the average of 4 employees per enterprise. In the EU Member States, the share of MSMEs is important, thus, it is essential to establish support system for the development of these enterprises.

In Latvia, tendencies of MSMEs development are similar to the EU. Table 2 shows the statistics of MSMEs in Latvia during the years 2004-2009.

As shown in Table 2, the number of micro enterprises in Latvia experienced a steady growth during the years 2004 and 2007, but during recession, they experienced a slight drop of 0.25%. During recession, the Ministry of Economics of the Republic of Latvia took immediate action and developed the Microenterprise Support Concept. According to the Microenterprise Support Concept, the main tasks to develop microenterprises are as follows: decreased establishment costs, simple bookkeeping, friendly tax policy, and simple access to finance (Microenterprise Support Concept, 2009). These actions were affective and the number of micro enterprises increased by 2.3% in 2009 compared with the year before. Small and medium size enterprises have similar tendencies - until 2008, the number of small and medium size enterprises experienced a slight annual growth of 10% on average. In 2008, the number of small



Source: authors' construction

Fig. 1. Support available for the establishment of micro, small and medium size enterprises

enterprises dropped by 2%, while the number of medium enterprises stayed stable. Both, the number of small and the number of medium size enterprises experienced impressive decrease during 2009- respectively by 19% and 20% due to recession. Because of economic problems, many small and medium size enterprises bankrupt or were forced to decrease their size. In total, the number of MSMEs decreased by 0.2% in 2009 compared with 2008 due to decline in the number of small and medium size enterprises and the increase of the number of micro enterprises.

2. Support for the development of MSMEs in Latvia

In Latvia, the available financial support for micro, small and medium enterprises can be classified into two groups: 1) financial support that is available to establish MSME and to ensure the first years of its work; and 2) financial support that is available for the existing MSMEs that are aiming at growth and development. Figure 1 shows support that is available for establishing MSMEs.

To establish a micro, small or medium size enterprise, three types of support are available: financial support, consultations and administrative help, and knowledge sharing and education. There are three main sources of financial support for MSMEs.

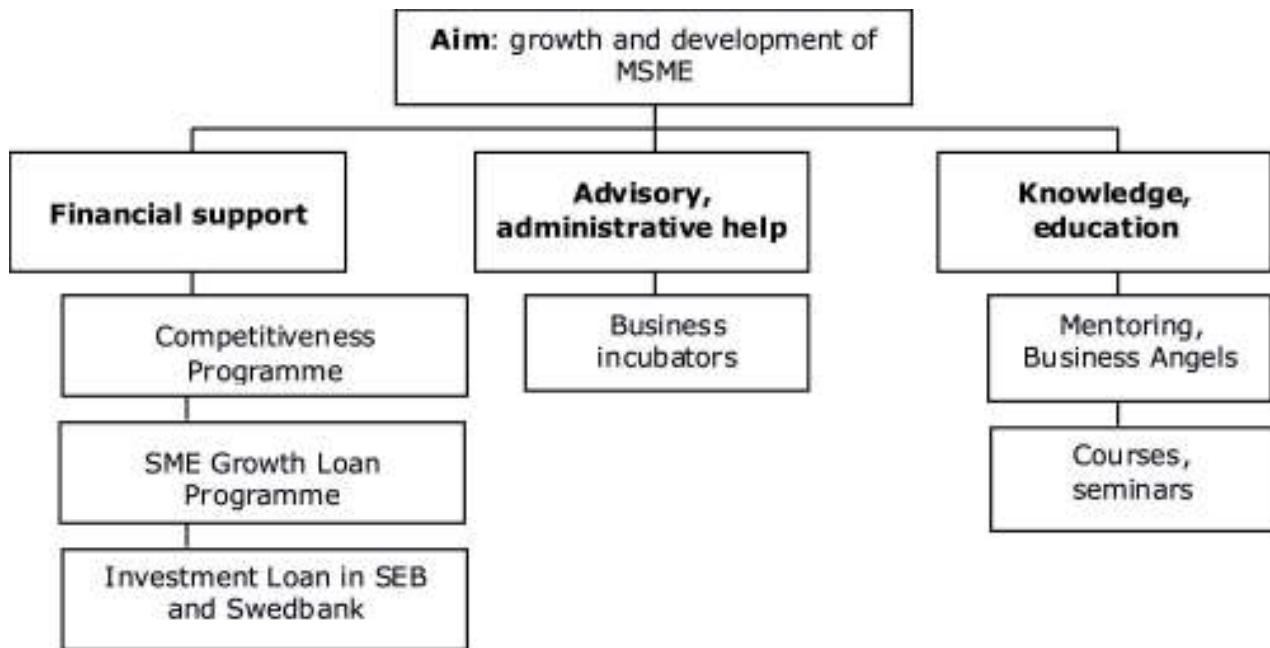
- **Measures for business or self-employed start-ups** - administrated by the State Employment Agency and offering training and support up to LVL 2000 for the development of business plans to registered unemployed persons (Pasakumi komercdarbibas..., 2011).
- **Start programme (ESF) - support to business start-ups** is administrated by the Promotional

Programmes Office ALTUM. The programme provides the business start-ups and newly established companies with an all-embracing support, i.e. consultations, training, and financing in the shape of loans and grants for starting the business. Consultations, loans up to LVL 54 thousand and grants up to LVL 2 thousand are available (Start programme..., 2011).

- **Micro-lending programme** is administrated by ALTUM and the overall objective of the programme is to improve access of micro enterprises (up to 10 employees) and self-employed persons (individuals – economic operators) to micro loans for setup and development of business activities. Loans are intended for the implementation of business plans – both for investments and working capital - and the loan volume is up to LVL 10 thousand, with fixed interested rate from 5% to 8% per annum and loan maturity up to 5 years (Micro Lending..., 2011).

There is one main source of consultations and advisory help and two sources of sharing knowledge and education.

- **Business incubators** are aimed to promote new, viable and competitive businesses, providing them with the necessary environment for business and advisory services. Business incubation is a unique and flexible business development process - a combination of infrastructure and personnel, designed to help develop new and small businesses by supporting the early stage of development with daily consultations based on business development issues (Biznesa inkubatori, 2011). There are five business incubators established in each region of Latvia.



Source: authors' construction

Fig. 2. Support available for the growth and development of micro, small and medium size enterprise

- **Mentoring and Business Angels** - movement of mentoring and business angels is becoming popular in Latvia. Both mentors and business angels are experienced business people who are willing to share their knowledge and experience with new and inexperienced start-ups.
- **Courses and seminars** - Investment and Development Agency of Latvia (LIAA) is offering several training sessions and courses for business start-ups and providing information about available support.

It is important that financial support is available not only during the establishment of MSME but also for its growth and development. In Figure 2, the authors summarise support available for the growth and development of micro, small and medium size enterprises.

Three main sources of financial support are available for the growth and development of micro, small and medium size enterprise.

- **Competitiveness Programme** grants loans to the businesses registered in Latvia with economically feasible business plans that cannot access the financing of the credit institutions due to increased risks they present. The total loan amount per one entrepreneur may not exceed LVL 7.5 million. Mostly, the loans are intended for implementation of the projects of the processing businesses and entrepreneurs attracting the financing of the EU Structural Funds' grant programmes (Competitiveness Programme, 2011).
- **SME Growth Loan Programme** finances small and medium enterprises and cooperative unions providing agricultural services that have economically feasible action plans but cannot access the financing due to high risk they present. The programme is financed by the European Investment Bank. Two types of loans are available - for investments and for working capital (including credit lines). The working capital

and investment loans taken together may not exceed LVL 300 000 for one entrepreneur (SME Growth..., 2011).

- **Investment Loan in SEB and Swedbank** in cooperation with the European Investment Fund. Investment loan is aimed to grant loans to small and medium size enterprises in Latvia. It is possible to finance investments in movable and immovable fixed assets and working capital to promote core expansion and development using loan of the European Investment Fund (Eiropas investiciju..., 2011).

For growth and development of MSME, it is still possible to use help and advice of business angels and mentors as well as it is possible to use services of business incubators if the business is established not earlier than 2 years before entering incubator.

3. Support diversification for the development of micro, small and medium size enterprises in Zemgale region

Zemgale region consists of 20 local municipalities and 2 cities, and each of 22 territories shows different development indicators. Therefore, the authors suggest to diversify financial support available for MSMEs to ensure development of all local municipalities. To diversify the support system, it is important to group 22 territories into few clusters. This allows to group homogeneous territories into groups and afterwards to work with each group separately. The authors use cluster analysis with 4 factors: number of micro enterprises per 1000 capita in 2009; number of small enterprises per 1000 capita in 2009; number of medium size enterprises per 1000 capita in 2009; and specially supported territory status. Specially supported territory status is used to describe territories with long lasting negative social and economic processes.

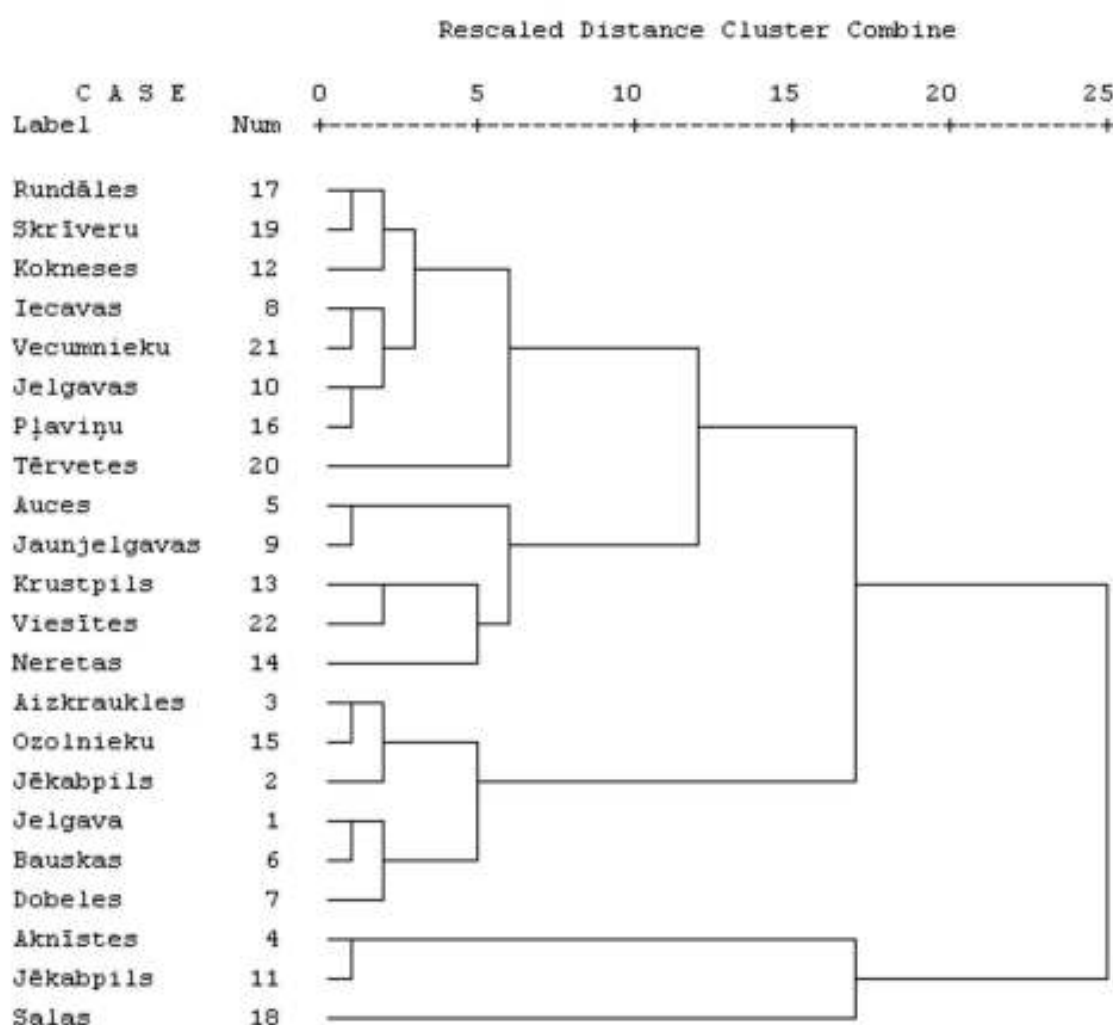
Table 3

Description of clusters according to the cluster analysis

Criteria	Clusters			
	1	2	3	4
Average number of micro enterprises per 1000 capita	35.4	50.1	39.5	94.2
Average number of small enterprises per 1000 capita	1.6	1.7	3.7	1.5
Average number of medium enterprises per 1000 capita	0.2	0.3	0.8	0.6
Specially supported territories	-	Auce, Nereta, Viesite, Krustpils, Jaunjelgava	-	Sala, Jekabpils, Akniste

Source: authors' construction

Dendrogram using Average Linkage (Between Groups)



Source: authors' construction

Fig. 3. Dendrogram using average linkage for local municipalities in Zemgale region

Local municipalities and cities are grouped in 4 clusters (Figure 3). Cluster 1 consists of Rundale, Skrīveri, Koknese, Iecava, Vecumnieki, Jelgava, Plavinas, and Tervete local municipalities. Cluster 2 consists of Auce, Jaunjelgava, Krustpils, Viesīte, and Nereta local municipalities. Cluster 3 consists of Aizkraukle, Ozolnieki,

Bauska, and Dobele local municipalities, and Jelgava and Jekabpils cities. Cluster 4 consists of Aknīste, Jekabpils, and Salas local municipalities. As shown in dendrogram, the closest connection between data is in Cluster 1 as linkages between local municipalities are close. Opposite is Cluster 4, where linkages between Aknīste, Jekabpils,

and Sala local municipalities are not as close. According to the information in dendrogram, the authors describe each cluster in Table 3.

Cluster 1 links territories with the average of 35 micro enterprises, 2 small, and 0.2 medium enterprises per 1000 capita. Cluster 2 links territories with the average of 50 micro enterprises per 1000 capita, 2 small, and 0.3 medium enterprises per 1000 capita; besides there are 5 specially supported territories in this cluster. Cluster 3 merges territories with the average of 50 micro enterprises per 1000 capita, 4 small, and 0.8 medium enterprises. Cluster 4 contains three local municipalities with very high number of micro enterprises per 1000 capita - 94, which is almost 3 times more than in Cluster 1 and Cluster 3; however, there are 2 small and 0.6 medium size enterprises per 100 capita, so all 3 local municipalities are specially supported territories.

Conclusions, proposals, recommendations

Access to financial support is one of the main problems for micro, small and medium size enterprises. Therefore, the authors of the article suggest that according to the analysis of Zemgale region it is possible to diversify the available support:

1. Cluster 1 links territories with the lowest number of micro enterprises per 1000 capita, average number of small enterprises, and lowest number of medium size enterprises. In these territories, it is important to stimulate the establishment of new micro and small enterprises, and also to stimulate the growth of existing micro and small enterprises into medium and large size enterprises. It is necessary to stimulate the establishment of new micro enterprises through programmes like ALTUM Start Programme, Micro Lending Programmes as well as education and training.
2. Cluster 2 is characteristic with a high number of micro enterprises per 1000 capita but lower number of small and medium size enterprises. Because of high share of micro enterprises, there are 5 local municipalities, which are specially supported territories with negative social and economic environment. It is important to stimulate the growth of micro enterprises into small, medium and large enterprises through Competitiveness and SME Growth Loan Programmes.
3. Cluster 3 merges territories with the second lowest number of micro enterprises and the highest number of small and medium size enterprises per 1000 capita. High share of small and medium size enterprises, which employs between 11 and 249 employees ensures that territories do not have negative social or economic situation. In this cluster, it is important to stimulate the establishment of micro enterprises through programmes like ALTUM Start Programme, Micro Lending Programmes as well as education and training, yet, at the same time it is important to keep small and medium size enterprises developed, since they ensure high employment.

4. Cluster 4 contains three local municipalities with a very high number of micro enterprises per 1000 capita but at the same time, there is a very low number of small and medium size enterprises. The high share of micro enterprises leads to the fact that all 3 municipalities are specially supported territories with negative social and economic indicators. The main task in this cluster is to stimulate the growth of the existing micro enterprises into medium and large enterprises. It is necessary to stimulate growth and development of existing micro enterprises, rather than establishment of new micro enterprises.

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Preferences of Consumers when Shopping for Regional Products

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Abstract. This paper presents partial results of research on consumer preferences when shopping for food. It is focused on the area of regional products and consumer preferences in relation to the country origin of food products. The results are based on questionnaire survey that was conducted within the period from October 2010 to January 2011 on a sample of 3767 respondents from the Czech Republic, via both online questionnaires and its printed version. The questionnaire system ReLa, developed by the Department of Marketing and Trade at the Faculty of Business and Economics, Mendel University in Brno, was used for the data collection. Data were processed with statistical software STATISTICA (Ver. 9). Preferences for food of Czech origin were analysed in relation to identification criteria. The research results show that the origin of food plays an important role in consumer purchase decision-making. Results of analysis of contingency proved no association between the variables – levels of preferences and gender or size of the towns of respondents' residence but a moderately strong degree of association between the selected values and respondents' occupation, age and education.

Key words: consumer behaviour, the Czech Republic, region, regional products.

JEL code: M31, M19

Introduction

The Consumer buying behaviour refers to the buying behaviour of final consumers, individuals and households that buy goods and services for private consumption (Kotler and Armstrong, 2008). Influences that affect the behaviour of consumers during the buying process are very important. Consumers shall go through several stages of decision-making process. Most authors (e.g. Solomon, 2004; Belch and Belch, 2009) name the following ones: problem recognition, information search, evaluation of alternatives, product choices / purchase decision, and outcomes / post-purchase evaluation.

Marketers are also interested in how their customers can be influenced by marketing stimuli and what are the consequences (Figure 1).

Every company should monitor a customer satisfaction because it not only keeps bringing current customers back but it also attracts new customers who are increasing a turnover of the company (Kotler, 2007).

Local production and production of regional manufacturers (producers) should respond to the growing importance of location in the global food-complex. The growing interest of producers and consumers to deal with alternative alimentary system should be of paramount importance in the approach to perception regions. Consumers increasingly focus on the issue of health, food safety, the impact of globalised markets, animal welfare etc.

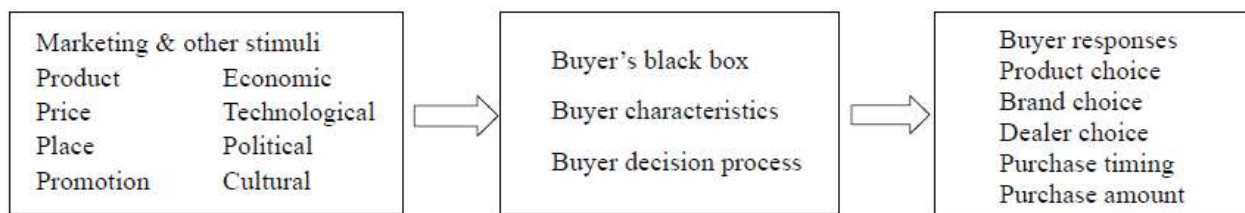
The Ministry of Agriculture of the Czech Republic has issued a methodology for the labelling of "Regional food", according to which the regional food is a product that is made for consumption by the final consumer. Such product is manufactured in the region and originates mainly from domestic raw materials (Ministry of Agriculture of the Czech Republic).

Jones, Comfort, and Hillier (2004) deal with the issue of local food and name a number of reasons for promoting regional food producers. One can start with the benefits

of the environment, economic, and social fields, besides that it also contributes to sustainable development. The authors point to the growth of employment opportunities in connection with the development of regional food production and the huge economic benefit for the region just in case of the sale of regional products. The authors also refer to the distribution options of food on the consumer market. The farmers have more possibilities how to sell their products, such as the possibility for consumer to collect their own fruit and vegetables on a farm. It is also possible to operate the farms and shops to sell baskets with a seasonal selection of fresh vegetables and fruit. This method of sales then promotes regional identity, local economy and it has a deeper impact on good relations between producers and consumers. Such relationships result in competitive advantage (Thilmany, Bond and Bond, 2008).

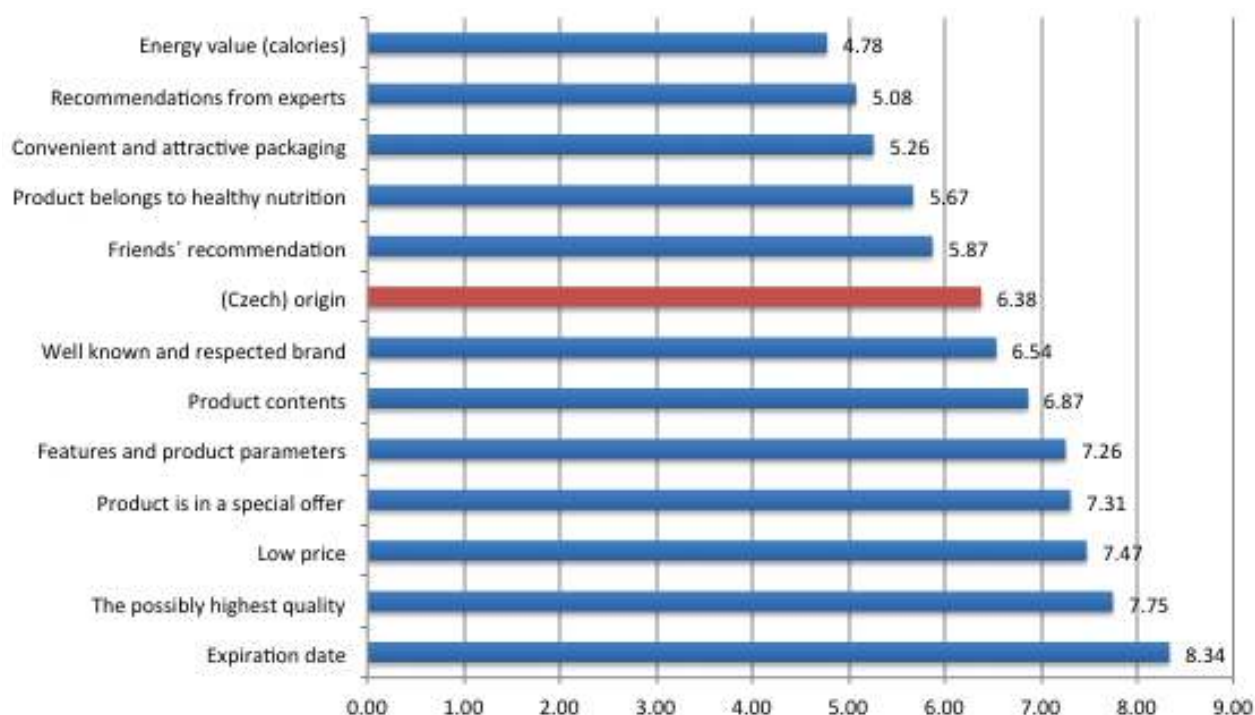
Pratt (2007) also believes that local food production and marketing brings benefits to farmers, food producers, and consumers. In order to increase farmers' incomes, he proposes to remove the middle part of the supply chain, business intermediaries, and sell products directly to ultimate consumers. Beneficial is also the producers' direct contact with consumers, this relationship between the seller and the buyer becomes more personal and trustworthy. Thilmany, Bond and Bond (2008) reach similar conclusions. For the consumer buying food, the place of origin of the food is important, and if the image of the place results in higher quality perception then it can affect his/her decision-making. The personal experiences of consumers with purchases of local food and their subsequent trust in producers and their products are also very important. For the consumer, it is also very important that their purchase contributes to the local economy.

In his article, McEntee (2010) summarises the reasons why people buy local food products. The advantage of buying seasonal food is its freshness and high nutritional value. It is better to buy food directly on the site of its



Source: Kotler, Armstrong, Principles of Marketing, 2008

Fig. 1. Consumer buying behaviour model



Source: questionnaire survey, October 2010 to January 2011, n = 3767

Fig. 2. Mean values for factors, which are important when consumers are choosing a particular product in a store

production, because transportation of food products to remote places burdens the environment. Thanks to local shopping, consumers meet food producers. Buying local food helps preserve open space and farmland. The productive farms maintain a higher quality of life. Purchasing local foods supports the local economy and the development of family farms, because more money stays in the region.

Research results and discussion

This paper presents the results of primary research, which is focused on preferences of Czech consumers when buying food, especially regional food products. The aim of the article is to assess the consumer behaviour in the Czech Republic in connection with their perception of food origin. In this paper, the interest concentrates on finding how the consumers perceive Czech food products, whether they are preferred to foreign ones, and whether consumers prefer foods typical of the region where they live including the statistical testing of dependencies between the parameters.

Data collection was conducted by researchers of the Department of Marketing and Trade at FBE MENDELU in the period from October to January 2011 on the sample of 3946 respondents from all regions of the Czech Republic. Totally, 3767 questionnaires were processed after elimination of incomplete questionnaires.

Online data collection was conducted via Research Laboratory (ReLa) Questionnaire System and printed questionnaire version, too. Both sources were merged into one database. Statistical evaluation of the obtained data was conducted with the use of STATISTICA (V. 9).

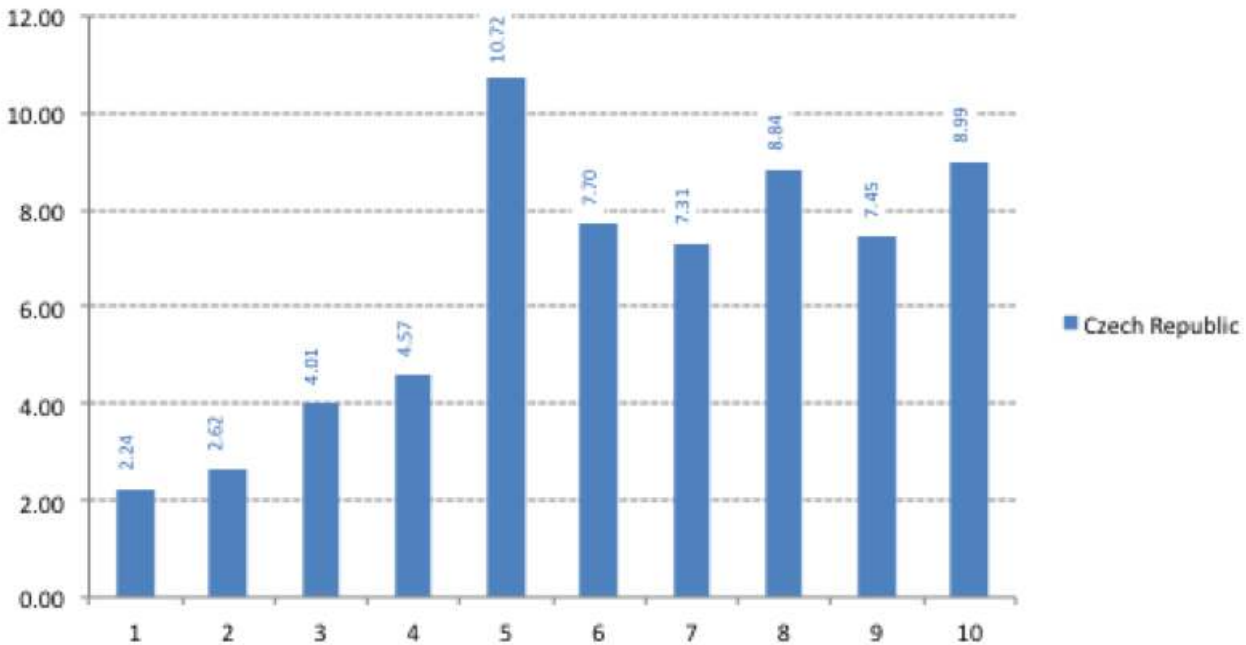
The sample characteristics:

- the sample is almost evenly divided into the following three categories according to the size of the place of the residence: up to 3,000 inhabitants, 3,000 - 89,999 inhabitants, and municipalities with 90,000 or more inhabitants;
- the largest group of respondents was a group that consists of people with secondary education, with leaving exam (50.6%);

Table 1

Results for the Czech Republic			
Statement	Mean	Median	Mode
I prefer Czech food to foreign	6.47	7	5
When I have a choice, I prefer local foods (food typical for the region where I live)	5.82	6	5

Source: questionnaire survey, October 2010 to January 2011, n = 3767



Source: questionnaire survey, October 2010 to January 2011, n = 3767

Fig. 3. I prefer Czech food products to foreign ones, %

- there were various social groups of respondents according to their occupation; the two largest groups are a group of students (38.0%) and a group of employees (38.0%);
- the most represented age category is 18–24 years of age (34.5%), second largest group consists of age category 35–54 years (22.4%), and the third one covers respondents in the age category between 25 and 34 years (17.0%);
- men are represented in the sample by 1518 respondents (40.3%) and women are represented in the sample by 2249 respondents (59.7%).

Looking at the position of the Czech origin as an evaluation criteria in contrast with other most frequently evaluated ones in food purchase decision-making, one can see that it does not belong to the top three, nor even top five, it reached the 8th rank out of 13 evaluation criteria provided, with the mean value of 6.38 on the scale from 1 to 10. Only the recommendations and health aspects are of less importance for the total sample (Figure 2).

Respondents were also given a list of statements and they had to select a value on scale from 1 to 10 based on their level of agreement with the statement (10 meaning I totally agree). Table 1 shows the results for the statements focusing on

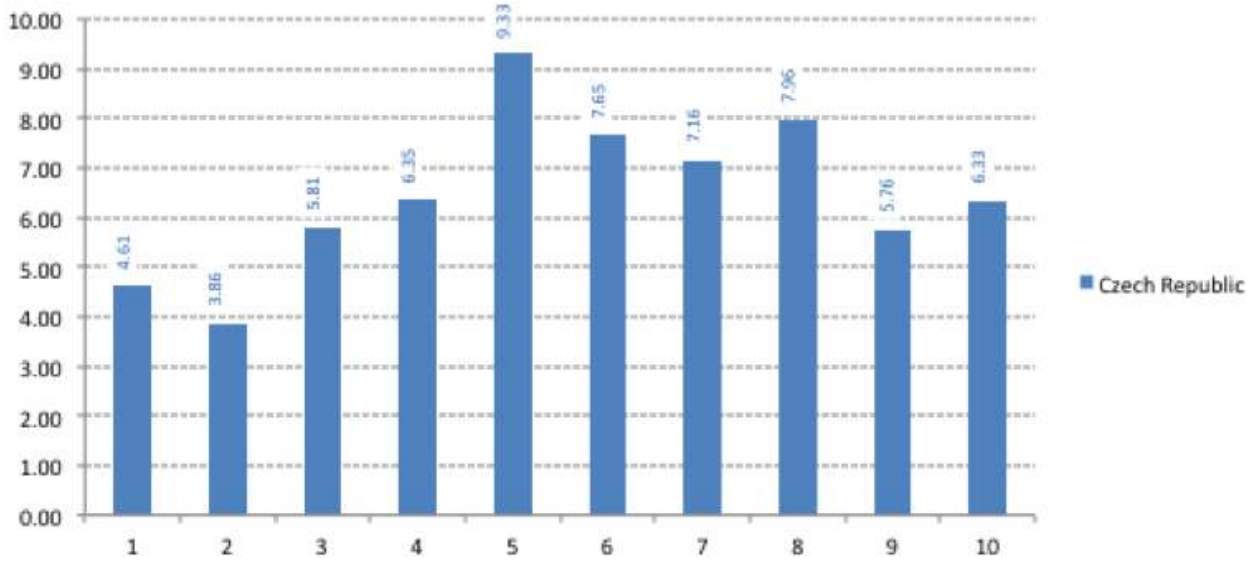
respondents consent with the statement reflecting their shopping behaviour in relation to the origin of the food products.

The frequencies of individual values on the scale for the total sample are presented in following two figures (Figures 3 and 4).

The Czech respondents assigned the food origin a medium importance (the typical selected value was 5). The following Figure 5 and Figure 6 illustrate differences in the levels of preferences between male and female respondents.

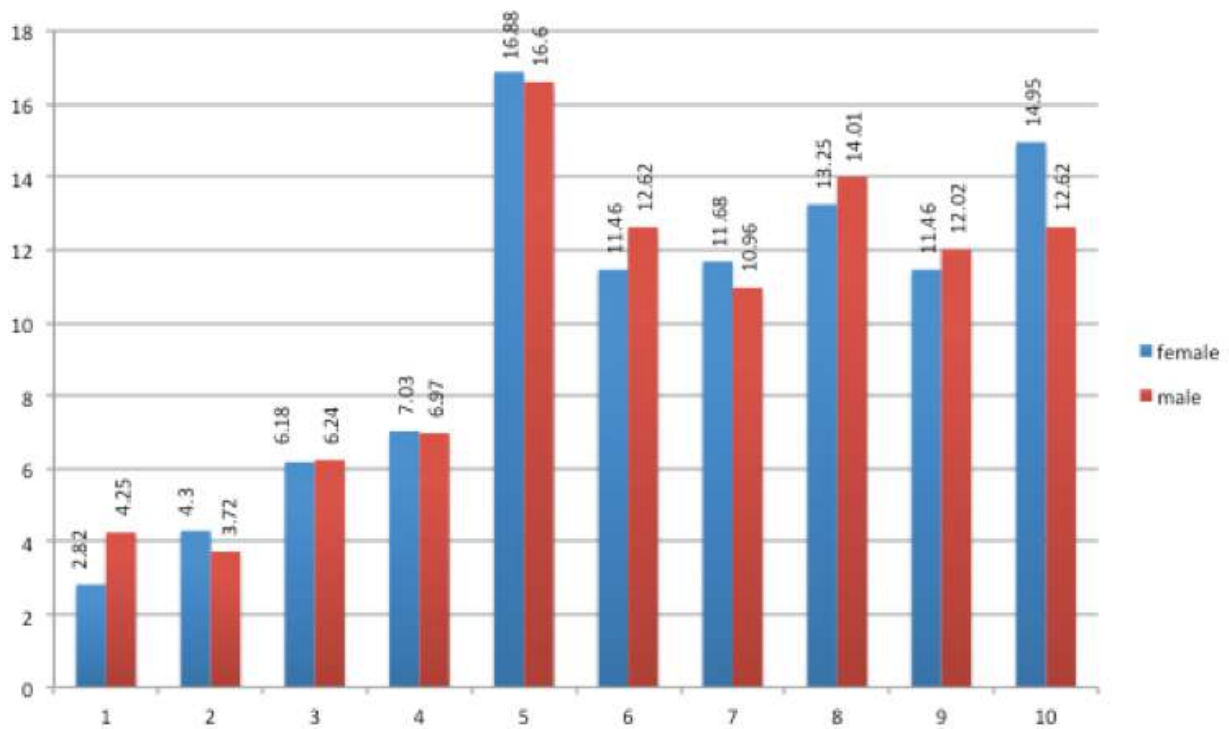
It is evident that the selected opinions by men and women are different but not dramatically. The independence on gender was proved also by the analysis of contingency (p-value = 0.22733). In general, one can see that the majority of both men and women consider the Czech origin as moderately or strongly important. The analysis of contingency, however, provided results, which are proving moderately strong degree of association between the selected values and respondents' occupation, age, and education (p-value = 0.00000).

The approach to local origin (a particular region of the Czech Republic) is a little bit different, despite the fact one cannot really see big differences between preferences of men and women when dealing with the issue. Again, results of analysis of contingency proved



Source: questionnaire survey, October 2010 to January 2011, n = 3767

Fig. 4. When I have a choice, I prefer local foods (food typical for the regi on where I live), %



Source: questionnaire survey, October 2010 to January 2011, n = 3767

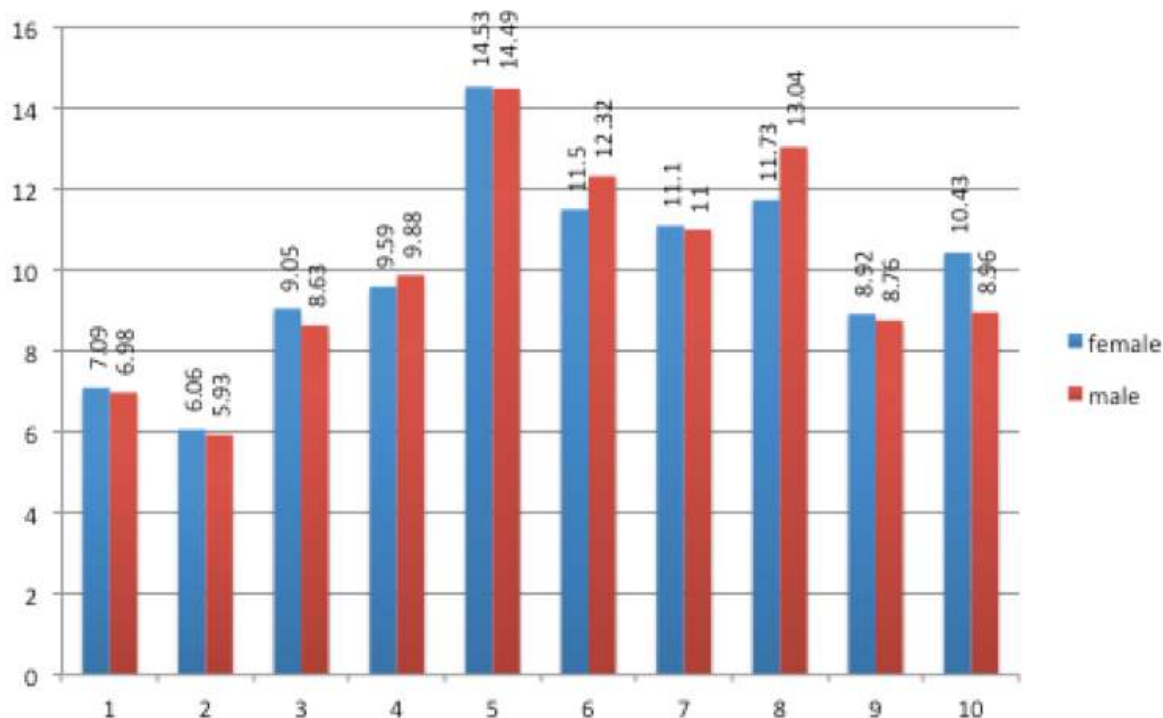
Fig. 5. I prefer Czech food products to foreign ones, %

no association between the variables – selected values and gender and size of the towns of their residence but a moderately strong degree of association between the selected values and respondents’ occupation, age, and education (p-value = 0.00000).

Respondents, in general, are not so definite on the scale of their preference. The preferences reach its peak in value 5; nevertheless, the shares in other values both up and down the scale are more equal. Women seem to

show somewhat greater degree of patriotism, in this case a “local patriotism” (Figure 6).

The presented results focused on consumer preferences when buying regional food, other issues connected with consumer preferences are being further processed and will be published in following papers. During autumn 2011, the Department of Marketing and Trade also conducted a qualitative research with interesting findings.



Source: questionnaire survey, October 2010 to January 2011, n = 3767

Fig. 6. When I have a choice, I prefer local foods (food typical for the region where I live), %

Conclusions, proposals, recommendations

The basic prerequisite for the promotion of regional food products is the fact that consumers are interested in the origins of food and that the origin of food plays an important role in consumer purchase decision-making. From the perspective of marketing communication we can see a great potential in focusing on building an awareness of Czech origin and regional origin of food products.

Either therefore, it should be considered as useful to highlight this information on the product packaging itself or by the way, the product is displayed at the point of sales. One option is a development of a brand, which can be seen in the case of regional food products as one of the most important tools of marketing communication. Growing interest of the Czech consumers in quality and the food product origin is an opportunity for an increase in competitiveness of regional producers on the Czech markets. Women tend to be even more patriotic than men are. Therefore, the emphasis on the local origin of the food product may be turned into product's competitive advantage.

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Development and Structure of Latvian Agricultural Farms After Joining The EU

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Abstract. The paper analyses the proportion of rented farmland in the total land balance as well as the use of farmland for the period of 2003-2010. According to this analysis, cereal crops in Latvia on average occupy more than 36% of the entire utilised agricultural area (UAA) farmed for crops and range within 14.9-54.4% depending on the region and the farm size group. The role of growing cereals in the agricultural industry is explained in the analysis and as a result, it is concluded that growing cereals is mostly popular among large farms because these farms have specialised in farming one group of crops.

It was ascertained in the paper that the single area payments (SAPs) accounted for a significant share in the profit of enterprises. It was proved that without the SAPs, the indicators of financial performance of enterprises would significantly worsen, especially profit that would decrease by 30-40% on average. Among several size groups of farms and in some regions, agricultural enterprises would suffer losses and be put out of business without these support payments.

General research methods: creation, structuring and dynamics of time series analysis methods as well as general analysis, synthesis and grouping techniques.

Key words: EU support, single area payment, financial results, agriculture.

JEL code: A12, H24, Q15.

Introduction

Agriculture is historically one of the most ancient and important industries not only in Latvia but also in the whole world. Its formation and evolution is consistently associated with the development pace of mankind and with the progress in science and technology. The industry takes a significant position in the world's economy; it has an essential role in the national economy of Latvia as well. The essential role and position of agricultural industry among all the industries have been researched and described by many authors.

In 1934, K.Ulmanis said in his speech: "Agriculture is the basis of culture of mankind, and we can completely rightfully speak about the human history of a country only since the moment this nation abandons its nomadic lifestyle, settles for permanent life in a specific place and, therefore, creates a basis for its material life, i.e. agriculture" (Latvian Agricultural..., 1940).

The role of Latvia's agricultural industry is emphasised by several researchers, for instance, V.Kaza (1976) says, "One of the prerequisites of existence of wildlife is land. Land is a source for producing agricultural commodities and food products and a necessary prerequisite for the functioning and development of other industries...". K.Valdmanis (1983) also admits "Agriculture is an important industry for our nation. Its purpose is to provide the population with food products but the light and food industries – with raw materials...".

The European Commission has published a report on the agricultural industry's perspectives for the period of 2008-2015, which includes clear signals about the stability and even growth of the industry. Despite the significant short-term setback in the wake of the economic recession, the medium-term prospects for the EU agricultural

income remain positive with the aggregate income in real terms and per labour unit exceeding the very favourable 2007 year by 7.5% in 2015. While agricultural income in the EU-15 would show a very moderate development, it is foreseen to display a more pronounced picture in the EU-12 supported by the continuous increase in the CAP payments (European Commission, 2009b).

Another European Commission publication provides a summary on the Common Agricultural Policy instruments and their effect on agriculture: "The farming sector's income development implies that without some kind of income support, many European farmers would not be able to stay in business" (European Commission, 2009a).

Z. Kazakevicius (2009), when working on the paper entitled "The Influence of State Economic Support to Farmers Income Level", made a conclusion that the subsidies accounted for more than a half of gross profit in Lithuania.

In Latvia, the effect of SAPs on farms and their profit has not been researched; therefore, it is important to ascertain it.

Research object – FADN data on the economic performance of farms.

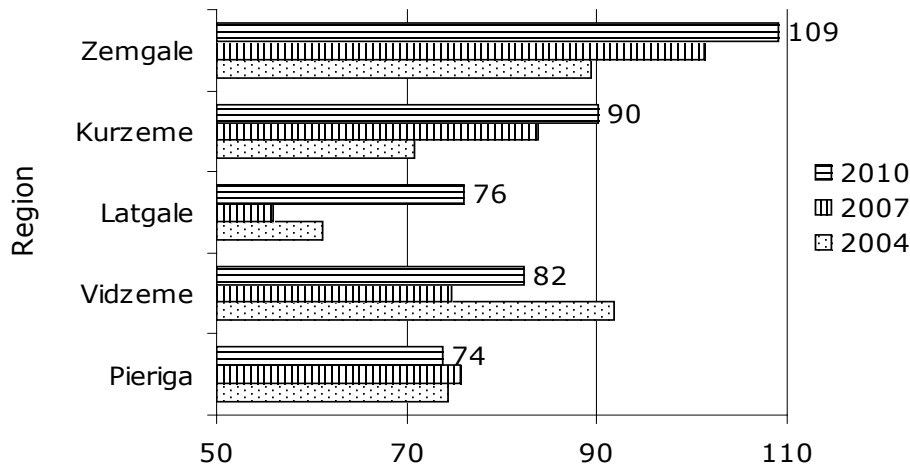
Research hypothesis – single area payments have a positive impact on the income structure and development of farms.

To verify the hypothesis, the *research aim* was defined: to analyse and assess the income structure of farms and the situation in farms since the introduction of SAPs and to ascertain their effect.

To achieve the above aim and to examine the hypothesis, several *research tasks* were set:

- 1) to research and analyse the proportion of rented farmland in the total land balance and its changes

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Source: author's calculations based on the FADN data, 2004-2010

Fig. 1. Average sizes of farms in the regions during 2004-2010, ha

since the introduction of SAPs as well as to analyse the distribution of farmland in the regions of Latvia;

- 2) to analyse the changes in areas sown with the main groups of crops;
- 3) to assess the effects of disbursed area payments on the total income of payment recipients.

Information published on the Farm Accountancy Data Network (FADN) of the Latvian State Institute of Agrarian Economics was used in the research. The FADN functions in all the Member States, its establishment and basic principles are regulated by the EU legislative enactments passed especially for this purpose.

Data samples are determined in accordance with the Regulation No. 1348 *Procedure of the Establishment, Maintenance, and Functioning of Farm Accountancy Data Network* accepted by the Cabinet of Ministers of the Republic of Latvia on 24 November 2009, which stipulates that a data sample has to include not less than 1000 farms.

The FADN data are grouped using such an indicator as European size unit, which characterises a farm's possibilities to create value added that enables the farm to raise its competitiveness depending on the chosen specialisation. By using a special formula, the FADN computes European size units and groups farms according to them. Computing European size units and determining specialisations are based on total standard gross margins.

The following research methods have been used in the paper - creation, structuring and dynamics of time series analysis methods as well as general analysis, synthesis and grouping techniques. Conclusions were drawn using the logical and constructive methods.

Research results and discussion

1. Analysis of the area of land used by farms

The study of the area of farm land was conducted by processing the FADN data up to an extent so that it is possible to conduct comparative analysis.

In Latvia, the FADN data are computed and grouped in accordance with the Regulation No.271 *On the Statistical Regions and their Administrative Units of the*

Republic of Latvia accepted by the Cabinet of Ministers of the Republic of Latvia on 28 April 2004 and the statistical territorial classification of the European Union (NUTS 3) for six statistical regions. From 1 July 2009, Latvia's territory consists of the following administrative units:

Riga (includes the city of Riga), Pieriga (Jurmala, the municipalities of Limbazi, Ogre, Riga, and Tukums), Vidzeme (municipalities of Aluksne, Cesis, Gulbene, Madona, Valka, and Valmiera), Kurzeme (Liepaja, Ventspils, and the municipalities of Kuldiga, Liepaja, Saldus, Talsi, and Ventspils), Zemgale (Jelgava, the municipalities of Aizkraukle, Bauska, Dobeles, Jelgava, and Jekabpils), Latgale (Daugavpils, Rezekne, and the municipalities of Balvi, Daugavpils, Kraslava, Ludza, Preiļi, and Rezekne) (Grozījums Ministru kabineta..., 2010).

Figure 1 demonstratively shows the average sizes of farms in the regions during 2004-2010.

Several conclusions can be drawn from the calculation results presented in Figure 1.

- Figure 1 shows that the smallest average sizes of farms are located in Latgale region - the average size of surveyed farms was 56 hectares in 2007. If this value is assessed in the context of information from Table 1, one can explicitly see that mostly small farms operate in Latgale region that actually could be called subsistence farms, which is specific to this region.
- In contrast to the previously observed region of Latgale, Zemgale region has large farms in terms of land area. For instance, the average Zemgale farm was 101 ha in size in 2007, whereas in 2010, the average size was 109 ha. It has to be noted that this fact does not mean that particular farms have increased in size, since not always the FADN collects annual data from the same farms and the data could be random.
- Inspected farms in Zemgale, Kurzeme, and Latgale regions have increased by 20% by the year of 2010 compared with 2004. Pieriga region has an average size of farms of 72 ha in 2010 the same as in 2004.

Table 1

Proportion of rented land in the total land balance over the period of 2003-2010, %

Year	Economic size of farms, ESU							On average per farm
	< 4	4 -< 8	8 -< 16	16 -< 40	40 -< 100	100 -< 250	>= 250	
2003	17.1	23.7	39.1	49.1	66.3	68.2	68.1	35.6
2004	17.6	23.8	37.5	47.0	61.4	65.7	66.7	37.2
2005	15.0	23.2	37.0	45.0	59.8	62.8	60.3	36.0
2006	19.7	20.0	32.7	45.7	57.2	59.1	57.1	35.7
2007	11.5	21.8	32.6	44.9	55.8	63.5	59.9	36.5
2008	12.3	30.7	28.6	43.5	56.3	61.7	61.7	36.5
2009	15.4	32.9	30.7	45.4	57.9	61.2	54.5	37.2
2010	15.2	33.0	34.9	48.0	57.8	61.4	55.1	39.9

Source: author's calculations based on the FADN data, 2003-2010

Table 2

Percentage distribution of various crop groups by area compared with the whole area of land belonging to farms in the period of 2004-2010

Crop group	Average in the period per farm	Economic size of farms, ESU						
		< 4	4 -< 8	8 -< 16	16 -< 40	40 -< 100	100 -< 250	>= 250
Cereals	36.0	14.9	22.3	34.2	43.3	53.2	54.4	51.4
Rape	5.8	0.2	1.5	2.3	5.2	10.8	13.9	16.0
Coarse fodder crops	18.2	26.2	20.0	18.6	16.6	10.5	13.0	15.7
Fallows	6.2	5.2	6.7	7.0	7.3	7.6	5.4	3.1
Meadows and pastures	25.9	41.5	40.0	30.8	20.8	11.9	8.3	7.1
Other crops	4.8	6.2	5.3	4.7	4.7	4.5	3.9	4.5
Unused AA	3.0	5.8	4.2	2.5	2.1	1.6	1.1	2.1

Source: author's calculations based on the FADN data, 2004-2010

- In Zemgale region, the greatest percentage increase is observed for the farm group of more than 250 ESU, reaching 33%, which can be explained by strengthening the position of large farms on the agricultural market.
- In Vidzeme region, the greatest percentage decrease compared with the base year is observed for the economic size group ranging within 100-<250 ESU. It is possible to explain it by the fact that in 2007 and 2008, a new farm group of ESU was introduced in the FADN data, which is >=250. It means that this group includes data gathered from farms whose size is more than 1000 ha.

Table 1 includes a calculation result on the proportion of rented land in the total land balance over the period of 2003-2010.

Several important conclusions can be made according to the calculation results in Table 1. It is worth mentioning the main one – the proportion of rented land decreases. One of the reasons why it happens is that land owners purchase the previously rented land. Since 2004, the EU area payments have been introduced in Latvia, and

farmers have had a possibility to apply for and use this support according to their own judgement. It is possible that a part of farms used this support for increasing the amount of owned land by purchasing additional land.

The relatively largest areas of rented land belong to the farm group of 40-<100 ESU and to the bigger ones. The area of rented land exceeds the area of owned land. In the country, the area of rented land among the farms range from 35.6 to 39.9% on average.

2. Farm distribution by group of crops

Researcher A.Boruks has dedicated his scientific contribution to explaining and describing the history of Latvian crop farming, explicitly pointing to its role: "The role of crop farming in the history of our nation is very great, as it was the main type of occupation for many centuries... Farming emerged in Latvia along with the arrival of the Baltic tribes around the 18th century BC." (Boruks A., 2003).

J.Klovans, R.Krogere et al. (1983) describe the beginning of crop farming and its evolution and define it as follows: "Crop farming is one of the most ancient,

important, and extensive industries concerning public production. Its formation and evolution is closely associated with the pace of evolution of the whole mankind, the capacity of public production, and the progress in science and technology".

To assess the changes in areas of crop groups, it is important to group the data in a way they are comprehensible and clearly perceptible. Crops that occupy on average more than 5% of the whole land area of farms were selected after analysing the data available on the FADN. The crops that occupy the relatively largest areas are grouped in Table 2.

After analysing the results included in Table 2, one can make several judgements and conclusions.

- The main group of crops that is grown in Latvia is cereals of various kinds, and the areas sown with cereals in the regions range from 14.9% up to 54% over the period from 2004 to 2010.
- Analysing the farm groups of ESU, an interesting observation becomes obvious – the greater the value of ESU for a farm group, the relatively more cereals are grown, which is actually logical because the large farms have specialised in growing particular groups of crops. The small farms behave in a different way and grow various crops.
- The groups of crops whose areas are less than 5% on average belong to 'other crops', for instance, pulses, potatoes, vegetables and flowers, perennial plants as well as other groups of crops.
- The table also includes data on agricultural land not used for agricultural activities. Percentage of the used areas has the smallest share and the higher is the ESU group, the smaller is this share.
- On average, during the period of 2004-2010, 36% of the whole area of farmland was sown with various cereals, 25.9% was meadows and pastures, 18.2%

was coarse fodder crops, and about 6% of the area was farmed for rape or fallowed.

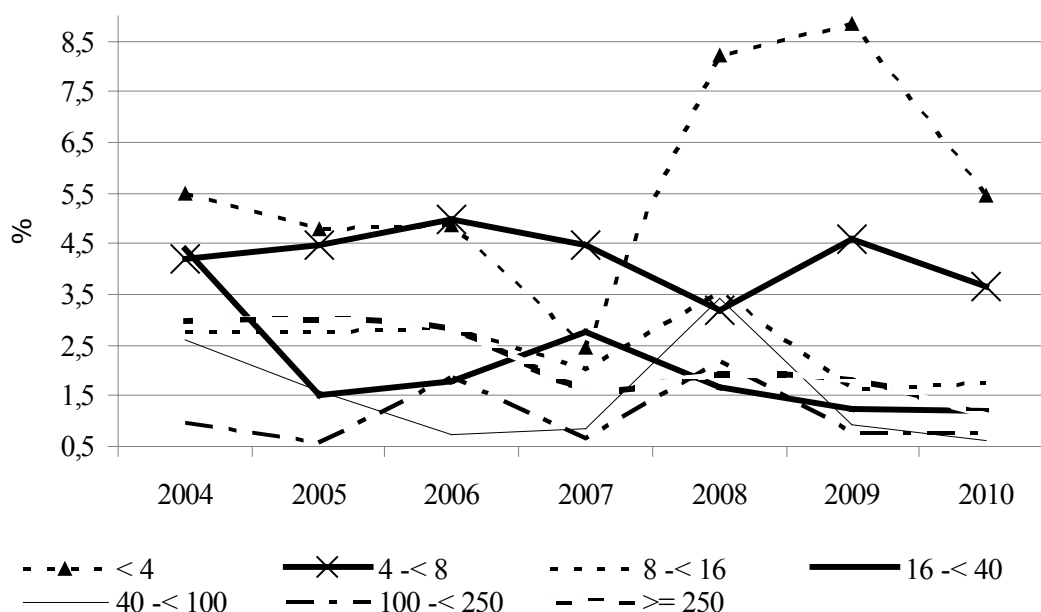
Unused agricultural land in the period takes up to 3% of the total area. The structure of the unused agricultural land has also changed from 2004 to 2010. Changes can be seen in Figure 2.

Although unused agricultural land area of the farm is ranging from 2.3% to 3.7% on average between years, it is seen that they differ in different ESU farms, which could also be seen in the table above. From calculations used to create Figure 2, the following tendency can be seen - agricultural land is increasingly used in agricultural production. Farmers choose these areas for agricultural treatment and to apply larger areas for support payments.

3. Effects of single area payments on the profit of farms

The situation in rural areas of Latvia has significantly changed, since Latvia's accession to the European Union, which took place in 2004. Farmers have a possibility to receive support payments of various types for doing business in rural areas including single area payments per hectare of utilised agricultural area that is maintained in a good agricultural and environmental condition.

The development of Latvia's agricultural industry after joining the European Union was researched by I.Pilvere (2008). She analysed the amount of the EU support and its role in the national economy. The amount of the disbursed support over the reference period has increased 6.4 times and this rise with certainty exceeds the increase rates of other agricultural indicators, demonstrating that part of the support is evidently channelled to cover the growing costs (Pilvere I., 2008). L.Straujuma and K.Spogis (2006) have conducted a research related to the financial situation in rural areas and made a conclusion that the



Source: author's construction based on the FADN data, 2004-2010

Fig. 2. Percentage distribution of unused agricultural areas in the period of 2004-2010

Table 3

Effects of subsidies, state support, and SAPs on the profit of farms in 2003-2010

Year	Type of support and indicators	Economic size of farms, ESU						
		< 4	4 -< 8	8 -< 16	16 -< 40	40 -< 100	100 -< 250	>= 250
2003	Subsidies, state support, LVL	476	1400	3937	9965	32293	64359	123220
	Return to management, LVL	-2065	-724	1124	6399	19985	60598	143141
2004	Subsidies, state support, LVL	1755	4482	7014	16145	44319	88780	117634
	Single area payment, LVL	266	533	836	1907	4536	10091	15439
	Return to management, LVL	-803	2775	5641	16016	31867	63324	132905
2007	Subsidies, state support, LVL	3155	5624	10495	19853	44428	104014	251924
	Single area payment, LVL	486	784	1480	2952	7102	15520	34163
	Return to management, LVL	-2049	208	2649	13046	38571	98772	208578
	Return to management, LVL	-3227	-1725	-680	3182	719	1395	46718
2010	Subsidies, state support, LVL	3567	6298	10436	21709	44193	119060	280116
	Single area payment, LVL	959	1694	2706	5368	11340	27100	61611
	Return to management, LVL	-2688	-608	1225	7316	16200	52162	74978

Source: author's calculations based on the FADN data, 2003-2010

area payments had a positive role even if not always they were used for investments in farm development.

Support payments for farms are also available in the USA. The amount of government payments and their importance to farm income vary by the type of programme, characteristics of the farm operation, and location of the farm. They group 1997, 2002, and 2008 Farm Act programme payments into four broad categories: direct or 'fixed' payments; payments that depend on current market prices for enrolled commodities; conservation programme payments and other payments (Farm Income..., 2010).

It is well known that any kind of support has a positive effect on the economic performance of farms, however, it is necessary to ascertain the extent of effect the subsidies, and especially the single area payments, have on the profit of farms. To solve this problem, estimates were made using the FADN data, which are presented in Table 3.

According to the results included in Table 3, one can make several conclusions, which clearly indicate that the single area payments have a significant role in the income structure of farms.

If the year 2003 is compared with the year 2004, one can see that the farm groups of ESU have increased their profit, as the single area payments as well as other support payments per area were booked in balance sheets of farms in 2004.

The profit of farms is sometimes negative, meaning that the farms incur losses. However, if such support payments as the subsidies, state support, and SAPs were not available, the farm losses would increase exactly by the amount of annual support.

The single area payments account for a relatively small share in all the subsidies and other area payments, ranging from 9% to 26% depending on the report year and the group of economic size of farms to which a farm belongs. Among the farm groups of ESU, no big difference

is observed for the share of these support payments; on average it is equal.

The single area payments are significant if analysing their share in the profit of agricultural enterprises. The losses would even be greater in several years if no SAPs were available, especially it is related to the farm groups of small ESU. The largest share of SAPs in profit is observed for the farm groups <4 and 4-<8 ESU, accounting for from 19% in 2004 to 376% in 2007, while in the other farm groups of ESU this share, accounts for 30-35% in profit on average. For the farm groups of small ESU, the area payments often are the only farm income, as these farms are subsistence farms producing agricultural goods for their own consumption.

The SAPs make a relatively larger share in profit in 2009 and 2010 as compared with the other years. It could be explained by the fact that the rate of SAPs was increased from year to year in order to ensure convergence concerning this indicator with the EU countries that joined the EU long before Latvia did it.

The rates of SAPs have an upward trend. In 2010, it was more than twice as high as in 2004. The rate of single area payments in 2004 was LVL 13.64 per hectare; later this rate increased by 22-38% a year and reached the highest value of LVL 44.35 in 2010. The rate of SAP has increased by 225.15% compared with the base year.

Conclusions

1. In Latvia, just like in many other countries of the world, the industry of agriculture has an important role in the country's development. Historically, it was one of the basic occupations.
2. The smallest average sizes of farms are located in Latgale region, indicating that mostly subsistence farms function there, which is the most ancient and simplest type of economic activity in which all needs are satisfied by producers themselves. Producers with their families provide

- themselves with everything that is necessary for life.
3. Zemgale region has the largest farms in terms of land area. It is Latvia's central and most agriculturally productive region owing to its rich soils. Large farms are located in the region, which extend their business by renting agricultural land from other farms.
 4. A high proportion of cereals is observed in the area structure of crops; on average, it accounts for 36% of the total area of farmland in Latvia. In the farm groups of 40- <100 ESU and more, cereals account for more than 53% of the total area.
 5. The subsidies, state support, and SAPs have a significant role in the balance sheets of farms. It is proved that if no annual support payments were available, many farms would go out of business, as they cannot incur losses for a long time.
 6. The single area payments account for 9-26% of the total amount of subsidies and state support, which change depending on the report year and the group of economic size of farms to which a farm belongs.
 7. The research results showed that the farms would perform without profit or even incur losses if such a type of support as single area payments were not available.

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Category Management as an Important Management Tool for Performance Enhancement of Rural Trade Enterprises

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Abstract. The aim of this paper is to present the results of research held by the author with target to find new ways of implementation of management tools in order to ensure the performance enhancement for trade enterprises. The paper reflects the results of the author's research, aiming to take a specific attention on the importance of use of *Category management* approach managing a small rural trade enterprise. The aim of the research was to make scientifically approved practical and easy in use methodology for coordination of interaction for management of wholesale and retail trade enterprises in the process of Category management. *Category management* approach is a management tool that helps benefit from coordination of interaction between retailers and wholesalers. Today's executives of biggest retail chains are already familiar with the benefits of *Category management* approach. Still the author's research has proven that exactly the small rural trade enterprises are those which need help and instructions in performance enhancement by the use of category management approach.

Key words: category management, TQM, trade enterprise performance enhancement.

JEL code: R11

Introduction

The following paper reflects the results of the author's research, aiming to take a specific attention on the importance of use of *Category management* approach when managing a small rural trade enterprise. The aim of the research was to make scientifically approved practical and easy in use methodology for coordination of interaction for management of wholesale and retail trade enterprises in the process of *Category management*.

Category management is a process that involves managing product categories as business units and customising them to satisfy customer needs. A category is a distinct, manageable group of products/services that consumers perceive to be interrelated and/or substitutable in meeting consumer's needs. The goal of category management is to reach the maximum customer satisfaction and increase the efficiency of buyer-supplier collaboration. The principles of category management were started to use in the beginning of 1990s, while the marketing Guru in the United States of America tried to create an organised formal process of marketing that today is called *Category management* theory (Kulikova, 2009).

The methodology of research includes – analysis of management theory literature content; and modelling, processing, and analysing of statistical data. In order to identify the basic problems of research object – wholesale and retail trade organisations – qualitative research techniques like interviews with the executives of trade enterprises by division them into two different groups – executives of wholesale organisations (in some cases also manufactures) and retail organisations were used in the research. In addition, interviews with the staff of a non-profit organisation ECR Baltic and the president of Latvian Chamber of Traders were used in order to get more comprehensive information on the processes of interaction between trade organisations.

The main literature review was started in the late autumn 2008. The collection of empirical data was started in 2009. The survey took place between autumn 2010 and spring 2011 and followed by data analyses.

The industry analyses showed that the number of wholesale companies in Latvia decreases, while the turnover of those who stay on the market increases. According to the trend, in the near future only several strongest and biggest wholesalers would stay, they will control the market, thus, dictating the rules for smallest retailers that may lead to destruction of small retail business. The survey results analysis approved that the implementation of *Category management* was more required for management of rural trade enterprises than for already well developed management processes of the biggest retail chains that already conquered the trade industry in the biggest towns.

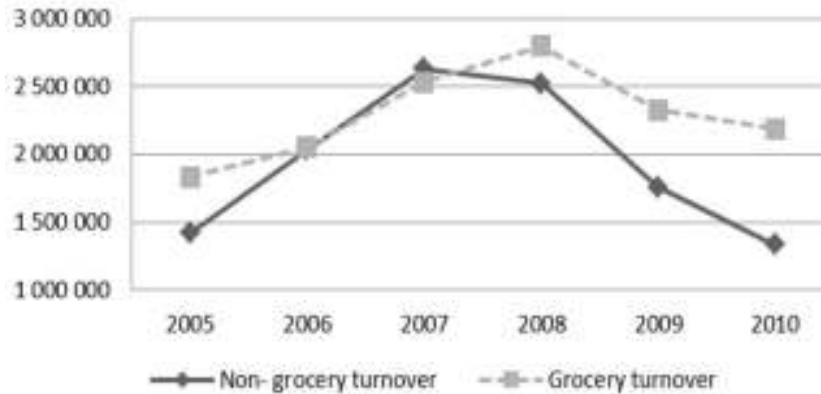
Research results and discussion

1. Theoretical base of the research

Various theoretical perspectives that present the information on the classic management tools available for the managers and the tools that lead to improvement of coordination of interaction processes of trade enterprises were used for the purposes of the research. The improvement of the coordination within the interaction process in its turn helps the enterprise enhance the performance of the organisation. The management tools applicable in trade organisation like retail and wholesale trade companies are of the most interest within the held research.

The content analysis of different theories on classic management tools as Fayol's approach discussed by scientists (Morgan G., 2006), SWOT analysis debated by researches (Slocum, 1994; Weinrich, 1982), Porter theory presented in works of experts (Porter M.,

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Source: author's construction based on the statistical data analysis

Fig. 1. Retail turnover in Latvia, share of grocery versus non-grocery turnover

1998; Wang W., 2009) and McKinsey seven S model (Rasiel, Friga, 2002) were observed in the study. The discussion continues with the description of recent trends in management science and principles of modern management tools used by executives of organisations in order to enhance the performance of organisation. Within the discussion, the author glanced at the essence of such management tools as Balanced Score Card (Kaplan, Norton, 1992), Knowledge management (Hazlett, 2005; Wang W., 2009), Growth strategic approach (Rigby, 2009), Activity Based management (Ghikajanu, 2008; Trotta, 2003), and Downsizing (Vollman, 1993). Yet, more detailed attention was given for *Category management* tool that ought to be one of the most popular tools within the executives of trade enterprises and different perceptions of this tool seen by researches (Vitek, 1998; ACNielsen, 1992; Hamister, 2007).

The author also pays a special attention to the Total Quality Management (TQM). While some of the researches recognise the TQM as one of management tools, the author considers that TQM discussed by researches (Besterfield et al., 2011; Deming, 1986; Juran, 1995; Kondo, 1993) should be perceived as more than simply a management tool. The author concludes that the use of TQM concept should be used as a primary philosophy for the creation of management policy of the enterprise.

2. Industry peculiarities for rural trade enterprises in Latvia

Thorough trade industry analysis was held within the perceived research. The overview of world retail market presents the processes of globalisation in retail industry and peculiarities of grocery retail further narrowing the analysis to Grocery retail in the Eastern Europe and current situation in the Baltic Grocery retail industry. The analysis of retail industry highlights the peculiarities of Latvian Retail grocery.

Commonly, there is a shift between the changes of grocery and non-grocery retailers. Both grocery and non-grocery sales have dropped dramatically after the fall out. While grocery turnover declined by 22% in the year 2010 in comparison with 2008, the decline in non-grocery retail sector at the same period was almost 50% and

dropped under the level of the year 2005. The dynamics of retail turnover during the past years in Latvia is shown in Figure 1.

Sales of non-grocery retailers suffered much more as the majority of goods they sell are not staples, so purchases of these goods during the time of crisis were either cancelled or delayed. Sales of clothing and footwear retailers dropped by 29% in 2009 and 18% in 2010; the majority of these players admit there was no other way to attract consumers' attention and stimulate sales than to offer considerable discounts up to 75% off. Many traders closed some of their stores, as sales turnover did not always justify expensive rent in shopping centres (Euromonitor International, 2011, January).

It is observed that the share of shops with big sales area has increased. The number of shops with sales area of 400-999 m² and more than 1000 m² has grown by 267% and 371% respectively and reached almost 959 shops with the area more than 400 m² in comparison with only 238 in the year 1999. When one speaks about the sales area of the grocery shops, one should remember that rural trade companies own the shops with sales area rarely more than 100 m². For example, besides more than 450 shops of trade cooperation AIBE included in cooperative, there are only two with the sales area more than 400 m², 93 - with the area more than 100 m², and more than 350 shops are with the area less than 100 m²; of which 165 are with the area 50 m² and less. Similarly, the structure is typical also for other trade cooperatives like LaTS and Balstor with shops Vesko that are mostly located in rural areas. Analysing the geographical situation of the shops, totally 72% of shops of the cooperative AIBE are situated outside the biggest towns of Latvia like Riga, Bauska, Liepaja, and Ventspils. Some of them are situated in places with the number of inhabitants even less like Aglona, Nereta, Skriveri, and other places.

In the year 2010, more than 80% of retail grocery turnover was generated by retail chains. Almost 50% of turnover belongs to two companies. Maxima Latvija SIA runs several hypermarkets, supermarkets, and numerous convenience stores and it belongs to Lithuanian company UAB Maxima Groupe. Table 1 presents the shares of

Table 1

Share of turnover, grocery retail by brand, centralised chains

Brand	Company name	2010	Cum. share 2010
Maxima	UAB Maxima Groupe	24.3%	24%
Rimi, Supernetto	Royal Ahold NV	23.9%	48%
IKI, Cento	Coopernic	4.5%	53%
Mego	Mego SIA	2.3%	55%
Stockmann	Stockmann Oyj Abp	1.7%	57%
Sky	Skai Baltija SIA	1.3%	58%
Beta	Zemnieciba SIA	0.9%	59%

Source: author's calculations based on GMID database, Lursoft

Table 2

Share of turnover, grocery retail by brand, united co-operatives

Brand	Company name	2010	Cum. share 2010
LaTS	Latvijas Tirgotaju Savieniba SIA	6.6%	6.6%
Aibe	Aibe Baltic UAB	5.3%	11.9%
Elvi	Elvi Grupa SIA	4.7%	16.6%
Tops!	Iepirkumu Grupa SIA	4.5%	21.1%
Balstor	Baltstor SIA	2.3%	23.4%

Source: author's calculations based on GMID database, Lursoft

major centralised retail chains with shops concentrated in the biggest towns of Latvia.

Nevertheless most of the shops of main retail chains are situated in the biggest towns; rural shops still suffer from the competition of biggest retail chains because consumers more and more choose to make purchases in a bigger supermarket of the closest larger and not in the neighbourhood small rural shop. There is no purposeful government support for traditional grocery retailing, so players apply different strategies to attract consumers themselves. Modern grocery retailers are much more prevalent in Latvia. In 2010, traditional grocery retailers, which include independent small grocers, food/drink/tobacco specialists and other grocery retailers, accounted for just 6% of total sales of grocery retailers (Euromonitor International, 2011, January).

In order to resist increasing competition from supermarkets, supermarkets, and discounters, small grocery retailers unite in trade co-operatives. Trade co-operatives provide several advantages to the partners: united recognised branding, united logistic system, marketing and advertising activities, a website with all addresses listed, and financial support in case of temporary pressure for money. Table 2 presents the data on turnover share of trade cooperatives on retail grocery market.

Mego in addition to its 57 own supermarkets has organised a cooperative and joined more than 370 small shops under the brand Vesko. The co-operative of Latvian retailers AIBE joined independent retailers in union starting from the year 1999. In 2007, some of the shops segregated and organised an independent co-operative under the brand LaTS operated by Latvijas Tirgotaju Savieniba SIA. Iepirkumu grupa SIA also organised

a co-operative besides its 16 companies and joined 141 shops under the brand TOP! with the market share of 4.5% in 2010. In 2010, Elvi Grupa SIA faced insolvency and, to run its network of Elvi supermarkets, another company was created - Partikas Tirdzniecibas Apvieniba SIA. This new company operates now on a franchise basis convenience stores under the Elvi brand name with 4.7% of the market share. Totally, there are five main groups, which have joined on the co-operation principle and unite small retailers. Together they share 23.4% of turnover between 500 different legal companies with almost 1500 shops.

Wholesale companies operating in trade industry is the main supply chain of products for Grocery retail market. In an interview, a senior employee in a major retail chain estimated that more than 70% of the suppliers of major Latvian retail chains are categorised as Latvian SMEs generating less than 50% of the retailer's total turnover, and less than 10% are categorised as international and/or global brands that provide more than 50% of turnover (Fel, 2008). More than 85% of goods in grocery retail, retailers buy from local suppliers and producers of wholesalers of goods.

However, as it was already presented, the number of wholesalers decreases and one observes a concentration on the wholesale grocery market. While the biggest retail chains start to import the goods themselves and produce the private brands, they are also definitely strong to require the necessary purchasing prices from wholesalers. Small rural retailers do not have such power and usually should buy the goods at higher prices; at the same time, they still should compete with biggest retailers for sales pricing policy. Such situation minimises the profit and does not allow having additional expenses

that usually result in the fact that the owner of rural shop is at the same time the sales staff, head of the shop, merchandiser, and bookkeeper in one person.

3. Interpretation of the research results

In order to investigate more precisely the real attitude of management and the readiness to implement in day-to-day business relations basic concepts of *Category management* approach, the author organised a survey to study the readiness of trade companies to implement the author's proposed methodology as a basic tool to increase the competitiveness of an enterprise.

The wholesale enterprise managers and managers of retail companies were invited to participate in a survey. Thus, survey invitations were sent by e-mail and additionally 157 telephone calls to the managers of the companies from the list of biggest wholesalers and retailers were made. Finally, 179 replies were received and ready for the analysis.

The survey intended to explore, identify, and analyse the organisational management of Latvian trade companies – retailers and wholesalers – to clarify the differences between them and to test the validity of hypotheses.

1. The number of wholesale companies decreases; at the same time, the turnover increases. According to the trend, only several strongest and biggest wholesalers will stay and control the market in the near future, thus, dictating the rules for smallest retailers leading to the destruction of small retail business.
2. Wholesalers are more ready to work with retailers with higher market share and they do not wish to make investments in cooperation with small retailers.
3. Contemporary executives lack knowledge on the available management tools.
4. *Category management* is an important management tool for the performance of trade organisation.
5. The success for the implementation of *Category management* principles depends on the compliance of quality management principles.
6. The opportunity of trade organisation to strengthen and develop the desired position on the market and enhance the performance of organisation in addition to the usage of *Category management* depends on the level of quality management development in the organisation.

First, the trends in trade industry were approved by already presented previous industry analyses. Second, by analysing the survey results, the author concludes that almost half of the wholesalers approved work with Rimi and Maxima retail chains that together generate almost half of the retail turnover. Less than one fifth of wholesalers have cooperation with Stockman and Sky. This fact reflects the wholesalers' attitude and readiness to work with smaller retail chains. Irrespective that IKI, Elvi, AIBE, and LaTS have almost similar market shares, the author concludes that wholesalers are more ready to work with IKI and Elvi that have a centralised order system and product assortment agreed for all shops in the contract and they do not take into consideration small shops like AIBE and LaTS.

Summarising the opinions of general managers and heads of departments of trade organisations both from

wholesaler and retailer representatives gathered from personal interviews and combining with the survey results, the author concludes that wholesalers are more ready to work with centralised retail chains and deliver the goods to shops located in biggest towns. The higher the market share of retailer, the more the wholesaler is ready to work with this retailer. The work with small retailers located in rural areas is not attractive for the wholesalers and it brings more expenses than profit because of much higher logistics expenses and the necessity to operate with a big number of sales agents in order to reach these shops. In this situation, wholesalers propose better purchasing conditions for the biggest retail chains and worse for small and single retailers. As a result, small retailers receive the products with higher prices and they are not able to propose good prices for consumers and loose the competitiveness.

Third, the survey was held for the managers of retail and wholesale organisations that helped define the awareness of managers on the management tools that promote to increase the competitiveness of organisation. The awareness of 23 different management tools were tested within the research. The answers of suppliers (wholesalers) and retailers were compared. The results highlighted that the *Category management* technique is a helpful management tool to increase the competitiveness of wholesale enterprise. According to the survey results, 36% of retailers and 57% of wholesalers are satisfied with the use of *Category management*. The percentage of those who regularly or sometimes use the *Category management* principles was higher in increasing the number of employees than those who did not use the tool.

Rather small satisfaction between retailers is explained by the fact that only the biggest retailers answered that they were satisfied with the tools. Most of the retailers simply did not have any practice of *Category management* implementation. Only 8% were not satisfied with the tool, while 46% simply did not know whether they use the *Category management* approach.

It is suggested by the author for small trade enterprises to follow the collaboration process between the wholesaler and retailer following the *Category management* technique and implementing it as a retailer/supplier process of managing categories as strategic business units, producing enhanced business results by focusing on delivering consumer value as it is proposed by former researches. It is recommended for retailers to pay a special attention to *Category management* process as managing strategic business units, thus aiming to increase the profit of a whole category.

The statistical method T-test for independent samples was used to test if the usage of TQM and *Category management* tools in organisations is dependent on the number of employees and turnover of organisation. The perceived statistical test allows assuming that the highest break point for the existence of difference of relative frequency for the usage of TQM in organisations (organisations with higher number of employees use the tool relatively more frequently) is 100 employees. At the same time, testing frequency of *Category management* tool usage in organisations, it was found that it is only 20 employees. Similarly, the dependence on turnover was tested and brought to conclusions that the highest

break point turnover level while the difference of relative frequency of TQM usage exists was LVL 1 000 000. Relative frequency of usage of *Category management* tool in organisations is LVL 100 000.

It is obvious that coordination of processes in organisation increasing the number of employees and turnover requires procedures that are more difficult. The most important peculiarity of TQM as it was already mentioned - is continuous improvement as a result of focus on quality. Hence, one should conclude that for small rural trade enterprise it is completely enough to use the *Category management* technique until the breakeven point of development up to 100 employees. Only in case the organisation has grown up to more than 100 employees or annual turnover over LVL 1 000 000, the *Category management* technique should be complimented by TQM implementation in the organisation.

Conclusions, proposals, recommendations

The following paper reflects the results of the author's research aiming to pay a specific attention on the importance of the use of *Category management* approach managing a small rural trade enterprise. The executives of trade enterprises have a possibility to choose from a variety of different management tools. Aiming to make the choice between huge ranges of available management tools, the author discussed the effectiveness of *Category management* as a basic management tool for trade enterprise management and reason of choice of it between other management tools available.

The authors has made following conclusions.

1. The basic condition that requires enhancing the competitiveness of organisation was defined. The market situation brings to the continuous decrease of wholesale companies and tough concentration on a wholesale market. According to the trend only several strongest and biggest wholesalers will stay and control the market in the near future, thus, dictating the rules for smallest retailers leading to the destruction of small retail business.
2. A thorough industry analysis showed that the implementation of *Category management* was more required for management of rural trade enterprises than already well-developed management processes of biggest retail chains, which have already conquered the trade industry in the biggest towns. Concentration on the trade market of strong retail chains and biggest wholesalers lead to lose the competitiveness of smallest wholesalers and retailers.
3. Contemporary executives of small rural trade enterprises lack knowledge on the available management tools for the competitiveness enhancement. The management of rural trade enterprises does not have sufficient knowledge on management tools and potential implementation possibilities.
4. Wholesalers are more ready to work with retailers with higher market share and they do not wish to make investments in cooperation with small rural retailers due to high logistics and administration expenses. This fact brings to ineffective coordination

of interaction of management of wholesale and retail trade enterprises in the process of *Category management*.

5. *Category management* is an important management tool that enhances the competitiveness of organisation. While *Category management* is already familiar for biggest retail market players, the tool should be used especially by rural retailers' management. It is recommended for retailers to pay a special attention to *Category management* process as managing strategic business units, thus aiming to increase the profit of a whole category.
6. The research results showed that the success for the implementation of *Category management* principles depends on the compliance of quality management principles. The contribution of TQM became topical only for companies with a number of workers more than 100 and annual turnover over LVL 1 000 000 that is not particularly familiar for rural trade enterprises.

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Role of Land Resources in the Development of the Market of Renewable Energy Sources of Agricultural Origin in Latvia

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Abstract. To comply with the requirements of the EU Directive 2009/28/EC for using renewable energy sources (RES) in Latvia, the agricultural industry has to become a significant supplier of resources to energy producers and consumers. An increase in the area sown with maize is forecasted by exploiting the unused agricultural land to expand biogas production. The agricultural area has decreased by 2% in Latvia over the recent decade, and 16% of its total agricultural area are not exploited anymore. Thus, agricultural land resources are available to produce intensively RES for biogas production in the future and to achieve the target set for renewables by 2020, so that the total capacity of biogas facilities reaches 61 MW. In 2011, totally 24 new biogas facilities with a total capacity of 29.38 MW started operating. Nevertheless, the Ministry of Economics of the Republic of Latvia has granted 59 licences to purchase electricity produced from biogas in compliance with the renewable power purchase obligation. It means that raw materials are needed for newly established biogas facilities.

Key words: RES (renewable energy sources), land resources, biogas, biomass, market.

JEL code: C88, D29, O38, Q28, Q42, R11

Introduction

According to Latvia's economic development forecasts, the agricultural industry will gradually grow. The Ministry of Economics of the Republic of Latvia (2011) forecasts that positive growth rates are expected for almost all industries of the national economy, whereas export-oriented industries including agriculture, will grow faster than the national economy on average. The economic growth scenarios developed by the Ministry of Economics for a medium term (until 2016) indicate that Latvia's Gross Domestic Product might increase by 2.7-4.8% a year (depending on the scenario), while primary industries including agriculture are expected to grow at an average rate within a range of 3.5-4.1% a year.

In forecasting the economic growth, it is assumed that the agricultural sector would produce traditional agricultural products. Yet, the foundation of biogas facilities started in Latvian rural areas in 2009. It means that in the territories where biogas facilities were constructed or will be constructed, energy crops for biogas production would be grown on agricultural land, thus, competing with the production of traditional agricultural commodities for food. According to I.Pilvere, V.Tetere, I.Upite (2011), by developing biogas production, "stable income from selling electrical energy, beneficial effect in agriculture and diversification of income sources are gained from the results of implemented projects" as well they mentioned that "there is a possibility to use agricultural production waste". B.Kniuksta, J.Caplikas (2011) conclude that "agriculture based bioenergy development has direct and indirect effects in economic, social, and environmental fields". Yet, K.Naglis-Liepa, J.Leikucs, M.Pelse (2010) emphasise that "the EU energy policy is directed towards promotion of renewable energy proportion in total energy balance and Latvia's ambitious aim is to achieve 40% of renewable energy in the total primary energy balance in the year 2010". Therefore, the research on

how to balance the possible development of various industries in rural areas has to be conducted. Basically, it is necessary to analyse the use of agricultural land resources to determine the availability of these resources for growing non-food crops. Presently, agricultural land is a significant resource in Latvia, which is used not only "for agricultural production but it is also a work object and a work tool, and it is substantial to ensure efficient land use" (Pilvere, 2008). B.Vazonis (2010) emphasise that "beyond supplying food and fibre, agricultural activity can also be instrumental in forming the landscape, providing natural resources and preserving biodiversity". Similar ideas belong to scientists such as B.L. Turner, E.F.Lambin, A. Reenberg (2007), S.Wirsenius, C.Azar, G.Berndes (2010), and A. Nikolaou, M. Remrova, I.Jeliazkov (2003). Qualitative indicators of using agricultural land point at insufficiently intensive agricultural production in Latvia. A small share of agricultural area available in Latvia is used for growing energy crops. Growing energy crops in the territories around biogas development centres will improve quantitative indicators of using land resources and is a prerequisite for a market of RES of agricultural origin to arise there. Yet, Latvia's geographic situation and favourable climate are good prerequisites for the industries of agriculture and forestry to provide the necessary RES.

Therefore, the **research aim** is to analyse agricultural land resources in Latvia to determine their availability for biogas production. The **research object** is agricultural land resources in the territories of biogas development centres in Latvia, while the **research subject**, which will assist in identifying causes of the problem researched, is the market of RES in Latvia.

Research hypothesis: participants of the energy market in Latvia are prepared to achieve a 40% share of the RES in gross domestic energy consumption by the year 2020.

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Table 1

Land uses in Latvia in 1935-2010, thou. ha

No.	Indicators of land use	1935	1980	1990	2000	2010	2010 against 2000, %	2010 against 1935, %
1.	Total area	6579	6459	6459	6459	6459	100	98
2.	Total agricultural area	3679	2581	2567	2485	2430	98	66
3.	Forests	1742	2729	2803	2852	2955	104	170
4.	Other land (occupied by waters, roads, buildings)	1158	1149	1089	1122	1074	96	93

Source: authors' calculations based on the RSS data, 2011 and SLS, 2011

Research tasks:

- 1) to characterise the agricultural land resources and their potential availability to produce RES of agricultural origin in Latvia;
- 2) to determine the necessary quantity of biomass to produce RES of agricultural origin according to the strategic target set;
- 3) to analyse the availability of agricultural land in the regions of biogas production;
- 4) to forecast the development of RES of agricultural origin.

The present research was performed in 2011, and to achieve the research aim, information available by the Ministry of Economics of the Republic of Latvia and the Ministry of Environmental Protection and Regional Development of the Republic of Latvia (before 2010, the Ministry of Regional Development and Local Government), legal enactments related to production and sales of RES, strategic planning documents, Central Statistical Bureau data, a database of the Rural Support Service (hereinafter RSS), and research papers of other authors were used in the research. The following methods were employed in the research: analysis and synthesis, the monographic, abstract, logical, and graphical methods, a method of sociological studies (documentary analysis), and statistical methods (full statistical observation and information summarisation).

Research results and discussion

1. Availability of agricultural land to produce renewable energy sources of agricultural origin

The industries of agriculture and forestry manage 83% of land resources available in the territory of Latvia. Agricultural land occupies approximately 37.6%, while forestland – 45.75% of the country's rural areas. The economic growth has promoted changes in the area managed by the industries of agriculture and forestry in Latvia. Since 1930, the forest area has almost doubled in Latvia from 24% in 1930 to 45.7% in 2010. An especially significant increase in the forest area was observed during the Soviet period (Krastins, 2001). Its reasons were as follows: nationalisation of land, establishment of large collective and state farms, and due to inability to farm the entire agricultural area, part of it was transformed into fallow land and afforested. A factor promoting an increase in the forest area was the Soviet period's purposeful patriotic leaders of the forest

industry who were able to use their influence on political circles. The existing areas were effectively managed and new areas were afforested (Krastins, 2001). These processes continue nowadays as well. Latvia is presently one of the most wooded countries in Europe. An analysis of data showed that the forest area tended to increase. It is ensured by the fast growth of the forest industry and its significant role in supplying RES to energy producers and consumers on the Latvian and world market.

Changes in the agricultural area also characterise the development of agricultural industries. The exploitation of the entire agricultural area indicates on the development of the agricultural sector. Its development promotes the expansion of businesses and a more complete use of resources endowed by the nature. An unused agricultural area indicates that traditional agriculture is not able to produce sufficient income stimulating those engaged in agriculture to expand their business activities.

The previous trend in Latvia during the recent century, in general, indicated a decrease in the agricultural area and an increase in the unused agricultural area. However, the agricultural area (well-farmed area) has even slightly increased over the recent 10 years (2000-2010). The sown area rose in the period of 2003-2006 (by 26%), and afterwards a slight decrease was observed from 2006 to 2010. The areas of meadows and pastures were comparatively stable over the recent decade.

In the period of 2000-2010, 4% of agricultural land was transformed into land for construction.

Part of agricultural land is not presently used for agricultural production. In 2010, it accounted for 16% and totalled to 368.9 thou. ha.

The Basic Guidelines of Land Policy for 2008-2014 elaborated by the Ministry of Environmental Protection and Regional Development of the Republic of Latvia include medium-term and long-term scenarios for land use in Latvia. The scenarios were worked out by taking into account trends in land policy and economic development in Latvia as well as those in land use in Europe. According to an assessment of the development trends, demand for agricultural land will increase over the near ten years, which would be caused by the increasing demand for food products. Therefore, the unused agricultural area has to decline. Thus, certain areas of agricultural land are temporarily unused. Energy crops will be grown on a part of the agricultural area, a part of less fertile agricultural area will remain unused and

Table 2

Unused agricultural land in Latvia in 2010

No.	Land status	Area		Cadastral units	
		ha	%	number	%
1.	Surveyed land	2 352159	100	326 309	100.00
2.	Cultivated land	1 983260	84.3	259 696	79.6
3.	Unused land:	368 900	15.7	66 613	20.4
4.	Uncultivated land	316 341	13.5	56 571	17.4
5.	Overgrown land	49 710	2.1	9 300	2.8
6.	Land for construction	2 849	0.1	742	0.2

Source: authors' calculations based on the RSS data, 2011

overgrown to maintain natural landscapes (Zemkopības ministrija..., 2010). Therefore, a significant decrease in the agricultural area is not expected (RAPLM..., 2008).

According to a study of the Latvian State Institute of Agrarian Economics, the total arable area could change within a range +/- 4% compared with 2006 in the period until 2020. After comparing the forecast for the year 2020 and the real data for 2010 (CSB), an increase of 7% in the total arable area is expected (Eiropas Savienības lauksaimniecības un lauku attīstības..., 2008).

Based on the analysis of agricultural land resources, one can assure that these resources are not fully and well exploited in Latvia. Both intensive and extensive development possibilities for producing RES of agricultural origin and satisfying this market's demand may be explicitly observed.

2. Necessary quantity of biomass of agricultural origin to produce renewable energy sources according to the target set

Until 2020, according to various information sources, an 11-13% increase in the gross domestic energy consumption compared with 2008 is forecasted for Latvia, and it might reach an amount within a range of 55 780 GWh (Latvijas Republikas Rīcība atjaunojamas..., 2010) – 56 944 GWh (Ekonomikas ministrija..., 2009). Increases in electricity consumption and fuel consumption by vehicles are mostly expected (Latvijas Republikas Rīcība atjaunojamas..., 2010). According to a report (Latvijas Republikas regulārais..., 2011), 5.06 GWh of electricity produced from RES was sold to the public company in 2010. In the same year, the following quantities were produced: 2139.7 thou. t of hay of perennial grasses, green forage, and silage; 209.0 thou. t of maize for silage and green forage; 7.7 thou. t of grains; and 1.27 thou. t of rape – biomass of agricultural origin that could be used for biogas production.

In accordance with the document Basic Guidelines for the Development of the Power Industry 2007-2016 (2006), which is in force, it was planned to construct biogas cogeneration plants with an electrical capacity of 61 MW in Latvia in 2010, while in 2020 their total capacity would have to reach 61 MW. A quantity of biomass needed for these biogas facilities was calculated according to the methodological instructions (Kalnins A. 2009), in which several models with a consumption of 300 (capacity

1 MW), 550 (capacity 2 MW), and 800 (capacity 3 MW) tons of biomass per day were available and it was based on a study *Possibilities of Biogas Production from Various Kinds of Biomass on a Farm* (Skudra A., Adamovics A., 2011) that was conducted on Latvian farms in 2011. Based on an assumption that on average an electrical capacity of biogas plant is up to 1 MW and electricity is produced for 330 days a year, the necessary quantity of biomass amounted to 550 thou. t a year. To provide a continuous operation of bioreactors with a capacity of 61 MW, approximately 1.5% of the available potential of biomass obtained from by-products in agricultural production has to be exploited. A total quantity of by-products in agricultural production, according to the calculations (Atjaunojamo enerģijas resursu..., 2006), consists of: 20 mln. m³ of crop farming residues and green forage; 3.2 mln. m³ of cattle manure; 20 mln. m³ of pig manure; and 21.6 mln. m³ of poultry manure a year.

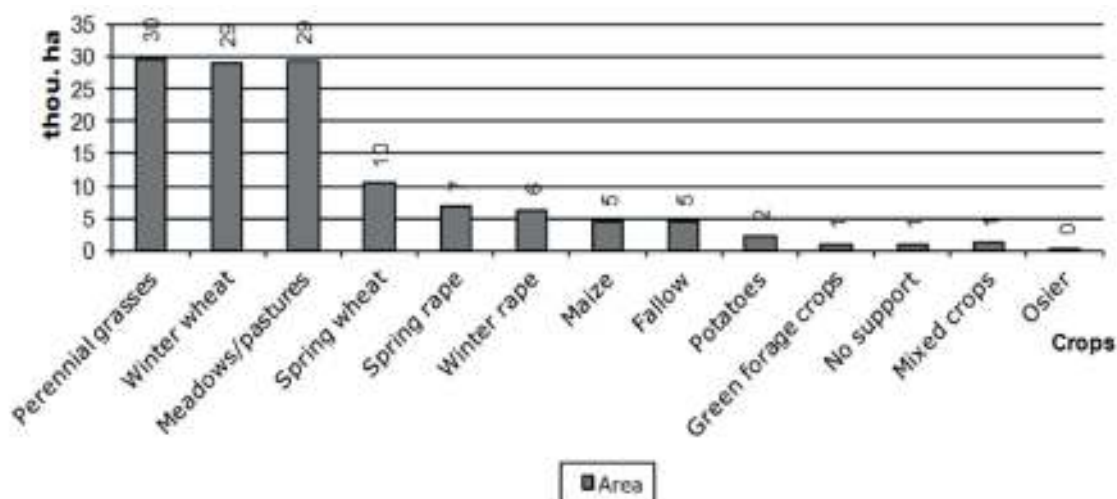
By developing a cooperation model, based on demand and supply, for the market of RES of agricultural origin in Latvia, it is possible to achieve a higher share of RES in the gross domestic energy consumption. The target set by Latvia may be achieved from the viewpoint of availability of resources. The achievement of the target does not contradict with the uses of agricultural land: food production or growing energy crops.

3. Availability of agricultural land in the territory of biogas thermoelectric power plants

The present development of agricultural industries is assessed based on qualitative indicators of land resources. In Zemgale, agricultural land is mostly used for growing grains and energy crops, while in Vidzeme, it is used for meadows and pastures, which are a feed basis for dairy farming. Owing to active production, funds are accumulated in these regions. These funds provide the implementation of new business projects based on available agricultural resources.

The growth potential of Latvia's agricultural industry is related to:

- increasing the agricultural sector's competitiveness by modernising obsolete equipment and buildings (special attention has to be paid to longer-term investments), promoting the engagement of young age farmers in agricultural business, developing



Source: authors' calculations based on the RSS data, 2011

Fig. 1. Sown areas in agricultural territories near biogas TEPPs in 2011

professional skills of those employed in agriculture, promoting cooperation among agricultural producers, and by fostering the introduction of modern technologies for processing agricultural commodities and for logistics and sales chains;

- developing market-oriented production units contributing to an increase in value added in the agricultural sector along with an increase in the overall efficiency in the agricultural industry;
- engagement of unused agricultural land in agricultural business.

The number of biogas facilities sharply increased in 2011, and 24 biogas thermoelectric power plants (hereinafter TEPP) with a total capacity of 29.38 MW were operating at the end of the year. The Ministry of Economics of the Republic of Latvia has granted licences to purchase electricity, in compliance with the renewable power purchase obligation, to 59 biogas TEPPs. The construction of biogas TEPP develops in agriculturally the most active regions of Latvia. In terms of territorial distribution, the biogas TEPP are located in the municipalities of Jelgava, Dobele, Ilukste, Burtneki, Madona, Auce, Nica, Limbazi, Vilani, Vainode, and Iecava. In terms of regional distribution, 9 such facilities are in Zemgale (7.9 MW), 5 - in Vidzeme (6.87 MW), 4 - in Kurzeme (4.65 MW), 3 - in Latgale (2.2 MW), and 3 - in Riga (7.76 MW) planning region.

Agricultural land available in municipalities is exploited to provide the operation of biogas TEPPs. To determine the area of agricultural land used for biogas TEPP, the authors performed calculations based on RSS information on sown areas of crops in the territories located next to biogas TEPPs in 2011.

Maize is mostly grown for biogas production. Yields of maize green mass are high, and it provides good parameters for biogas production. Experiments are conducted on the training and research farm "Vecauce" of Latvia University of Agriculture to determine the most suitable varieties of hybrid maize for Latvian conditions. The research results (Bartusevics, Gaile,

2009) showed that yields of maize green mass ranged within 43-61 t ha⁻¹.

In 2010, totally 405 thou. t of maize green mass were produced for biogas TEPPs in the territories of municipalities located near these facilities. In the future, increasing the sown area of maize will be needed to provide the necessary quantity of maize green mass to biogas TEPP. It is useful to engage unused agricultural land in the sown area.

After analysing data on exploiting agricultural land, significant differences are observed among municipalities even within one planning region. In Jelgava municipality, which belongs to Zemgale planning region, 4% of agricultural land was not farmed, while in Iecava municipality, it reached 32%, amounting to a total of 7.4 thou. ha of unused agricultural land. Constructing biogas TEPP will improve the qualitative indicators of using agricultural land. In these regions, farmers have a possibility to diversify the structure of crops grown, thus, becoming resource suppliers to biogas facilities.

The purchase obligation at a certain price is based on a long-term contract to diversify agricultural production risks related to price fluctuations, especially for grain crops. The cooperation model established in such a way is a stable prerequisite for the market of RES of agricultural origin based on supply and demand. In the beginning of 2011, additionally approximately 800 thou. t of maize green mass may be produced by farming unutilised agricultural area in the analysed municipalities.

4. Use of land resources for more efficient production of energy sources of agricultural origin

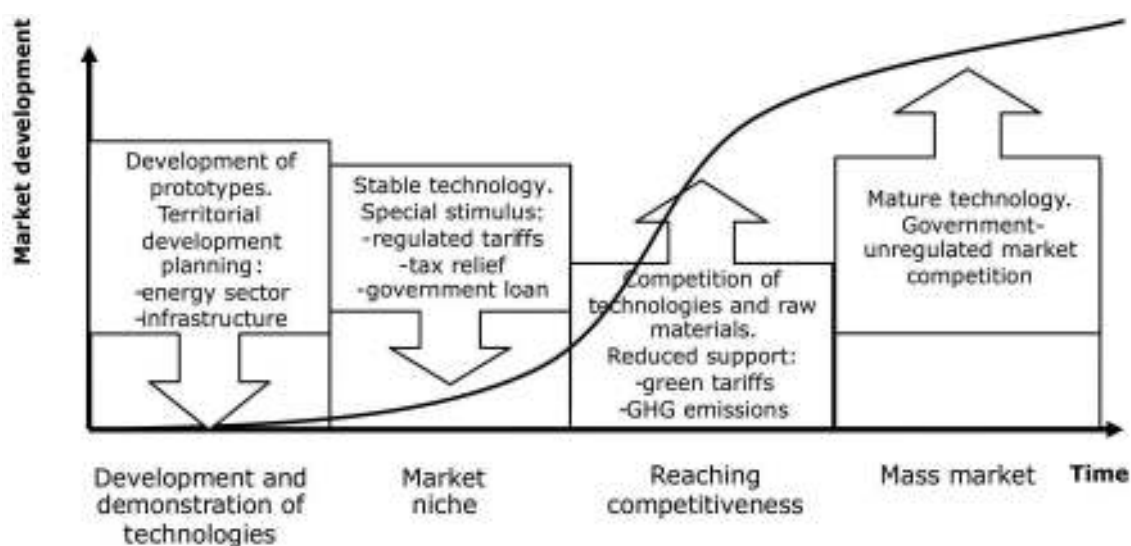
Latvia will integrate into the common EU energy market in the near future. To be able to compete with other EU Member States on the energy market and, at the same time, to solve energy security problems of the national level, the country's action plan is simple: the share and output of domestic energy resources have to exceed their consumption. An efficient use of land resources is a significant factor in implementing this

Table 3

Low quality use of agricultural land in the municipalities of biogas development centres in Latvia in 2010

No.	Municipality	Agricultural area, ha	Farmed agricultural land		Unutilised agricultural area				
			ha	%	ha	%	uncultivated ha	overgrown ha	buildings ha
1.	Jelgava	76979	73879	96	3100	4	2837	254	10
2.	Vilani	15096	14469	96	627	4	527	95	5
3.	Dobele	51018	48053	94	2966	6	2593	370	3
4.	Ilukste	29577	27443	93	2134	7	2099	21	14
5.	Burtnieki	28408	25307	89	3101	11	2519	561	21
6.	Madona	81426	71755	88	9671	12	9127	496	47
7.	Auce	26221	23042	88	3179	12	2680	443	56
8.	Nica	11316	9610	85	1707	15	1588	115	3
9.	Limbazi	39790	31355	79	8435	21	7954	459	22
10.	Vainode	11094	8625	78	2469	22	1603	846	19
11.	Iecava	13629	9330	68	4299	32	3591	693	15
12.	Total	292479	342868	86	41688	14	36591	4258	211

Source: authors' calculations based on the RSS data, 2011



Source: authors' construction

Fig. 2. Development stages of RES market of agricultural origin

action plan. Large energy consumption by households and in the public and service sectors, and comparatively small energy consumption in the sectors of agriculture and manufacturing are specific to the structure of energy consumers in Latvia.

Long-term development planning and the elaboration of a strategy ensure RES of agricultural origin are produced according to the territorial location of energy consumers.

Constructing biogas TEPP in municipalities provides an opportunity to design a regional energy supply development plan and integrate it in the territorial plan of a municipality or town. It is possible to forecast the development of the country's entire

energy sector based on the principle of integration. A supply network of RES of agricultural origin has to be established in the same way as a network of natural gas. It is possible to plan and forecast the quantities of resources produced based on the available resources of agricultural land.

A research was conducted and scenarios were worked out (ES lauksaimniecības un lauku..., 2008) for using agricultural land resources. Possibilities for promoting the development of the market of RES by using government support and market regulation were presented in a research paper of Denina and Zvanitajs (2010). Other authors point to a need to establish a regional energy supply system by integrating RES of agricultural origin in

it. In general, the market of RES of agricultural origin in Latvia is at an early stage of development.

The present research will be extended by a long-term development forecast based on system dynamics and its analysis. Possibilities to optimise the process of production will be determined by modelling a necessary composition of substrates and supply channels for biogas TEPP. It is important to integrate the production of RES of agricultural origin with territorial development planning, as exploiting RES is related to constructing various infrastructure objects. Interactions of environmental, social, and economic processes will be modelled for biogas development centres in further research, which would ensure sustainable territorial development.

Conclusions, proposals, recommendations

1. Structural changes in Latvia's national economy promoted a change in the area of land exploited in the industries of agriculture and forestry. The share of forest area has almost doubled in Latvia since 1930 – from 24 to 45.7% in 2010.
2. The total of utilised agricultural area 369 thou. ha or 16% were not exploited in 2010.
3. In 2011, totally 24 biogas thermoelectric power plants with a total capacity of 31.35 MW operated in Latvia, establishing territorial biogas development centres.
4. The areas sown with maize are still small in the municipalities of biogas development, occupying 3% of the total agricultural area in 2011.
5. Various kinds of biomass of agricultural origin are needed for qualitative and economically feasible biogas development. Growing various energy crops for biogas TEPP in their nearest territories will shape the regional market of RES of agricultural origin based on demand and supply.

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Reasons of Firm Failures: Example of Estonian Agriculture, Forestry and Fishing Industries in 2002-2009

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Abstract. In the previous decades, a lot of research has been conducted on different topics of firm failures but a relatively underdeveloped research domain is failure reasons, especially in the context of primary sector firms. The main objective of current paper is to find out the failure reasons of bankrupt firms in Estonian agriculture, forestry, and fishery sector. In general, 17 different failure reasons are detected based on Estonian court judgments from 2002 to 2009. A decrease in demand, some unexpected event, and unprofitable principal activities are among the most frequent failure reasons. The average number of reasons in bankruptcy case is two. Fitting with modern failure theories, the most common is the case where external and internal causes are simultaneously present. The hypothesis that the sources of failure reason (i.e. emerging from internal or external environment of firm) vary through firms from different bankruptcy years or through firms from different industries is not supported.

Key words: firm failure, failure reasons, bankruptcy, primary sector.

JEL code: G33, Q12

Introduction

The topic of firm failure has attracted the interest of researchers for a long time and several different domains have been studied ranging from pre- to post-failure events. Among one of the most exploited topics is forecasting firm failure using financial data, whereas less attention has been devoted to causes of failure. The main reason for such tendency could be the fact that relevant information is not available in aggregate form and data should be obtained through case studies. Still, studying failure causes of firms from different industries plays an important role, as among others the understanding of firms' decline path helps creating better failure warning systems and increasing firm survival.

The research object of current paper is Estonian agriculture, forestry and fishery sector (NACE Section A), which plays an important role in rural economy. In Estonian economy as a whole, the sector has less importance, since in recent years its share of GDP and total sales of firms has fluctuated between 2% and 3% according to the Statistics Estonia (2011). The importance of mentioned sector in employment has been larger, accounting for more than 4% of the workforce in recent years according to the Statistics Estonia (2011). Besides given statistical figures, it shall be noted that the specific sector has lengthy traditions in Estonia, and is well known for its achievements in the neighbouring countries. Previously given aspect makes the chosen sector as an interesting research object for studying firm failures.

The main objective of current paper is to find out the failure reasons of bankrupt firms in Estonian agriculture, forestry, and fishery sector. Several research questions have to be answered to achieve the objective of paper. First, it is essential to outline the main findings from available failure literature for the current study. Second, it is necessary to collect data on the failure reasons of Estonian agriculture, forestry, and fishery sector firms.

Third, it is necessary to apply proper framework to attribute different reasons to either internal or external category. Besides the main objective of paper, it will also study whether firm failure reasons have changed through the years 2002-2009 and whether failure reasons vary through firms by different size groups. The paper has been structured following the previously given research questions and a separate subsection has been devoted each of the questions.

Research results and discussion

1. Review of literature on firm failure reasons

Decades of research have brought multifaceted results to literature considering reasons of failure. Different theoretical approaches have assigned varying importance to internal and external forces in determining firm failure (e.g. Daily C.M., 1994; Mellahi K. and Wilkinson A., 2004). Although, elderly theories have emphasised either internal or external reasons in determining firm decline, modern theories have established that both factors are equally important. More specifically, firm failure is seen as a combination of firm's general environment factors, immediate environment factors, management or entrepreneur characteristics, corporate policy, and firm's characteristics (De Prijcker S. and Ooghe H., 2008). Still, it is evident that dependent on specific situation, different factors can have varying role and importance. An approach offered by Boyle R.D. and Desai H.B. (1991) establishes a matrix of four different types of failure factors. Namely, factors are divided between their source (external or internal) and management response needed (administrative or strategic). When distribution between internal and external reasons is quite logical (i.e. whether an event is under the management control or not), then in case of response given, classification is more subjective. Additional aspect to address is the definition of failure.

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Table 1

Bankruptcy declaration years of cases in the current study

Bankruptcy declaration year	Number of cases
2002	7
2003	10
2004	7
2005	4
2006	6
2007	5
2008	4
2009	7

Source: author's calculations based on the KIS and KOLA data

Although many studies have used samples of bankrupt firms for empirical analysis, which is also followed in the current paper, various studies (e.g. Cochran A.B., 1981) outline multitude of different terms used to describe firm failure.

Despite the abundance of studies on various firm failure topics, the list of papers conducting empirical analysis of failure reasons is not long. Despite most of such research has been conducted based on the bankrupt firms' data as noted previously, the source of information is in many cases diverged, originating either from managers or trustees. Beaver G. (2003) noted that failure studies showed remarkable discrepancies between owner-manager perceptions of failure reasons and the interpretation of same causes by researchers. Main results from some of the well-known studies will be synthesised as follows.

Hall G. (1992) used seven groups of owners' perceptions of failure: operational management, strategic, environmental, personal technological, marketing, and rises in different variables. The study concluded that in about half of the cases the bankruptcy reason was operational management, more specifically the dominant categories were undercapitalisation and poor management of debt (respectively 235 and 111 out of 857 cases). The UK Insolvency Service study from 2005 concluded that in over 75% of cases, the main primary causes of failure for companies in compulsory liquidation was loss of market, failure to deal with tax affairs, and other management failures. Arditi D. *et al.* (2000) found that over 80% of the failures in the US construction industries were caused by five factors, namely insufficient profit (26.71%), industry weakness (22.73%), heavy operating expenses (17.80%), insufficient capital (8.29%), and burdensome institutional debt (5.93%). Baldwin J. *et al.* (1997) found on the example of large set of Canadian firms that about half of young firms went into bankrupt primarily due to factors beyond their control, namely, economic downturn and increases in competition, while the other half primarily due to the basic internal weaknesses. It was also noted in Baldwin J. *et al.* (1997) that even in the case of bankruptcies that originated from external events, internal weaknesses were important factors contributing to failure. Novak B. and Sajter D. (2007) questioned 24 trustees and 17 judges in Croatia, who perceived the following important bankruptcy reasons:

general environment (undeveloped market, loss of market after gaining independence, technological backwardness, lack of governmental development strategy, effects of privatisation, and war), immediate environment (non-payment as normal behaviour), management (low quality, individual interests overrun firm's, deception, no personal liability for firm's debts), corporate policy (low salaries and many employees, unresolved human relations, bad planning, harmful contracts, avoidance of due obligations and weak financial discipline). Lussier R.N. and Pfeifer S. (2001) extensive study on the previous failure literature found the most commonly cited failure reasons based on the US data to be undercapitalisation, poor record keeping and financial control, businesses managed by people without industry experience, businesses managed by people without management experience, not having a business plan, not using professional advisors, education of management, no ability to attract and retain quality employees, and product/service timing and economic timing at market entry. The results clearly set the role of management in failure process in foreground compared with market and general environment issues. In their study, Lussier R.N. and Pfeifer S. (2001) also tested the variables on the example of CEE countries, finding the failure factors to be the same as for the US firms.

Several important conclusions can be drawn based on the review of literature. Authors have used different failure definitions and varying classifications of failure reasons in their studies, which most probably have resulted from the usage of views of different stakeholders and data obtained from different economic environments. Contrary to modern theories, the weight in empirical literature still seems to be set on internal reasons, or at least on management inability and deficiencies in facing external pressures. There were no outstanding studies available to the author on agriculture, forestry and fishing industries, so this is a certain gap in literature to be fulfilled with the current study.

2. Data and methodology of study

The sources of failure reasons in the current study are the court judgments about bankruptcy declarations. According to the Estonian Bankruptcy Act (2011), court judgments beside other information shall include information on the insolvency reasons. Publicised court judgments can be downloaded in Estonia for two periods:

Table 2

Firm sizes of cases in the current study

Number of workers	Number of cases
1-9	26
10-49	9
50-249	3
Not disclosed	12

Source: author's calculations based on the KIS, KOLA and ECR data

Table 3

Frequencies of bankruptcy reasons for studied 50 cases

Category of reason	Specific reason	Frequency
Internal	excessive risk taking	1
	insufficient equity capital	6
	unprofitable principal activities	11
	nonperforming accounts receivable	3
	unskilled management	9
	inability to find finances	6
	failed investment	9
	failed business plan	5
	low quality product	2
	criminal activity	8
External	increase in competition	7
	decrease in demand	17
	increase in input prices	8
	action of cooperation partners	9
	change in some regulation	4
	unexpected event (e.g. natural disaster, theft)	12
	overall economic recession	2

Source: author's calculations based on the KIS and KOLA data

the first database KOLA (*Database of court statistics and decisions*) covers decisions from 2001 to 2005 and the second database KIS (*Data system of courts*) covers decisions from 2006 and onwards. When the KIS database has been actively used by courts, then KOLA often lacks information. For the current paper, all publicised county court judgments of firm bankruptcies for the period of 2002-2009 were downloaded from the previously mentioned databases and in total, there were 50 judgments on agriculture, forestry, and fishing industry firms. The mentioned court judgments incorporate the perceived causes of firm failure presented by trustee. This is also the reason why court judgments do not include any predefined classification system and instead causes are set as the best understanding of trustee. Table 1 shows the frequencies of used cases per bankruptcy declaration year.

In current study, data collection is followed by its aggregation to 17 different groups of perceived causes listed in Table 2 and detecting the frequencies, how often the given reason is represented through the cases. This is followed by determining whether specific

reason can be attributed to internal or external category based on the classifications of Boyle R.D. and Desai H.B. (1991). The analysis is followed with aggregate reasons and three groups will be formed: 1) cases where only internal reasons are given; 2) cases where only external reasons are given; and 3) cases where both reasons (i.e. internal and external) are given. Using previously outlined classification, Cramer's V Coefficient (for detailed description see, e.g. Healey J.F., 2011) will be used to test whether the source of bankruptcy reason is associated with the bankruptcy year and firm size. More specifically the aim is to study, whether the source of bankruptcy reason (i.e. only internal, only external, both external and internal) varies for different bankruptcy years and different firm size groups.

The size categories are defined according to the European Commission Regulation 96/280/EC, which recommends using the following groups outlined according to the number of workers: 1) 0 employees, 2) 1-9 employees, 3) 10-49 employees, 4) 50-249 employees, 5) 250-499 employees, and 5) more than 500 employees. The source of number

of workers is the Estonian Commercial Register (i.e. ECR) database. Thus, the following frequencies of pre-bankruptcy number of workers are obtained as outlined in Table 2.

3. Empirical analysis and discussion of results

Empirical results outline several interesting tendencies. The average number of reasons through all cases was two. Cases with two reasons were also the most frequent ones (21 cases), which were followed by cases with three reasons (12 cases) and one reason (10 cases). Cases where there was only one reason were mostly attributed to situation, where criminal activities (e.g. tax fraud, embezzlement of resources) had been suspected by trustee. The most frequent reason was the decrease in demand for the product firm was offering, which in turn mainly resulted in the inability to sell product or earn sufficient profit from sales. As a common problem to agriculture, forestry and fishery sector, unexpected event was the second most frequent cause of bankruptcy, whereas natural disasters dominated as the specific reason. The third most frequent cause was unprofitable principal activities. Eight other reasons were represented for more than 10% of cases and they were (in the order of importance, also see Table 3): unfavourable activities by cooperation partners (mainly termination of contract by suppliers or buyers), failed investment (allocation of money to some asset that did not create expected returns), unskilled management (lack of knowledge and education to run business), increase in input prices (mostly different supplies or labour), criminal activity (e.g. tax fraud, embezzlement of resources), increase in competition (emergence of additional competitors on local or foreign market, thus, reducing price of products), inability to find finances (mostly for replacing obsolete technology), and insufficient equity capital (too low capital input by shareholders compared with the amount of used loans and also absence of reserves). Out of 50 cases studied, the most common situation was the one where both, internal and external reasons were present in court judgment (21 cases). This supports the modern theories and some of the previous empirical studies outlined in literature review. Cases, where there were only internal or only external reasons given, had almost the same representation, 15 cases and 14 cases respectively. In future studies, the current research can be developed by analysing combinations of different reasons and outlining the failure process in more detail through specific case studies.

The empirical analysis is followed by testing whether there is significant association between bankruptcy reason source and bankruptcy year or firm size. Firstly, Cramer's V is calculated using different bankruptcy years. The test has sufficiently large value ($V = 0.375$) but due to high approximate significance value (0.443), the hypothesis that the source of bankruptcy reason and bankruptcy year are associated shall currently be rejected (i.e. bankruptcy year does not allow to determine the source of bankruptcy reason). The same tendency is followed with different size groups ($V = 0.204$, approximate significance = 0.531), i.e. the hypothesis that bankruptcy reason's source and firm size are associated shall be rejected (i.e. firm size

does not allow to determine the source of bankruptcy reason). From previously given, it can be theorised that bankruptcy time (that can for instance mean different market situation, climate conditions, economic cycle) or firm size (determined by the number of workers) does not influence the source of bankruptcy reasons in agriculture, forestry, and fishery sector. In future research, the mentioned associations could be studied with more complex statistical techniques (which would probably demand additional data). Also, additional independent variables could be introduced and the typology of reasons further developed.

Conclusions, proposals, recommendations

Failure literature is extensive but highly diversified. Most of the research has been directed to forecasting failure with financial variables and less attention has been devoted to failure reasons, especially to specific sectors like agriculture, forestry and fishery industry.

Both, theories and empirical research offer varying insight into the reasons of failure. Some studies reflect the importance of either internal or external causes but modern literature emphasises more the role of both factors.

The three main causes of firm bankruptcies in Estonian agriculture, forestry, and fishery industry have been the decrease in demand, some unexpected event, and unprofitable principal activities. The most common situation is where both, internal and external reasons cause bankruptcy.

Results in the current paper allow theorising that bankruptcy time or firm size (determined by the number of workers) does not influence the source of bankruptcy reasons in agriculture, forestry, and fishery sector.

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Farmer Characteristics, Farm Management and Financial Performance on Finnish Dairy Farms

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Abstract. The aim of this study was to measure the management capacity of Finnish dairy farmers and to see how it affects financial performance of the farm in a short run. A survey data relating to management capacity were analysed together with financial results from 117 farms by factor analysis and correlation analysis. The results indicate that the gross margin of the farm is positively associated with a farmer's satisfaction with financial results and an active touch to management and development of the farm, characterised by high appreciation of profession, strong instrumental values, a high trust on the future success of the farm, and an entrepreneurial management orientation. The results also indicate that to understand better the effect of management capacity on financial performance, a longitudinal study would be preferable, because it is necessary to take into account the development of financial success along time and its dependency on investments and growth.

Key words: management, profitability, success, dairy farm.

JEL code: Q12

Introduction

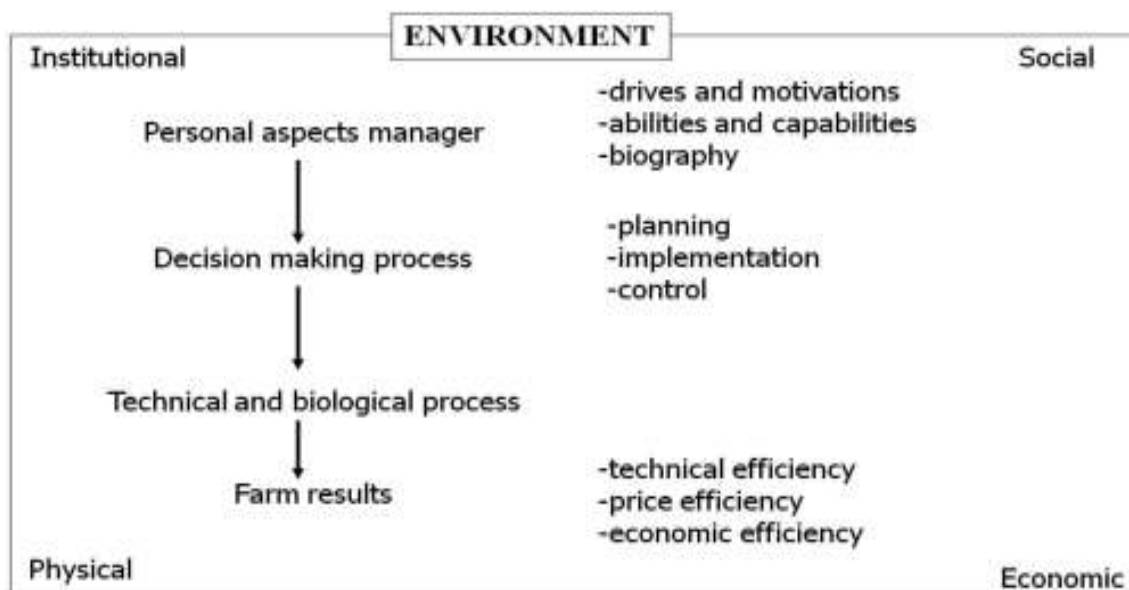
The most important task of a farm manager is to lead the use of farm resources in such a way, that the goals set for farming can be achieved as well as possible. Researchers in the field of agricultural economics and farm management largely agree that the farmer himself is an essential element affecting the achievement of goals (e.g. Westermarck, 1951; Castle and Becker, 1962; Muggen, 1969; Bigras-Poulin et al. 1985; Tarabla and Dodd, 1990; Fairweather, 1994; Galanopoulos et al. 2006; Nuthall, 2009; Rantamäki-Lahtinen, 2009). Textbook definitions of farm management (e.g. Bradford and Johnson, 1953; Harsh et al., 1981; Dalton, 1982; Castle et al., 1987; Turner and Taylor, 1998; James and Eberle, 2000; Olson, 2004; Kay et al., 2008) share certain features. They all refer to the importance of goals of the business together with the goals of the individuals involved in the family farming system. They typically attempt to separate different phases of the managerial work into parts of a process, which should be followed. The third common feature is the emphasis given to the managerial ability or management skills of the farm owner or operator. Managerial capacity of a farm manager, as determined by Rougoor et al. (1998), is comprised of the necessary personal characteristics and skills to deal with decision problems at a correct way and time. Management ability is often used in literature as a synonym to management capacity. However, while the latter contains both the personal characteristics and the decision making system, the former essentially deals with the personality and psychological traits of the manager: it is based on the genotype of a person – personality, intelligence and cognition – and is shaped by education and experience along time (Nuthall, 2001).

Although the importance of the manager on the performance of a farm is recognised, it has been a challenge to measure – even when omitting this factor in

econometric models may lead to distorted results (McBride and Johnson, 2006). According to Ford and Shonkwiler (1994), managerial ability in econometric studies has most typically been taken into account as a set of demographic variables or proxies of production methods. However, it is very difficult to characterise the level of farm management by basic farm operator characteristics or proxies like efficiency of financing, solidity of the farm, and success in cattle breeding (McBride and Johnson, 2006; Solano et al., 2006; Hansson, 2008). Rougoor et al. (1998) reviewed 23 scientific articles that deal with managerial capacity and farm performance. In these, the most typical depictees of managerial capacity have related to biography and drives or motivations of the farmer. As a conclusion, they stated that the knowledge in this area is still rather limited. The influence of education is often studied, but other personal aspects are under-exposed.

Despite the numerous studies that deal with farmers' personal characteristics like goals, attitudes, skills, and decision making as regards achieving the desired level of performance, it has been a challenge to form an integrated model where all these could be taken into account. Rougoor et al. (1998) introduced a general framework of management capacity in relation to environment, biological processes, and farm results (Figure 1). In this framework, a manager with his personal characteristics is the starting point. He makes his decisions on various aspects of farming trying to optimise the technical and biological processes on the farm. These processes are only partially controllable but they determine the technical and economic results of the farm. Stochastic elements, like weather, diseases, and market fluctuations together with the changes in operating environment also affect the outcomes.

Personal characteristics of the manager can be classified into drives and motivations, abilities and capabilities, and biography. Even if a farmer has high



Source: Rougoor et al., 1998

Fig. 1. Management capacities in relation to environment, biological processes and farm results

personal skills and is operating on favourable conditions, it is possible to go wrong with farming if the decision making process is poor. This process is commonly divided into three phases, planning, implementation, and control, which are applied in the fields of finance, production, marketing, and human resources (e.g. Kay et al., 2008; Boehlje and Eidman, 1984). The core idea of this framework has been applied, for example, by Wilson et al. (2001), Trip et al. (2002), Solano et al. (2006), and Hansson (2008).

The aim of this study was to measure the management capacity of Finnish dairy farmers by using variables that describe their personal characteristics and managerial behaviour and to see how the management capacity affects financial performance of the farm on a short run.

Data and methods

The framework presented in Figure 1 was utilised to achieve the objectives of this study. The data were collected from Finnish bookkeeping farms. There are about one thousand farmers, who participate in a comprehensive bookkeeping system maintained by MTT Agrifood Research Finland. The Finnish bookkeeping farms also belong to the Farm Accountancy Data Network of the EU (FADN). The accounting system produces a detailed picture of the financial situation of the participating farms. In 2010, a survey was performed among the bookkeeping farms. The survey contained a large set of questions that were formed to measure farmers' values, attitudes, and managerial behaviour. Answers to the questions were given in a Likert scale, where the extreme ends were of the type "totally disagree – totally agree", "not important – very important" or "not at all – very much", depending on the nature of each question. A total of 302 farmers answered the survey. Due to the missing values in single questions, the effective sample size varied between 280 -290.

The survey questions were originally formulated so that it would be possible to calculate summated scales of them for further analyses. The survey data were first analysed by the explorative factor analysis using the principal axis extraction method and orthogonal Varimax rotation. Some of the original questions were removed from final analyses due to very low communalities or high cross loadings on several factors. The interpretation of each factor was based on the contents of the highest loadings. Summated scales to represent the numerical values of factors were then calculated as the mean of the values of the original questions. Only questions with loadings higher than 0.35 on a factor were taken into account and values of questions with negative loadings were reversed. These summated scales were then used as measures of values, attitudes, traits, and behavioural features of each farmer. The factor analyses were carried out in the whole survey data set (n=280-290), but only dairy farms and farmers (n=117) were selected for further analyses.

The summated scales depicting farmers' managerial capacity were combined with the selected key figures from financial statements of farms. The averages from the years 2008 and 2009 were used to decrease random variation of the financial indicators. The following key figures were analysed:

- total turnover (EUR) to measure the size of the farm;
- Farm Net Income (EUR) to measure the amount of compensation that the farming family gets for its own capital and labour;
- Gross Margin to measure the compensation for fixed inputs incl. own capital and labour;
- Profitability Coefficient to measure the relative profitability of the farm. It is calculated by dividing Farm Net Income with the required compensation of own capital and labour.

Research results and discussion

Before going deeper to presentation and analysis of the research results, the data set utilised in this study – the bookkeeping farms – is worthy of a remark. The farmers who voluntarily participate in bookkeeping with MTT and return the survey forms do not form a representative sample. Most probably, a notable portion of the variance unique to financial performance, farmer characteristics, and their managerial behaviour was not detected in this study. The bookkeeping farms are often assessed to belong to the best performing farms in Finland. The research results presented next should thus be interpreted mainly as illustrative. The results provide evidence about the existence of certain dependencies between the measured items, but the exact magnitudes do not necessarily apply to dairy farming in a larger population.

Factors and summated scales describing the farmer

Values and goals of the farmer were measured with 18 questions, which were condensed into four factors. The solution covered 55% of the variance of the original questions. The rotated factors could be interpreted similar to value dimensions introduced by Gasson (1973), which are commonly thought to represent the goal set of farmers (e.g. Kay et al. 2008). The corresponding summated scales were named as *social values*, *instrumental values*, *intrinsic values*, and *expressive values*. Farmers' trust on future was measured with seven questions. Totally, 76% of their variance could be explained with two factors. The first one depicts farmer's trust on success possibilities of his own farm and the second one depicts success possibilities of farming in general. These were named as *trust on own success* and *general trust on farming in the future*.

Attitudes of the farmers were measured applying a modified version of an attitude scale developed by Willock et al. (1999). Five attitude dimensions were found: *risk aversion*, *appreciation of profession*, *critical attitude towards bureaucracy*, *pro-environmental thinking*, and *attitude towards the following political environment*. The solution explained 36% of the variance of the survey items. Farmers' attitudes towards farm management can be expected to have an effect on their activity in managerial work compared with running, production related tasks (Sh. Al-Rimawi et al., 2006). This attitude also relates to the question whether the farmers see themselves more as entrepreneurs or producers, which also may affect their managerial behaviour (Vesala and Peura, 2002). These traits were analysed with twelve questions that produced three factors. Some of the questions, however, had low communalities or high cross loadings. Finally, seven questions were used and two easily interpretable factors extracted *interest in management* and *entrepreneurial management*.

Locus of control is a personality trait that depicts an individual's belief of his own possibilities compared with external forces to affect his situation and future state of things (e.g. Spector, 1982; Nuthall, 2010). In the former case, the locus of control is internal, and in the latter case, it is external. In psychological research, there has been used several different scales to measure

this trait. In this study, eleven questions were used and two dimensions found in the factor analysis. The first one related to such a perception that the political environment largely determines the success of farming. The second dimension depicted a perception, where the farmer and his decisions mostly determine the course of development. The result of this factor analysis indicate that the locus of control is not necessarily a continuum from internal to external but at least in this kind of context, it may have more dimensions. The second factor, however, explained a relatively small proportion of the total variance of the original items and had a low alpha-reliability. Thus, one summated scale was formed to measure the *external locus of control*.

Success of a business is typically measured with objectively determined financial indicators. However, the subjective perception of success that a farmer has may differ from that especially in a short run (Mäkinen et al., 2009). Perceived success was thus analysed with 17 questions that produced three factors. The respective summated scales were named as *satisfaction on profession*, *satisfaction on financial results*, and *satisfaction on agrarian way of living*.

The decision making process

The management process – or the decision making process – on a farm is commonly presented as a continuous cycle of planning, implementation, and control. The implementation phase is tightly connected to the operational working on the farm and is very difficult, if not impossible, to analyse with survey questions. For this reason, it was omitted in this study. Instead, the amount and quality of planning and control was analysed. In these phases of decision-making, the farmer collects information both from inside and outside the farm, processes it in a way he feels suitable, and creates guidelines for the implementation on different levels of operation. For information collection and processing, there are numerous tools available varying from simple hand-made calculations to sophisticated information systems. However, according to Öhlmer et al. (1998), analytical thinking is not as typical for farmers as a more intuitive, tacit decision-making. Hansson (2008) analysed this among Swedish farmers but did not find any connections between analytical thinking and efficiency of the farm.

In this study, the amount of analytical thinking in decision making was measured with six questions, where the farmers were asked to rate how much they use different analysis tools. The values of these variables were added up to a summated scale named as *use of analysis tools*. Regardless of the amount of analytical thinking, a farmer needs information from his farm and from the environment. Verissimo and Woodford (2005), for example, found that the most successful farmers typically collected and used plenty of information. Information usage in this study was measured with a list of 17 different sources of information. Similarly to analysis tools, the farmers were asked to express how much they use each source. The sum of these was used as measure of *information activity*.

Farmers' activities in planning and control procedures were measured with 17 questions. Based on the factor analyses, these could be condensed into

Table 1

Connections between farmer characteristics, management process and financial success indicators from the years 2008-2009 on Finnish bookkeeping dairy farms

	Profitability coefficient	Gross margin	Turnover	Farm net income	Satisfaction in financial results
Expressive values	-0.068	-0.044	-0.081	-0.111	0.252 **
Instrumental values	-0.050	0.247 **	0.227 *	0.073	0.202 *
Intrinsic values	-0.134	0.140	0.164	-0.031	0.050
Social values	-0.054	0.191 *	0.221 *	0.061	0.127
Critical attitude towards bureaucracy	0.064	0.027	0.041	0.046	-0.239 **
Appreciation of profession	0.020	0.258 **	0.239 **	0.146	0.409 ***
Pro-environmental thinking	0.009	-0.193 *	-0.189 *	-0.073	0.138
Attitude towards following political environment	-0.043	0.066	0.101	0.018	-0.003
Risk aversion	-0.170	0.467 ***	0.481 ***	0.013	0.174
External locus of control	0.006	-0.085	0.027	0.024	-0.236 *
Trust on own success	-0.029	0.399 ***	0.364 ***	0.130	0.484 ***
Trust on farming in future	-0.265 *	0.086	0.224 *	-0.162	-0.246 **
Entrepreneurial management	0.080	0.366 ***	0.323 ***	0.182 *	0.211 *
Interest in management	0.004	0.039	0.139	0.082	-0.009
Information activity	-0.038	0.037	0.100	0.021	0.044
Use of analysis tools	-0.062	0.384 ***	0.430 ***	0.121	0.004
Business planning	-0.034	0.193 *	0.184 *	-0.017	0.195 *
Financial planning	-0.073	0.057	0.131	-0.011	0.076
Controlling	0.153	0.186 *	0.182 *	0.212 *	0.100
Experience in farming (years)	0.069	-0.168	-0.165	0.045	-0.042

Pearson r, n=117, significance levels: *** = p<0.001, ** = p<0.01, * = p<0.05

Source: authors' calculations based on the research data

three summated scales: *financial planning*, *business planning*, and *controlling*. The variables relating to business planning mostly depicted activity in long term and strategic level planning, while financial planning was more related to short or medium term point of view.

Connections between farmer characteristics, management process and success indicators

It is typical for summated scales that their distributions approach the normal distribution. By looking at histogram plots, this was observed with the scales

presented above as well as with the financial figures of farms. Pairwise scatter plots were also examined to find possible non-linear relationships, but such ones were not detected. Thus, it was justified to use Pearson correlation coefficients to analyse linear relations between farmer characteristics, management process, and indicators of financial success. These are presented in Table 1.

Conclusions

1. Gross margin of a farm represents a short-term indication of profitability. It measures the amount of money that is left to compensate the fixed costs of production (like depreciation of assets and farming family's own labour) after the running costs of operation. Gross margin was positively associated with such characteristics of the farmer as appreciation of profession, instrumental and social values, trust on own success, entrepreneurial management, and risk aversion. Negative associations were found between gross margin and pro-environmental thinking, and experience in farming. Of the domains relating to the management process, controlling, business planning, and use of analysis tools were positively associated with gross margin. The correlation between gross margin and size of the farm measured with turnover was as high as 0.889. The perceived financial success was negatively correlated with trust in future of farming and critical attitude towards bureaucracy, and positively associated with such features as appreciation of profession, experimental and instrumental values, trust on own success, risk aversion, entrepreneurial management, and business planning. Perceived success also correlated positively with financial success of farming measured with different indicators.
2. The observed correlations between farmer characteristics, management process, and gross margin of farm argue in favour of causal relations between these features. The finding that turnover (size) of the farm correlates positively with gross margin but not with profitability coefficient, can be interpreted so that the profitability of the largest farms is low due to the high sunk costs of recent investments even though the gross margin after the direct costs is relatively high. Negative correlations between the experience (years) in farming, and turnover and gross margin of the farm (although significant only at $p < 0.1$ level) support this interpretation: it is possible that relatively young farmers have recently done notable investments to grow and develop the farm. Corresponding signals are also provided by the relatively high correlations between risk aversion and farm size and gross margin. It looks likely, that when farmers have recently invested to the farm, they feel it necessary to avoid further risk taking to secure liquidity and solvency.
3. Gross margin of the farm is positively associated with a farmer's satisfaction with financial results and, widely explicated, with an active touch to management and development of the farm. This active touch is characterised by high appreciation of profession, strong instrumental values, a high trust

on the future success of the farm, and especially, by an entrepreneurial management orientation with a vision about the future state of the farm. Active hold on financial planning, controlling and use of analysis tools can also be seen as parts of this active touch and a relatively large management capacity, which, as can be concluded, plays an important role in achieving good financial results in the short run.

4. In the long run, profitability coefficient is the most important indicator of financial success of a farm. However, few features relating to the management capacity were found to be associated with it. The cross-sectional nature of the study is a possible explanation to this. When a long-term indicator is analysed, both the long-term development of the indicator and the long-term decisions affecting it should be taken into account in order to get a reliable picture. Investments to develop and grow the farm typically first lower the level of profitability, but if the farm is managed correctly in such a situation, it is possible to get to a positive track in the long run. This kind of conclusions have been made earlier in a Finnish study (Ryhänen et al., 1998). Hansson (1998) also concluded that positive expectations for the future profitability of dairy farming had a negative association with efficiency probably due to large investments done lately, which are expected to generate increased income in the future. The interconnections relating to management capacity and farm success and development in the long run seem to be very difficult to characterise with a cross sectional survey analyses.

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Assessment of Development Scenarios for The Regional Internal Communication and Information System of The Latvian Blood Donors Service

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Abstract. The aim of the research paper is to assess scenarios for the regional internal communication and information system of the Latvian Blood Donors Service, taking into consideration its significant role in the operation and development of this system. To identify the most suitable scenario for the regional internal communication and information system of the Latvian Blood Donors Service, the authors performed a hierarchy analysis, engaging five experts. The experts compared problem elements in pairs and assessed the degree of interaction among them in a hierarchy. In the result, the experts' conclusions were expressed numerically, gradually identifying priorities and, finally, determining the global priority – cooperation among institutions engaged in the Latvian Blood Donors Service. Cooperation was advised in implementing the development scenario for the regional internal communication and information system of the Latvian Blood Donors Service.

Key words: regional system of the Latvian Blood Donors Service, development, internal communication and information circulation.

JEL code: I19

Introduction

The need to assess the development scenarios for the regional internal communication and information system of the Latvian Blood Donors Service (hereinafter LBDS) is determined by problems in internal communication and information circulation in the LBDS's regional system, which hinders the flow of operational and strategic information among the institutions engaged in the LBDS, which prepare blood components and supply them to medical institutions: the State Blood Donor Centre (hereinafter - SBDC), its affiliate in Rezekne, the Blood Establishments of 9 hospitals (hereinafter - BEs), and the Blood Offices (hereinafter - HBBs) of 32 hospitals in all the regions of Latvia (Mistre, Zvaigzne, 2009; Mistre, Zvaigzne, 2010).

The goal of identifying the development scenario for internal communication and information circulation in the LBDS's regional system is to work out further proposals which, in terms of legal acts regulating the operation of the LBDS's regional system and in terms of communication, would serve as a basis to perform further activities in relation to professional communication among the institutions engaged in the LBDS's regional system.

The development of internal communication and information circulation in the LBDS's regional system is affected by various socio-economic criteria but so far, these criteria and their affect have not been studied. The latest studies on internal communication and information circulation in the LBDS's regional system may be found in the research papers by Mistre and Zvaigzne (2009, 2010, 2011). The method of hierarchy analysis was widely used in tackling various problems of regional economy during the recent years: Rankevica (2006), Pelse (2007),

Litavniece (2008), and Vronska (2012).

The **research object** is the regional system of the LBDS, and the **research subject** is internal communication and information circulation.

The following **hypothesis** was set: cooperation among the institutions engaged in the Latvian Blood Donors Service is the most optimum development scenario for improving the regional internal communication and information system of the LBDC.

The research **aim** is to assess the possible development scenarios for the regional internal communication and information system of the LBDC according to the criteria for assessing internal communication and information circulation.

The following **research tasks** were set and performed to achieve the aim:

- 1) to assess the role of internal communication and information circulation in the LBDS's regional system by means of hierarchy analysis;
- 2) to identify the most appropriate scenario, based on expert opinions, for improving the internal communication and information circulation in the LBDS's regional system.

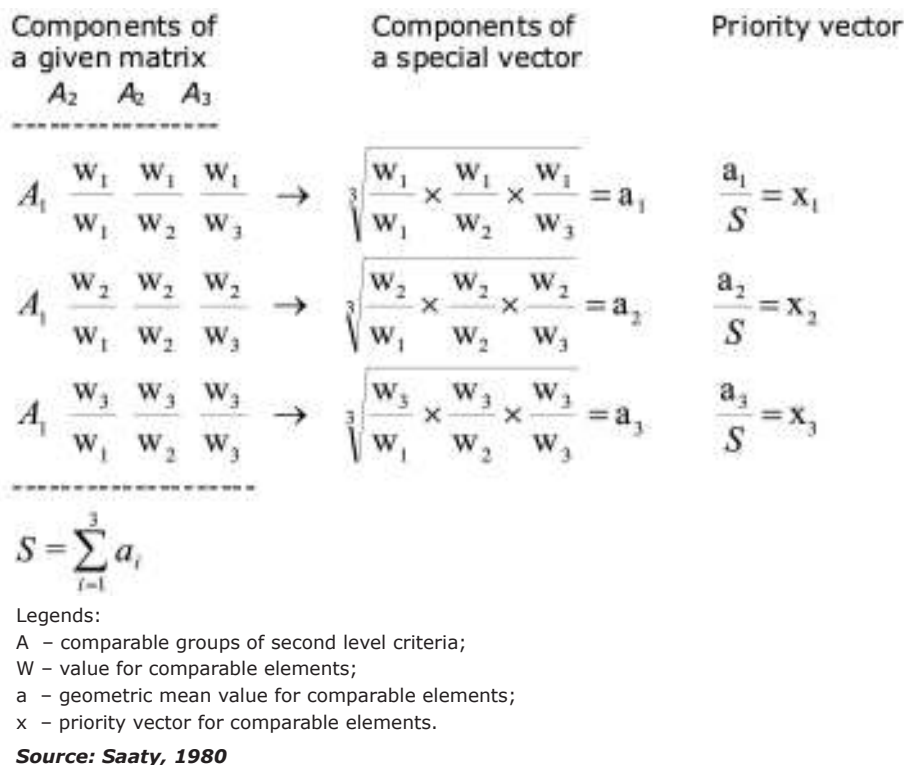
Materials and methods

The present research is based on theoretical studies of communication and information circulation and a survey of specialists engaged in the LBDS's regional system that was conducted in the spring of 2011.

In the present research, the monographic and descriptive methods were extensively employed as well as analysis and synthesis to study problem elements and synthesise interrelationships or define causal relationships. The logical and constructive method was

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Source: Saaty, 1980

Fig.1. Algorithm for a 3x3 matrix

employed to distinguish the most essential qualities of the research object from individual facts, to draw general conclusions or to define correlations. By means of analysis, the general and whole phenomenon was divided into components, which allows reviewing the interesting individual parts.

In the present research, the practical research process was based on a sociological study method – questionnaire surveying, which was performed within the LBDS's regional system.

To assess the role of internal communication and information circulation in the LBDS's regional system, the hierarchy analysis was employed, and 5 experts were invited to complete such an analysis:

- Jorgen Georgsen, medical director at Funen Transfusion Service Department of Clinical Immunology, Denmark's Odense University Hospital;
- Gita Nemceva, SBDC director, member of the executive board of the Latvian Association of Transfusiologists;
- Irena Danilane, head of the Blood Donors Department of the SBDC (from 1974 to 2011);
- Brigita Aispure, head of the BE of Kuldiga Hospital, member of the executive board of the Latvian Association of Transfusiologists;
- Mg.oec. Zane Mistre, PhD student of the Faculty of Economics, Latvia University of Agriculture.

The experts were selected on condition that they were especially competent in information circulation issues in the LBDS's regional system. Each expert was assigned a capital letter from A to E. The expert analysis

was based on an American mathematician T.Saaty's Analytic Hierarchy Process, so that the experts' work was organised and their ratings were processed in a scientifically correct way (Saaty, 1980).

The algorithm of hierarchy analysis was suited for assessing the present situation and the development priorities for internal communication and information circulation. The researched problem was divided into several components for designing an initial hierarchy. After hierarchy matrixes were filled in, a priority vector, which indicated its significance relative to the criterion of every higher level, was calculated for every element of hierarchy. In the final result, all components of the general problem, which were subordinate to one goal, had to be mutually compared. It was achieved by using a special scale of relative significance, which allowed transformation of wordy information into numbers. A priority vector was gained by calculating a set of special vectors for every pair-rating matrix, and after, a result was normalised to 1 (Pelse, 2007).

Several ways of gaining coordinates of priority vector exist – one of them is calculation of a geometric mean in which elements of every row are multiplied and an n-power root is extracted, where n is a number of elements. A set of numbers gained is normalised by dividing every number by a sum of all numbers. To explicitly present the mentioned algorithm, a scheme for calculating a priority vector is shown in Figure 1, which is an example of 3x3 matrix.

To evaluate the consistency of local priorities, a consistency ratio CR is used, which allows evaluation of the credibility of hierarchy analysis results. According to T.Saaty's theory, a consistency ratio has to be less

than 10% or 0.10. In some cases, it may reach 20% but not more. If a consistency ratio extends beyond these limits, experts have to examine carefully a problem and re-examine their ratings (Pelse, 2007).

Research results and discussion

On 1 January 2007, significant organisational changes took place in the performance and structure of the LBDS's regional system. Based on "The Concept for Optimising the Performance and Structure of the Blood Donor Service of the Republic of Latvia 2006-2010" developed by the SBDC, a new procedure of financing BDC-s at medical institutions was introduced, and their number was reduced from 18 to 10. Along with the restructuring of the LBDS's regional system, the improvement of blood component preparation technologies and the introduction of information technologies took place simultaneously in every department. These measures were implemented on the basis of the European Union documents with the purpose of promoting the development of the Latvian Blood Donor Service (Mistre, Zvaigzne, 2009).

Until 1 January 2007, the LBDS's regional system consisted of the SBDC, its affiliate RBDC, and 18 BCDs in the whole Latvia. The SBDC had records on 95000 blood donors and information on 80000 residents having contraindications for blood donation. Exchange of operational information between the SBDC and other blood service institutions is carried out on the phone that does not assure reception of precise information about donors who do not observe intervals between blood donations and residents who have contraindications for blood donation. Thus, collecting and testing blood that is later rejected as defective. Due to these reasons, funds have been used inefficiently and it was not possible to have the necessary operational information on stocks of blood components at blood collection institutions. It restricted the functioning of the LBDS and medical institutions when providing emergency medical help as well as in critical situations. The BCDs having a small stock of blood components not always could supply a necessary blood component. Cooperation with clinicians, which can be provided only by involving HBBs, could be regarded as a disadvantage for the LBDS. Complete information on transfusions, transfusion reactions as well as quantities of blood components actually used and disposed of has to be at the disposal of HBBs. There was a lack of feedback. It is and was necessary to receive, compile, and analyse this information, but so far this information is not included in statistical reports and was not entirely available for further analysis (Mistre, Zvaigzne, 2009).

The main goal for optimising the structure of the LBDS's regional system was to change the principle of self-supply for centrally managed supply of blood at medical institutions having BCDs. Such a conceptual change is possible on condition that the total number of blood donors in the country per all residents is stable and tends to increase. However, optimising the structure of the LBDS's regional system might not become a reason for a decrease in this indicator (Mistre, Zvaigzne, 2009).

After the SBDC's "The Concept for Optimising the Performance and Structure of the Blood Donor Service of the Republic of Latvia 2006-2010" was introduced on

1 January 2007, the following institutions are included in the LBDS's regional system: the SBDC with its affiliate the RBDC, 10 hospital BCDs, and 35 HBBs in all regions of Latvia (Mistre, Zvaigzne, 2009).

With the introduction of the Concept, the above-mentioned threats remained as well as new ones emerged for the LBDS's regional system. The change of the principle of self-supply for centrally managed supply of blood at BCDs could negatively impact any hospital's interest in keeping a BCD as well as the problem of lacking financial resources for quality improvement, which includes also education of medical personnel and residents, and introduction and maintenance of technologies, was not solved. Yet, the flow of information and communications in the LBDS's regional system have to function perfectly, thus, providing the right for all Latvian residents to receive quality medical services (Mistre, Zvaigzne, 2009).

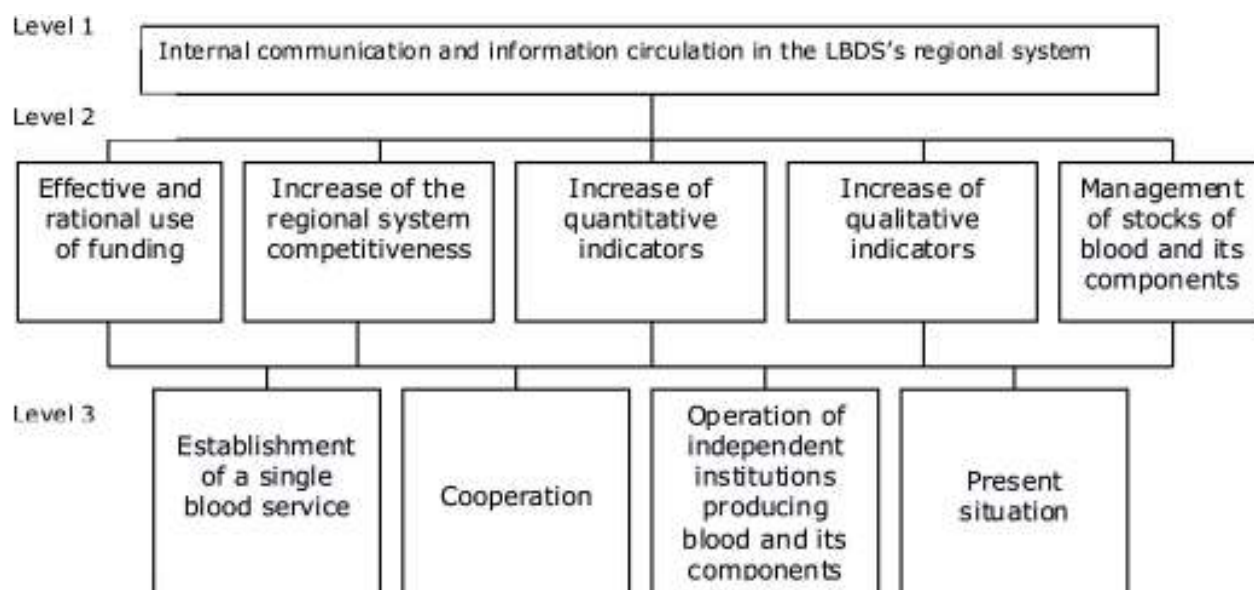
Based on the theoretical studies on communication and information circulation, the previous studies on the institutions engaged in the LBDS's regional system as well as the specifics of the LBDS, the authors classified the characteristics and phenomena that were directly affected by insufficient communication and information circulation into 5 large groups:

- 1) effective and rational use of funding;
- 2) increase of the regional system competitiveness;
- 3) increase of quantitative indicators;
- 4) increase of qualitative indicators;
- 5) management of stocks of blood and its components.

The role of internal communication and information circulation in the LBDS's regional system is significant as, although, the institutions engaged in the LBDS operate with the purpose of producing and distributing blood and its components. Yet, their performance is affected by various legal statuses of the institutions engaged in the LBDS, which, in their turn, determine different procedures for their financing. For instance, the SBDC is an institution directly subordinate to the Ministry of Health of the Republic of Latvia and is financed from the government budget, while the BEs are financed from two sources: the budget of the SBDC and that of the medical institution (Mistre, Rudusa, Zvaigzne, 2011).

Since 2010, the SBDC has been differentiating funding for the BEs according to the quantity of blood produced. At the same time, fixed quantities of blood products are set in agreements concluded between the SBDC and the BEs. It means that the production of blood at the BEs is limited, otherwise, a medical institution, which controls a particular BE has to cover the costs of overproduction of blood. Given the fact that blood and its components are centrally distributed, such a model of financing is not efficient, as it does not allow collection of blood in those regions where more blood donors are available (Mistre, Rudusa, Zvaigzne, 2011). In the result, funds are spent on attracting blood donors in those regions, where less blood donors are available. Besides, the costs of logistics for tests and transportation of blood components increase by setting fixed quantities of blood for regions.

Insufficient internal communication and information exchange hinders an increase in the competitiveness of the regional system. Although, a single scheme of distribution of blood and its components functions in the LBDS, yet, practically the scheme does not function, as



Source: authors' construction based on the research results

Fig.2. Hierarchy of criteria for assessing the scenarios for internal communication and information circulation in the LBDS's regional system

the quantities of blood to be produced by the BEs are set to meet only the demand of their regional medical institutions for blood components. Therefore, if, for instance, Riga region lacks blood of a certain blood group, while a stock of blood of this blood group is sufficient in Kurzeme region, Riga region invites paid blood donors, conducts an additional campaign for blood donors, but it does not use the resources and capacity of Kurzeme region.

The third point results from the second one in which the authors conclude that any increase in the quantitative indicators of the LBDS is hindered due to insufficient internal communication and information exchange. Quantitative indicators of the BEs may not be compared with those of the SBDC, as, according to the authors, the output of the BEs is limited and set in agreements.

Increasing qualitative indicators directly depend on communication and information exchange among the institutions engaged in the LBDS. For instance, if the LBDS purchases new bags for blood collection, but disproportions are identified in various regional BEs during the sale of these bags, it is reported to the head of the Methodical Department of the SBDC that purchases medical materials for the LBDS's needs. The quality of blood components depends on this information in a direct way. Besides, the greater quantity of blood and its components is written off, the greater are expenses of the LBDS.

The insufficient internal communication and information circulation also affects the overall management of stocks of blood and its components. Although, the single information system ProSang functions in the LBDS, in which the SBDC and the BEs have access to information on stocks of blood and its components at other institutions, such a system is not available to the Blood Offices. As a result, if a medical institution having no BE, but having a Blood Office, is short of blood or a component of blood, it has to spend

some time on obtaining information on stocks of blood at the nearest BEs.

On Level 3 of hierarchy analysis, the authors offer four scenarios for improving internal communication and information circulation:

- 1) establishment of a single blood service;
- 2) establishment of a cooperation system;
- 3) establishment of a system of independent institutions producing blood and its components;
- 4) retention of the present situation.

A hierarchy of assessment criteria was developed and presented in Figure 2. Its Level 1 is associated with the problem of how to provide the internal communication and information circulation in the LBDS; Level 2 includes groups of criteria, from the viewpoint of which this problem is tackled, while Level 3 contains the possible scenarios for improving the internal communication and information circulation in the LBDS's regional system. Such scenarios were selected based on the survey of experts engaged in the LBDS's regional system that was conducted in the spring of 2011.

The establishment of a single blood service means that the methodical head of the LBDS's regional system in the SBDC becomes the real director of this service. Such a model completely changes the model of financing the service, which includes a single system of salaries within the entire service and single accounting and management of financial resources.

Introducing the cooperation model in the LBDS's regional system means that the institutions engaged in the LBDS's regional system retain their present legal status, but by means of targeted, planned, and well-managed internal communication and information circulation, cooperation is improved from the viewpoint of communication. Such a model means that the service is not reorganised, but additional funds are invested in it for developing communication.

Establishing a system of independent institutions producing blood and its components means that the

Table 1

Final matrix for the priority vectors of criteria groups

Groups of criteria	Experts					Average priority vector
	A	B	C	D	E	
Effective and rational use of funding	0.23	0.15	0.13	0.17	0.25	0.19
Increase of the regional system competitiveness	0.08	0.06	0.14	0.13	0.03	0.09
Increase of quantitative indicators	0.11	0.07	0.05	0.12	0.54	0.18
Increase of qualitative indicators	0.17	0.15	0.15	0.02	0.02	0.10
Management of stocks of blood and its components	0.41	0.57	0.53	0.56	0.16	0.45

Source: authors' calculations based on the research results

Table 2

Calculation of the vector of global priorities

Scenarios for improving the internal communication and information circulation	Effective and rational use of funding	Increase of the regional system competitiveness	Increase of quantitative indicators	Increase of qualitative indicators	Management of stocks of blood and its components	Global priorities
Establishment of a single blood service	0.34	0.23	0.25	0.31	0.19	0.28
Cooperation	0.27	0.43	0.48	0.38	0.47	0.37
Operation of independent institutions producing blood and its components	0.29	0.27	0.20	0.23	0.29	0.26
Present situation	0.09	0.08	0.07	0.08	0.05	0.09

Source: authors' calculations based on the research results

institutions engaged in the LBDS's regional system would perform independently in accordance with the European Union regulations. In this case, the SBDC would lose the role of methodical leader, but all the institutions engaged in the service would function on equal and competitive conditions. This system also ensures medical institutions need to become self-sufficient as well as businesses might be started for producing blood and its components, as it is observed in Lithuania. Based on the Lithuanian experience, the SBDC would become a private enterprise producing blood and its components, which afterwards are purchased by medical institutions at a certain price according to public procurement procedures. The main gain from this system is a rational use of blood and its components by medical institutions.

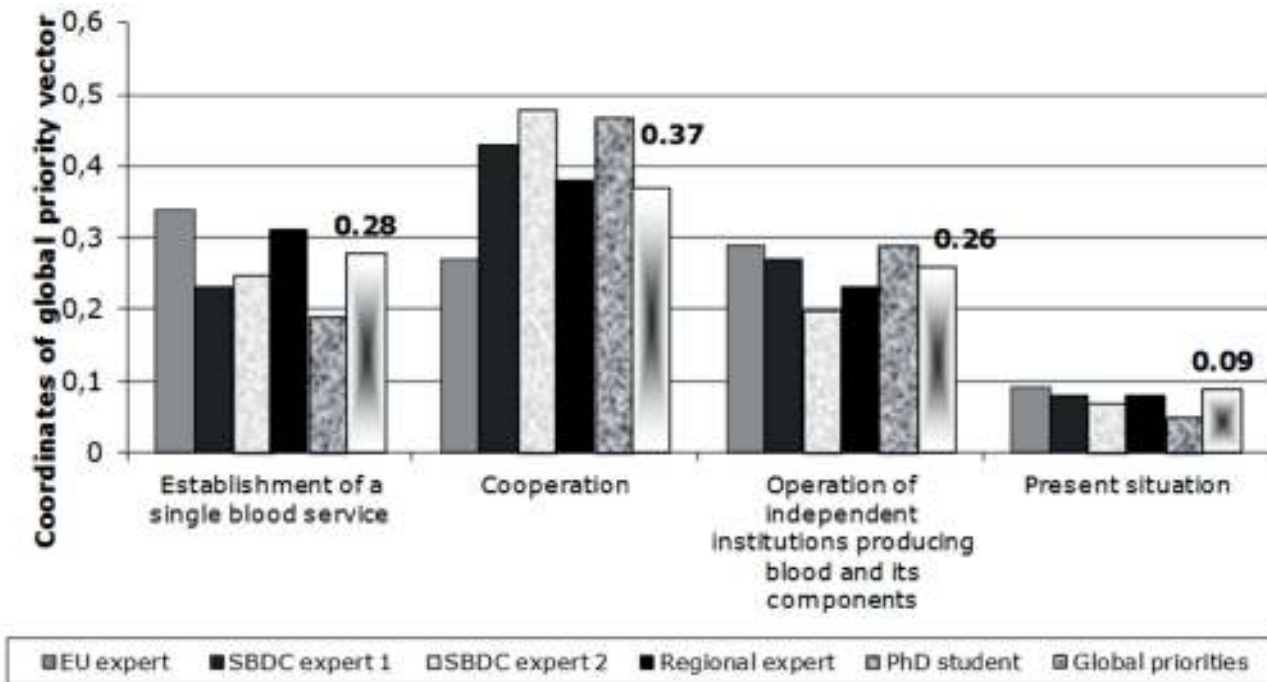
Retaining the present situation means that the present practices for the internal communication and information circulation in the LBDS's regional system are continued and no investments are made to improve the situation.

The experts were familiarised with the scenarios for improving the internal communication and information circulation in the LBDS's regional system. They filled in hierarchy analysis matrixes, taking into consideration

the scenarios and their personal experience. A rating of criteria groups was obtained in the result of analysis (Table 1).

The experts admitted the criteria group "management of stocks of blood and its components" as the most significant group of criteria for improving internal communication and information circulation; its average priority vector was 0.45. It is also logical, as the specialists targeted on efficient and rational use of blood and its components. Almost all the experts gave the highest rating to this criteria group, except expert E who believed that the most significant group of criteria that would affect improvements in internal communication and information circulation in the LBDS was the criteria group "increase of quantitative indicators". The criteria group "effective and rational use of funding" as well as that of "increase of qualitative indicators" had quite similar priority vector coordinates - 0.19 and 0.18, respectively. According to the experts, the least interesting criteria group was "increase of the regional system competitiveness". The priority vector was only 0.09 for this criteria group.

After analysing an opinion of each expert, the authors came to a conclusion that the experts' opinions were



Source: authors' construction based on the research results

Fig. 3. Choices of the most appropriate scenario for internal communication and information circulation in the LBDS's regional system

similar, except expert E who believed that increasing the quantitative indicators would be the main gain from improving the internal communication and information circulation in the LBDS. The opinions of experts A and E were equal regarding the criterion determining that an efficient and rational use of funding would improve by means of communication and successful information exchange among the institutions engaged in the service – the experts' priority vectors were 0.23 and 0.25, respectively. Opinions of the experts slightly differed in whether the qualitative indicators of the LBDS's regional system would also improve in the result of enhancing communication processes. Opinions of experts A, B, and C were almost equal, while experts D and E believed that this criterion, relative to the others, would improve minimally.

Calculating global priority vectors was the final stage in the hierarchy analysis (Table 2). A global priority vector allows considering the most optimum problem solution. It shows a priority vector's coordinates relative to the general goal.

After assessing the problem of how to improve the internal communication and information circulation in the LBDS's regional system from the viewpoint of five various criteria groups, the experts chose cooperation as the most optimum scenario – the global priority vector, in this case, was 0.35 (Table 2 and Figure 3). This scenario was the dominant one also in the calculation of priority vectors for individual criteria groups.

In the present situation, the internal communication and information circulation among the institutions engaged in the LBDS's regional system is insufficient. It was proved by the low rating of it in the hierarchy

analysis: the global priority vector was 0.09. It was a very low rating compared with the other scenarios for internal communication and information circulation, which gained quite similar ratings: the coordinates of global priority vector ranged from 0.26 for establishing independent institutions producing blood and its components to 0.37 for cooperation among all the institutions engaged in the LBDS's regional system. Establishing a single blood service, in which the SBDC would become not only the methodical, but also a real leader, was placed in the second position with a vector coordinate of 0.28. The coordinate of priority vector relative to the general goal of hierarchy – improvement of internal communication and information circulation in the LBDS's regional system – was low for the scenario for retaining the present situation. Therefore, by implementing this scenario, the best choice, will not be made compared with the other scenarios for the improvement of internal communication and information circulation.

Conclusions, proposals, recommendations

1. The hypothesis set in the present research was proved, as, according to the experts, the model of cooperation among the institutions engaged in the LBDS's regional system was the most optimum scenario for the improvement of internal communication and information circulation in the LBDS's regional system.
2. A single scenario of developing the internal communication and information circulation in the LBDS's regional system will provide single standards,

forms, and types of internal communication and information circulation of high quality, which will promote more efficient and better-organised operation of the institutions engaged in the LBDS's regional system.

3. Cooperation (priority vector coordinate was 0.37) among the institutions engaged in the LBDS's regional system was chosen by the experts as the most optimum scenario for improving the internal communication and information circulation in the LBDS's regional system. Establishing a single blood service, in which the SBDC would become not only the methodical, but also a real leader, was placed in the second position with a vector coordinate of 0.28.

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EU Structural Funds for Tourism Development in Latvia

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Abstract. Currently, Latvian tourism industry is facing different problems; however, tourism in Latvia is considered one of the opportunities for the state economic development (Latvian Tourism Development Agency, 2010). Having joined the European Union (hereinafter – the EU), Latvia as one of the less developed EU regions had the opportunity to have financial aid provided by the EU for economic and social development. The EU Funds Projects for development of rural tourism during the period of 2004-2006 were implemented within the framework of the activity "Promotion of Rural Tourism and Craft". The EU Funds support for 2007-2013 has to be a logic continuation for the already made investments. The support has also to be based on the obtained experience and reached results during the period of 2004 - 2006 (LR Finansu ministrija, 2007). The aim of this study is to identify the support receivers of the activity "Promotion of Rural Tourism and Craft" for the period of 2004 – 2006 who have used the EU funds for rural tourism business and who are doing the business at the moment. The methods applied in the study are quantitative research method, questionnaire, analysis, and monographic method. The results demonstrate supervision incompleteness of fund utilisation as not all support receivers who have been questioned are doing business in rural tourism.

Key Words: tourism, EU Structural Funds, accommodation sites.

JEL code: R10

Introduction

Projects for developing rural tourism and craft for 2004-2006 are being implemented within the framework of the activity "Promotion of Rural Tourism and Craft" of the Single Programming Document priority "Promotion of Development of Rural Areas and Fisheries", which is co-financed by the Guidance Section of the European Agriculture Guidance and Guarantee Fund (hereinafter – EAGGF). This priority was comprised of EUR 138 643 255 with co-financing of the EAGGF. It should be noted that the planning period for 2004-2006 is the first time when Latvia receives the EU support with the assistance of the Structural Fund, thereby, there are some problems to be taken into account in the planning period for 2007 – 2013 (LR Finansu ministrija, 2007). One of the main problems is supervision of the Fund utilisation.

The Rural Support Service (hereinafter – the RSS) is a state administration institution, and operates under the supervision of the Ministry of Agriculture. In accordance with the competence, the RSS is proceeding to supervise the projects implemented within the framework of financial instruments of the EAGGF and the European Fisheries Fund for the programming period of 2004-2006 (Rural Support Service, 2010). The public information on the EU support and finance receivers is found on the RSS home page, which are the Structural Fund agreements paid by the EAGGF as of 30 December 2008. The support applicant, the project name, the support amount as well as the information on Structural Fund receivers, who have returned the received support, are mentioned there. Only 2 of 239 support receivers have returned the received support. The aim of this study is to identify the support receivers of the activity "Promotion of Rural Tourism and Craft" for the period of 2004-2006 who have used the EU funds for rural tourism business and who are doing the business at the moment. The tasks of the study are to select fifty support receivers according to the

particular criteria, to conduct the questionnaire by using e-mail, and to summarise the results obtained during the questionnaire in order to find out whether they still offer rural tourism services.

Research results

Latvian tourism industry is currently facing such problems as the offer of inadequate quality tourism products and services, typical seasonality and its caused turnover fluctuations of tourism commercial activity, insufficiently used cooperation opportunities on all levels, rapid growth of the value added tax rate, and a lack of single vision for development. Irrespective of the mentioned, tourism in Latvia is considered to be as one of the opportunities for the state economic development and priorities of the service industry because it is an important source of income from export that provides sufficient contribution to the national domestic product (Latvian Tourism Development Agency, 2010).

1. Tourism in Latvia

Data gathered by the Central Statistical Bureau show that in 2010, foreign travellers crossed the Latvian border for 5.04 million times. In its turn, more than 1.3 million people were serviced in hotels and other tourist sites in Latvia, of whom 33% were Latvian inhabitants, others - mainly from Russia, Germany, Lithuania, Finland, Norway, Estonia, and Sweden. In 2010, the increase of a number of people accommodated in hotels and similar sites was 11.6% in Latvia that was one of the best indicators.

However, Latvia compared with Lithuania and Estonia has the lowest indicators of a number of people accommodated and serviced in hotels. If Lithuania has a bit better result, then Estonia sufficiently overtakes in respect of a number of foreign tourists accommodated and serviced, that indicates on the necessity to promote longer staying in Latvia and travelling for more days

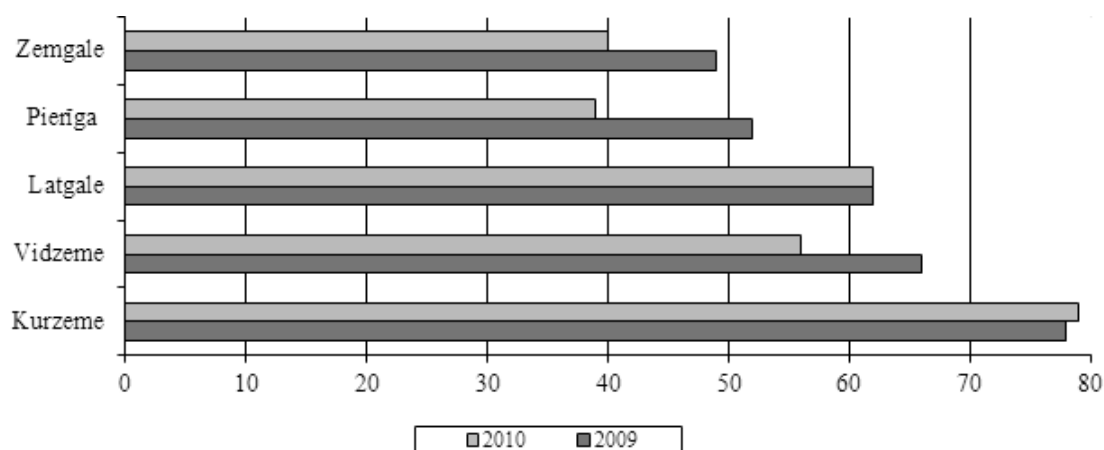
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Table 1

Indicators of rural tourism accommodation sites

Year	Number of sites	Number of visitors	of which – non residents
2007	312	156069	12965
2008	376	131327	11245
2009	308	58095	7479
2010	276	47877	4582

Source: Central Statistical Bureau of Latvia, 2011



Source: Central Statistical Bureau of Latvia, 2011

Fig. 1. Number of rural tourism accommodation sites by regions

of the local tourists around Latvia (Latvian Tourism Development Agency, 2010).

In its turn, in 2010, a number of people serviced by the rural tourism accommodation sites decreased in Latvia. A number of accommodation sites decreased by 32 that are comparatively two times less than in 2009 (Table 1). In 2010, there were 276 rural tourism accommodation sites left.

In 2010, a number of rural tourism accommodation sites near Riga, in Vidzeme and Zemgale decreased the most. It is quite stable in Latgale. However, in Kurzeme the small increase of a number of rural tourism accommodation sites has been observed (Figure 1).

Opportunities for the development of tourism product and services are encumbered with a lack of investments in tourism infrastructure. Investments in tourism public infrastructure are financially great, with high percentage of risk and long term of return. Economic return of the investments made in tourism infrastructure is divided between direct infrastructure investors and other service providers, more percentage for the latter. The world practice shows that attraction of private investments is promoted when investing the state funds in the public tourism infrastructure (LR Finansu Ministrija, 2007).

2. Tourism project support receivers

The research included support receiver projects for 2004-2006 within the framework of "Promotion of Rural Tourism and Craft" dealing out the rural tourism, which is co-financed by the Guidance Section of EAGGF. Projects of support receivers were selected according to two key

words of their titles. The first key word was related to the name of the accommodation site or similar establishment: recreation base/complex, holiday house, campsite, the house used for rural tourism/ house with bath/ house with outhouse, tourism site, gathering house, hotel, guest house/ building; the second key word was related to start of work of accommodation site: construction, building, or establishment. Fifty project titles confirmed with such key words.

In order to conduct the necessary research, home pages of particular support receivers were searched in the Internet resources as well as contact information – e-mails and phone numbers. It was possible to find six support receivers (Table 2) only in the information catalogues but there were no home page addresses and contact information regarding the project (accommodation site). The relevant information about the EU Funds was found in the Internet resources regarding two support receivers but one support receiver had returned the received funding.

"Milina" Ltd – the receiver of the funding from the Structural Funds has returned the received support (Rural Support Service, 2008).

"Hincenbergs" Ltd – the RSS requested to return money from "Hincenbergs" in 2006, because it had not finished the project. However, the "Hincenbergs" has not returned money until now.

"Augulienas Muiza" Ltd – representatives of the newspaper "Diena" had doubts about "Augulienes Muiza" existence and activities. The newspaper representatives contacted a superintendent of "Augulienes Muiza" for

Table 2

Support receivers whose projects are not available in the Internet resources

No	Support receiver	Name of the project
1.	"Hincenbergs" Ltd	Construction of the hotel
2.	Farm "Vizbuli"	Construction of the tourism accommodation in the farm "Vizbuli"
3.	"Milina" Ltd	Construction of the recreation complex with the hotel "Milina"
4.	Farm "Upmalas"	Construction of the holiday house "Ezermala"
5.	"Augulienas Muiza" Ltd	Establishment of the hotel in the complex of Auguliena manor house
6.	Farm "Krastkalni"	Construction of the tourism house "Mednieku Namins"

Source: Lauku atbalsta dienests, 2008

Table 3

Support receivers whose e-mails do not work

No	Support receiver	Name of the project
1.	"Xcelsus" Ltd	Establishment and equipping of the guest house "Excelsus" at Ramava
2.	"KKM" Ltd	Construction of the hotel and recreation complex "Rojas Perle" and purchase of equipment
3.	"Laimas Nams" Ltd	Construction of the recreation complex "Laimas Nams"

Source: Lauku atbalsta dienests, 2008

Table 4

Project receivers who replied within one hour

No	Support receiver	Name of the project
1.	"Usmas Kempings" Ltd	Construction of the guest house with 30 places in Usma parish "Priekalni"
2.	"Courland Village" Ltd	Establishment of the rural tourism recreation place "Pinka"
3.	"Riekstnieki" Ltd	Construction of the house and subsidiary building to be used for rural tourism purposes
4.	"Alksnos Cetri Veji" Ltd	Construction of the guest house for setting up business
5.	"Anfeja" Ltd	Construction of the guest house "Rudzupukes"
6.	"Latlauva" Ltd	Establishment of the campsite and playground
7.	"Saro" Ltd	Construction of the guest house "Meidrops"
8.	Farm "Gala Sparini"	Construction of the dwelling house and bath to be used for rural tourism purposes
9.	"Baltezers" Ltd	Construction of the resort hotel "Baltezers"

Source: Lauku atbalsta dienests, 2008

premises for wedding booking. The superintendent answered that the repair works were being done and he would call back later. However, superintendent did not call back. When the representatives of "Diena" arrived at the "Augulienes Muiza" they saw that there was no guest house but a private house (Jemberga, 2009).

Contact information in the Internet resources was found regarding forty-four support receivers. The author contacted all of them by e-mail and tried to book rooms in their accommodations. Three answers were received from Mail Delivery Service that particular mail user did not exist (Table 3). The indicated home pages in different accommodation catalogues do not work anymore.

Regarding "Foil" Ltd, its home page is available only in Russian. There is no information on accommodation, either. However, it is mentioned that in 2007, the United Nations Organisation acknowledged the eco-biologic project as a model and ability to provide education services on the highest level. At the home page, there

are some articles about seminars, which have taken place in the guesthouse. Yet, in the explanatory dictionary, it is defined that tourism (tourist) accommodation is organised and non-organised sport and recreation tourist accommodation site, catering and recreation company where usually events, especially related to tourism, are organised: hiking, competitions, acquisition of skills of specialised kinds of tourism (LR Ekonomikas Ministrija, 2008), not complying with "Foil" Ltd activity of the supported project.

As accommodation sites or similar establishments are hospitality companies, the speed of the provided responses is taken into account. Within the first hour, the replies were received from nine project receivers (Table 4). Seven accommodation sites were able to offer accommodation on the indicated dates, except rural tourism recreation site "Pinkas", which was closed for the winter but there was an opportunity to get accommodation in other accommodation sites of the same company, and

Table 5

Project receivers who replied within one day

No	Support receiver	Name of the project
1.	"Ario & Partneri" Ltd	Establishment of the recreation complex "Dzirnavas"
2.	"Orthos" Ltd	Establishment of the hotel in Kaltene for disabled people
3.	"Limbazu Celotajs" Ltd	Construction of the campsite
4.	"Roksanala" Ltd	Construction of the recreation complex "Kuldidznieki"
5.	"Debesu Bloda" Ltd	Construction and equipping of the guest house "Debesu Bloda"

Source: Lauku atbalsta dienests, 2008

Table 6

Project receivers who replied within two days

No	Support receiver	Name of the project
1.	"Kriki1" Ltd	Establishment of the rural tourism and recreation complex "Kriki"
2.	"Aitinlauvas" Ltd	Construction of the guest house "Aitinlauvas"
3.	"Zivsalas" Ltd	Construction of the house to be used for rural tourism purposes
4.	"Emila Pasaule" Ltd	Construction of the guest house "Udri" and the house to be used for rural tourism purposes
5.	"Cirimas Ezerkrasts" Ltd	Construction of the recreation complex in Zvirgzdene parish "Ezernieki" of Ludza district
6.	Farm "Turbas"	Construction of the recreation complex "Turbas"
7.	"Susurins" Ltd	Construction and equipping of the gathering house "Krusta Lacites"

Source: Lauku atbalsta dienests, 2008

Table 7

Project receivers who replied within three days

No	Support receiver	Name of the project
1.	"Metra A" Ltd	Establishment of the guest house "Metras Maja" within the individual company "Metra" owned by Valdis Drulle
2.	"Piejuras Nams" Ltd	Construction of the house to be used for rural tourism purposes and purchase of equipment
3.	"Korande" Ltd	Construction of the hotel and skating-rink within the recreation and tourism complex "Korande"
4.	"Berzkalni" Ltd	Establishment of the guest house "Berzkalni"
5.	"Edene LS" Ltd	Construction of the "Bicanu Ezers" guest house
6.	"Fregate" Ltd	Construction of the holiday house in Kaunata parish "Eisaki" of Rezekne district
7.	"Lenkas" Ltd	Construction of the guest house "Lenkupes"

Source: Lauku atbalsta dienests, 2008

"Usmas Kempings" was overbooked and there would be some free rooms only on the next day.

On the first day, five replies were received from project receivers (Table 5). Three accommodation sites were able to offer accommodation, except the hotel in Kaltene that did not work in the winter but would restart its work from May. The guesthouse "Debesu Bloda" had celebration on the indicated dates and it could not offer anything else.

On the second day, seven replies were received from project receivers (Table 6). Two accommodation sites were able to offer accommodation, except the recreation

complex "Turbas" that was overbooked on the indicated dates. However, it offered accommodation in other sites of the same company.

On the third day, seven replies were received from project receivers (Table 7). Six accommodation sites were able to offer accommodation, except "Fregate" Ltd, as the whole holiday house was overbooked.

On the fourth day, only one reply was received. On the eighth day the last reply was received (Table 8) from the farm "Vitoli" that was not able to offer accommodation because they did not work in the winter.

Table 8

Project receivers who replied after three days

Nr.	Support receiver	Name of the project
1.	"Liepenes Rundales" Ltd	Construction of the campsite "Jeni" and purchase of equipment
2.	Farm "Vitoli"	Construction of the rural guest house in Kaunata parish

Source: Lauku atbalsta dienests, 2008

Table 9

Support receivers who did not reply to e-mails but were contacted by phone

No	Support receiver	Name of the project
1.	"Kadikis R" Ltd	Establishment of the holiday house "Dzirnavnieki"
2.	Farm "Saulstari – 1"	Construction of the house with bath to be used for rural tourism purposes in More parish "Saulstari" of Riga district
3.	"VN Deksnis" Ltd	Establishment of the guest house "Deksnis"
4.	"Krifonis" Ltd	Construction of the recreation complex
5.	"Ventlejas" Ltd	Construction of the guest house and campsite "Ventaskrasti" and purchase of equipment
6.	"Vecsimani" Ltd	Construction of the holiday house "Vecsimani"
7.	"Lauku Ainavas" Ltd	Establishment of the recreation complex
8.	"Milzkalnes Upesloki" Ltd	Construction of the house "Upesloki" to be used for rural tourism purposes
9.	"G.M.Koks" Ltd	Establishment of the recreation complex "Pukarags"

Source: Lauku atbalsta dienests, 2008

Table 10

Support receivers out of contact

Nr.	Support receiver	Name of the project
1.	"Foil" Ltd	Establishment of tourism and recreation centre "Lizari"
2.	"Sabris V" Ltd	Construction of the hotel in Vilani parish

Source: Lauku atbalsta dienests, 2008

E-mails are depending on the Internet connection, and the author called to support receivers who did not reply to e-mails. Three of support receivers' phones did not operate; four of them – could offer accommodation on particular date; five of them – could not offer accommodation providing different reasons; one - replied that accommodation did not work in the winter; and one - replied that the accommodation was under reconstruction.

Two support receivers not contacted by phone were "Foil" Ltd and "Sabris V" Ltd. They did not reply to the e-mail and they were not reachable by phone.

Conclusions

1. In 2010, was a sufficient increase in a number of people who used hotels and similar accommodation sites in Latvia. However, examining individual rural tourism accommodations, it was observed that the number of people serviced had decreased.
2. Reply to e-mails and phone calls was not received from eleven of support receivers of the period of 2004-2006 within the activity "Promotion of Rural Tourism and Craft" dealing out the rural tourism

that is 1/5 of the support receivers included in the research.

3. The study presents that 1/5 of the support receivers does not provide rural tourism services. Thereby, the incompleteness of supervision mechanism should be settled and improved in order to supervise the granting and utilisation of the funds of the support receivers. It would improve the quality of rural tourism accommodation sites but not the quantity – number of beds, in order to provide people with services with value added.

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Factors Affecting the Development of Catering Enterprises in Latvia

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Abstract. In the European Union, including Latvia, catering services are the largest industry in the hospitality sector. The industry of catering services generates the largest part of value added and the majority of jobs in the hospitality sector. The research hypothesis is that the development of catering enterprises is unequal across the regions of Latvia, and various factors having different correlative interrelations affect it. The research aim is to investigate the factors affecting the development of catering enterprises in Latvia. According to the research result, low-turnover micro enterprises dominate in the industry of catering services in Latvia, and the number and proportion of enterprises of this size tend to increase. Medium and large catering enterprises in Latvia are concentrated in Riga region. The geographic distribution of catering enterprises in the regions of Latvia is uneven: the highest concentration of enterprises is in Riga region. In the period of 2005-2010, the number of enterprises has increased in the regions but these changes were insignificant. In Latvia, the number of catering enterprises per 1000 inhabitants significantly lags behind that in other European countries. A correlation analysis showed that household expenses on restaurants, cafes, and hotels ($r=0.97$); the number of visitors in tourist accommodations ($r=0.93$); food expenses of foreign overnight travellers ($r=0.91$); the number of foreign visitors in tourist accommodations ($r=0.74$); and household expenses on food and non-alcoholic beverages ($r=0.65$) affected the turnover of catering enterprises in Latvia. However, the number of residents ($r=0.78$) and the average net monthly wage of employees ($r=0.53$) affected the number of catering enterprises in Latvia. An analysis of the factors affecting the development of catering enterprises showed that during the economic crisis, households in Latvia concentrated their economic resources for satisfying their primary needs by reducing their expense on eating outside their home. The overnight traveller expense on food declined in Latvia, thus, the demand for services of catering enterprises also fell. After comparing the number of visitors in tourist accommodations in the regions of Latvia and the number of catering enterprises in the regions of Latvia, a causal relationship was observed – the number of catering enterprises was greater in the regions having a greater number of visitors in tourist accommodations.

Key words: catering enterprises, development, factors, hospitality industry.

JEL code: M21

Introduction

The Ministry of Economics of the republic of Latvia defines tourism as one of the export-oriented service industries that has to be developed in the country, as this industry has a large multiplicative effect on the economy, and the industry's growth stimulates the demand for services of catering, transportation, entertainment, and commerce (Ministry of Economics, 2009).

Latvian businessmen also regard tourism as a prospective industry of the national economy (SEB bank, 2010).

An important component of tourism is a hospitality industry made up of industries of accommodation and catering (Eurostat, 2009).

In the European Union, including Latvia, the industry of catering services is the largest industry in the hospitality sector.

According to statistical data, the largest proportion (80% on average) has been composed of economically active market sector statistical units (hereinafter catering enterprises) in the hospitality industry in Latvia in the period of 2005-2010. They created 81% of jobs on average in the hospitality industry as well as made up 73% of the industry's total turnover on average, and this proportion tended to rise (Central Statistical Bureau of Latvia, 2012c).

In 2006 in the European Union (EU-27), the industry of catering services created 2/3 of the hospitality

industry's total value added and 3/4 of this industry's jobs (Eurostat, 2009).

Therefore, it is important to identify the factors determining the development of the industry of catering services.

Research hypothesis: the development of catering enterprises is unequal across the regions of Latvia, and various factors having different correlative interrelations affect it.

The research **aim** is to investigate the factors affecting the development of catering enterprises in Latvia.

The following **tasks** are set to achieve the research aim:

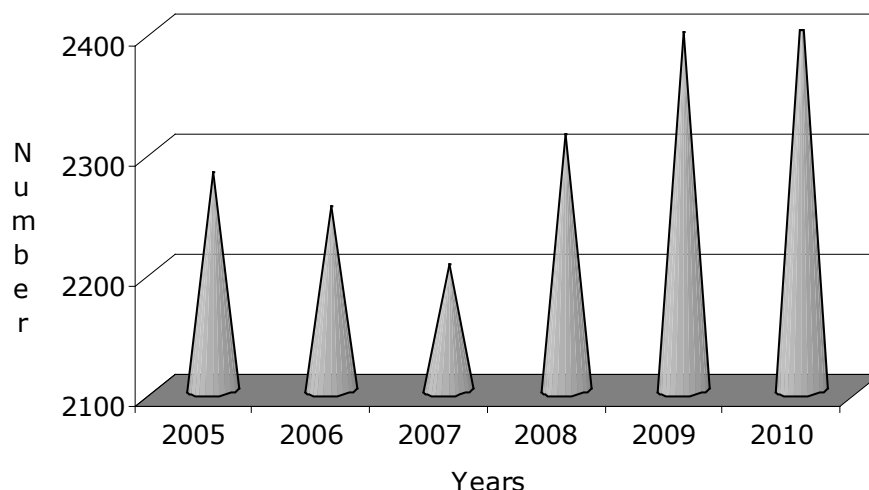
- 1) to investigate the changes in indicators of catering enterprises in Latvia;
- 2) to identify the factors affecting the performance of catering enterprises and investigate their mechanism of effects;
- 3) to analyse the changes in the factors affecting the performance of catering enterprises.

The research **object** is enterprises engaged in the industry of catering services. The research **subject** is their affecting factors.

The research period is extended from 2005 to 2010.

The present research is based on data of the CSB surveys. Documents developed by the Ministry of Economics of the Republic of Latvia as well as Eurostat

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Source: authors' construction based on the Central Statistical Bureau of Latvia, 2012a

Fig. 1. Changes in the number of catering enterprises in Latvia in 2005 - 2010

data were used to achieve the aim, execute the tasks, and prove or reject the hypothesis.

The following research **methods** were employed: the monographic method, statistical methods for economic analysis, synthesis and analysis, and pair-wise correlation analysis.

Research **novelty** – the factors affecting the development of catering enterprises were identified and analysed by means of pair-wise correlation analysis.

Research results and discussion

1. Characteristics of catering enterprises in Latvia

Catering enterprises provide food and beverage supply services by offering food and beverages both for immediate consumption, and to tourists and domestic consumers. Traditional restaurants, self-service restaurants or restaurants offering take-away food as well as permanent or temporary catering places with or without seats provide catering enterprises (Central Statistical Bureau of Latvia, 2011).

One of the indicators characterising the development of catering enterprises is a number of these enterprises (Figure 1).

According to the data of Figure 1, the number of catering enterprises gradually decreased in Latvia in the period of 2005-2007 (the economic boom period). I. Millere (2009) explains the decrease in the number of catering enterprises by the fact that market entry barriers emerged in the country in 2005, which hindered the establishment of new catering enterprises in the industry. Another reason, which affected the decrease, was Latvia's accession to the EU, which increased the number and scope of administrative procedures. The authors of the present paper agree to this opinion.

The number of catering enterprises decreased mostly in Latvia's capital city, whereas the change in its regions was insignificant.

Totally, the number of catering enterprises in the country increased in the period of 2008-2010.

According to the CSB data, the number of enterprises employing 2-9 individuals gradually decreased until 2008, whereas a different trend was observed after 2008: the number of large and medium enterprises decreased, while that of micro enterprises increased (Central Statistical Bureau of Latvia, 2012c).

Figure 2 shows that micro enterprises dominated in the industry of catering enterprises, and their number and proportion increased during the economic recession.

The number and proportion of medium-size catering enterprises was low, and they were mainly concentrated in the capital city – Riga. In the period of analysis, 6.6 large catering enterprises operated in Latvia on average and their number was insignificant. Therefore, the data of Figure 2 do not include them, as their proportion did not exceed 1%. All large enterprises were located in Riga. The authors explain the concentration of medium and large enterprises in the capital city by the large number of residents, and domestic and foreign tourists in this region.

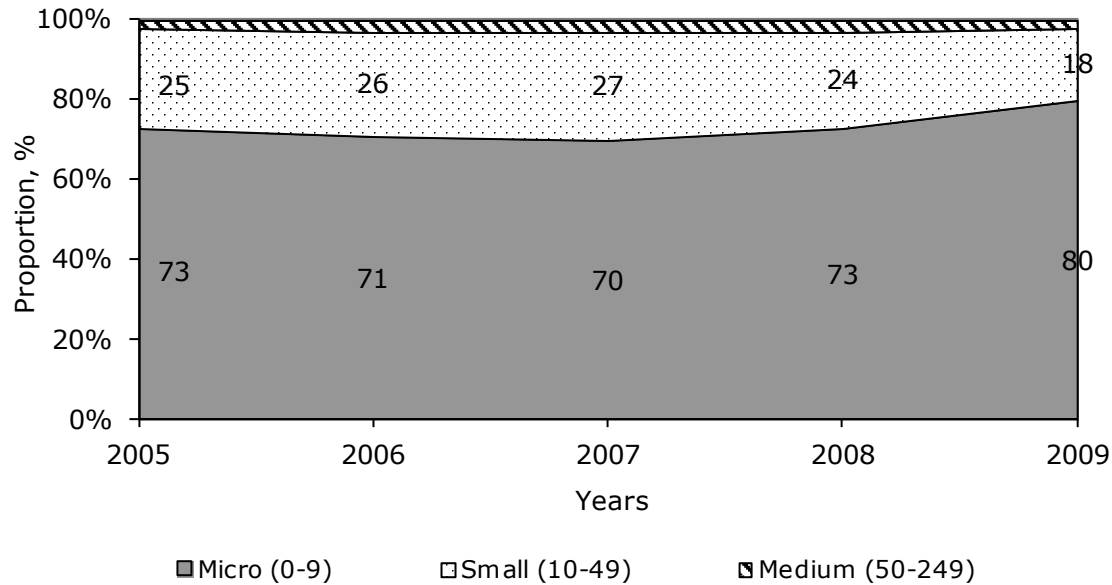
The geographic distribution of catering enterprises is uneven in the regions of Latvia (Table 1).

The data of Table 1 show that the highest concentration of enterprises engaged in the industry of catering services was in Riga region where 1260 enterprises or 54.5% of all catering enterprises operated on average.

On average, 14.3% of catering enterprises operated in Pieriga region. In the other regions, the proportion of enterprises was low, and no changes in their percentage distribution occurred in the period of 2005-2010.

Regardless of the decrease in the total number of catering enterprises until 2007, the turnover of the industry's enterprises increased from year to year (Table 2).

According to the data of Table 2, an increase in the turnover of catering enterprises was observed also in 2008 with the emergence of the first indications of an economic crisis. An upward trend in turnover was also observed in the country until 2005. Millere (2009) believes that it indicated the development and expansion of these enterprises.



Source: authors' calculations based on the Central Statistical Bureau of Latvia, 2012c

Fig. 2. Percentage distribution of the number of catering enterprises by size group in Latvia in 2005 – 2009

Table 1
Percentage distribution of the number of catering enterprises by region in Latvia in 2005 – 2010

Region	2005	2006	2007	2008	2009	2010
Riga	56	55	54	54	54	54
Pieriga	14	14	14	14	15	15
Vidzeme	6	7	7	7	7	7
Kurzeme	10	10	10	10	9	9
Zemgale	7	8	8	8	8	8
Latgale	7	7	7	7	7	7

Source: authors' calculations based on the Central Statistical Bureau of Latvia, 2012a

Table 2
Total turnover, average turnover, and average labour productivity of catering enterprises in Latvia in 2005 – 2010

Indicators	2005	2006	2007	2008	2009	2010
Turnover, thou. LVL	196 646	254 218	301 735	311 432	216 547	217 630
Annual increase rate, %	-	29	19	3	-30	1
Average turnover (per enterprise), LVL	87 476	113 187	139 563	135 997	91 757	102 222
Annual increase rate, %	-	29	23	-3	-33	11
Average labour productivity (per employee), LVL	8 176	10 067	11 795	12 118	10 560	11 196
Annual increase rate, %	-	23	17	3	-13	6

Source: Central Statistical Bureau of Latvia, 2012 c and authors' calculations

Irrespective of the fact that the turnover of catering enterprises increased, their annual increase rate gradually declined from 29% in 2006 to 3% in 2008. A significant decrease in their turnover was observed in 2009, while it slightly increased in 2010. Since the turnover increased

faster than the number of employees in this industry, the average labour productivity also rose in the period of 2005-2008. In 2009, the turnover decreased much faster than the number of employees in the industry, thus, the average labour productivity declined as well. In 2010,

Table 3

Number of catering enterprises per 1000 inhabitants in Latvia and its regions in 2005 - 2010

Region	2005	2006	2007	2008	2009	2010
Latvia	1.0	1.0	1.0	1.0	1.1	1.1
Riga	1.8	1.7	1.7	1.8	1.8	1.8
Pieriga	0.8	0.6	0.8	0.9	0.9	0.9
Vidzeme	0.6	0.6	0.6	0.7	0.7	0.8
Kurzeme	0.7	0.7	0.7	0.8	0.8	0.7
Zemgale	0.6	0.6	0.6	0.6	0.7	0.7
Latgale	0.4	0.4	0.5	0.4	0.5	0.5

Source: authors' calculations based on the Central Statistical Bureau of Latvia, 2012; 2012a

the labour productivity increased at the expense of a decrease in the number of employees.

Since micro enterprises dominate in the industry, an average turnover per enterprise is insignificant. This indicator has a similar trend compared with the industry's total turnover.

The indicator "number of enterprises per 1000 inhabitants" may be used to characterise the development of catering enterprises.

The data of Table 3 show that the number of catering enterprises per 1000 inhabitants both in the entire Latvia and in all its regions slowly increased. It indicated the development of enterprises in the industry. In Latvia, there was only 1 catering enterprise per 1000 inhabitants, while in the capital city this indicator was 1.8. In the other regions, the number of catering enterprise per 1000 inhabitants was below the average indicator in the country, and there were no significant differences among the regions, except the regions of Latgale and Riga. The large number of residents in Daugavpils city (the second largest city in Latvia after the capital city) reduced this indicator for Latgale region. The total number of catering enterprises in this region is the smallest one in the country.

If compared with European countries, this indicator in Latvia significantly lagged behind the respective indicator of other European countries. In the North-European countries, this indicator was 2 times greater, in the Middle-European countries – 3-4 times, while in the South-European countries – even 7 times greater (data of 2006) (authors' calculations based on Eurostat, 2009; Central Statistical Bureau of Latvia, 2008a). These data showed that not only residents but also foreign tourists affected the demand for services of catering enterprises. The high capacity utilisation rate of catering enterprises in such tourism regions as Spain (6.0), Portugal (8), Cyprus (8), and Greece (8.4) indicated it (authors' calculations based on Eurostat, 2009; Statistical Yearbook of..., 2008).

2. Identification of the factors affecting the development of catering enterprises

The authors performed a pair-wise correlation analysis to identify the factors affecting changes in the number and turnover of catering enterprises. The correlation analysis showed that a medium-strong linear correlation existed between the variable "turnover of catering enterprises", and the factors "household expenses on food and non-alcoholic beverages" and "number of foreign visitors in tourist accommodations" (correlation

coefficients were 0.65 and 0.74, respectively). A strong positive linear correlation existed between the turnover of catering enterprises, and the factors "household expense on restaurants, cafes, and hotels", "number of visitors in tourist accommodations", and "food expense of overnight travellers" (the correlation coefficients were 0.97, 0.93, and 0.91, respectively). The turnover of catering enterprises increases with the increase in the household expense on restaurants, cafes, and hotels as well as the number of visitors in tourist accommodations and the food expense of overnight travellers in Latvia.

According to the pair-wise correlation analysis, there was no correlation between the turnover of catering enterprises and the number of residents. Therefore, changes in the number of residents in the country did not affect changes in the turnover of catering enterprises. A weak positive correlation existed between the average monthly net wage of employees and the turnover of catering enterprises ($r=0.4$).

By means of the pair-wise correlation analysis, the authors found out (Table 4) that a strong negative linear correlation existed between the variable "number of catering enterprises" and the factor "number of residents" in the regions of Latgale, Zemgale, and Vidzeme. It means that the number of catering enterprises increased with a decrease in the number of residents in these regions. In Pieriga region, there was a strong positive linear correlation between these variables, i.e. the number of catering enterprises increased with the increase in the number of residents in this region. It may be explained by the fact that Pieriga region was the only region in the country that had a positive change in the number of residents. In the regions of Riga and Kurzeme, a weak negative linear correlation existed between the number of catering enterprises and the number of residents, while a medium-strong negative linear correlation was observed in the entire country.

According to the pair-wise correlation analysis, there was a medium-strong negative linear correlation between the number of catering enterprises and the average monthly net wage of employees in all the regions. There was a weak negative linear correlation between the variable "number of catering enterprises" and the factor "number of visitors in tourist accommodations" in the regions of Latgale, Zemgale, and Vidzeme, i.e. the regions in which the number and proportion of tourists were the lowest in the country, whereas a weak positive linear correlation was identified in Kurzeme region. There was a medium-strong linear correlation between these

Table 4

Values of correlation coefficients

Region	Factors				
	Number of residents	Average monthly net wage of employees	Number of visitors in tourist accommodations	Household expense on food and non-alcoholic beverages	Household expense on restaurants, cafes, and hotels
Latvia	-0.78	0.53	-0.44	0.28	-0.51
Riga	-0.37	0.75	-0.54	-0.04	-0.69
Pieriga	0.94	0.75	-0.61	0.37	-0.45
Vidzeme	-0.93	0.65	-0.49	0.42	-0.39
Kurzeme	-0.28	0.61	0.13	0.55	0.41
Zemgale	-0.91	0.55	-0.36	0.36	-0.25
Latgale	-0.82	0.68	-0.26	0.61	-0.08

Note: Quantitative variable – number of catering enterprises

Source: authors' calculations

Table 5

Household expenses on food and non-alcoholic beverages as well as restaurants, cafes, and hotels and their proportion in the total expense on consumption in Latvia in 2005 – 2010

Year	Expense on food and non-alcoholic beverages		Expense on restaurants, cafes and hotels	
	on average per household member a month, LVL	proportion, %	on average per household member a month, LVL	proportion, %
2005	39.65	31.0	7.15	5.6
2006	43.69	28.1	9.17	5.9
2007	51.01	25.5	11.71	5.8
2008	59.33	25.6	12.83	5.5
2009	52.04	26.7	8.46	4.3
2010	50.47	28.3	6.87	3.9

Source: Household Budget in..., 2006; Household Budget Survey..., 2007; 2008; 2009; 2010; 2011 and authors' calculations

variables in the regions of Riga and Pieriga. No correlation existed between the number of foreign visitors in tourist accommodations and the number of catering enterprises.

A weak linear correlation was observed between the total household expense on consumption, the household expense on food and the number of catering enterprises in all the regions of Latvia, except the regions of Kurzeme and Latgale. A medium-strong linear correlation existed between these variables in the regions of Kurzeme and Latgale.

Either a weak or a medium-strong linear correlation existed between the number of catering enterprises and the household expense on restaurants, cafes, and hotels in all the regions of Latvia, except Kurzeme where a weak positive linear correlation was observed.

So, the pair-wise correlation analysis performed by the authors showed that several socio-economic factors affected the development of catering enterprises. The authors will present their research findings on the changes in the main factors for the period of analysis in the paper, i.e. 1) household expenses on restaurants, cafes, and hotels; 2) household expenses on food and non-alcoholic beverages; 3) the number of visitors in tourist accommodations; 4) the number of foreign

visitors in tourist accommodations; and 5) food expenses of overnight travellers.

3. Analysis of the factors affecting the performance of catering enterprises

The private consumption of Latvian residents significantly increased in the period until 2008. The household expense on consumption per household member a month gradually rose from LVL 128 in 2005 to LVL 232 in 2008 or by 81% in the period of 2005-2008 (Household Budget Survey..., 2008).

An increase in wages positively affected the increase in the household expense on consumption. In Latvia, the average wage of employees engaged in the national economy rose even two times in the period of 2005-2008, while the average size of old age pensions increased by 56% (Central Statistical Bureau of Latvia, 2012d; Mistre, Muska, 2011). An increase in the household expense on consumption was promoted by loans widely offered by banks and other financial institutions at acceptable interest rates (Household Budget Survey..., 2008).

In 2009, an increase trend in the household expense on consumption was not observed anymore. The household consumption expense per household member

Number of visitors in tourist accommodations in Latvia in 2005- 2010

Indicator	2005	2006	2007	2008	2009	2010
Number of visitors, thou.	1155	1330	1487	1556	1114	1312
including foreign visitors, thou.	730	816	845	945	754	878
Proportion of foreign visitors in the total number of visitors, %	63	61	57	61	68	70

Source: Central Statistical Bureau of Latvia, 2012b and authors' calculations

a month in 2009 amounted to LVL 195, which was LVL 37 or 16% less than in 2008 (Household Budget Survey..., 2010).

The decrease in the household expense on consumption was related with a decrease in the employment rate caused by the economic crisis in 2009 and a decrease in wages. The number of job seekers almost doubled in 2009 and reached 200.7 thousand or 16.9% of economically active population. The average net monthly wage of employees engaged in the national economy fell by 2.3%. However, the average size of old age pensions of pensioners registered at social security institutions rose by 16.1%. Financial liabilities of households might cause an additional effect on the household expense on consumption, as many households that took consumption loans and mortgage loans paid back significant sums on borrowed funds (these sums were not classified as expenses on consumption) and, thus, they were forced to limit their expenses on consumption (Household Budget Survey..., 2010).

The economic crisis negatively affected domestic consumption in 2010 as well: the household expense on consumption shrank by 8.8% (Household Budget Survey..., 2011). In 2010, wages also continued falling, whereas the unemployment rate rose; in the result, many households were forced to subsist on social benefits of the central and local government. According to a survey of the study "DnB Nord Latvian Barometer" conducted in May of 2011, totally 31% of Latvian residents (aged from 18 to 74) had taken at least one loan, and they were paying it back (Household Budget Survey..., 2011).

The percentage distribution of household consumption expenses in Latvia changed in relation with changes in household income.

In the period of 2005-2007, the proportion of expense on food and non-alcoholic beverages in the total consumption expense declined from 31% in 2005 to 25.5% in 2007. Such a downward trend was relative, as the average monthly expense on food per household member continued increasing from LVL 39.65 in 2005 to LVL 51.01 in 2007. Although, the proportion of expense on food in 2008 remained constant compared with 2007, in real prices the expense on food increased by 16%; however, in constant prices this expense decreased by 1.9%, as prices on this group of expense increased by 18% in 2008 (Household Budget Survey..., 2009).

Millere (2009) believes that "a decrease in the proportion of expense on food indicates an increasing trend in consuming food outside home, i.e. the use services of catering enterprises". The authors of the paper also agree to this view, and the CSB data proved it as well.

According to Table 5, in the period of 2005-2008, the average expense on restaurants, cafes, and hotels in household budgets (in real prices) increased from LVL 7.15 in 2005 to LVL 12.83 in 2008. The proportion of expense on restaurants, cafes, and hotels in the total expense on consumption also gradually increased. In this period, an annual increase rate for the expense on restaurants, cafes, and hotels exceeded that for the expense on food and non-alcoholic beverages.

In 2009, the percentage distribution of household expenses changed, as households adapted to the decrease in economic resources. The main priority of households still was expenses on food in 2009. Households spent 27% of their income on food on average in 2009; the proportion of this expense slightly rose to 26% compared with 2008. At the same time, the expense on food decreased from LVL 59.33 to LVL 52.04 per household member a month (a decrease of 12%). Households significantly saved their income on restaurants, cafes, and hotels or 34% in 2009 (Household Budget Survey..., 2010).

In 2010, households spent on food 28% on average, and the proportion of this expense continued rising. At the same time, the real expense on food decreased to LVL 50.47 on average per household member a month (a decrease of 3%). In 2010, the expense on restaurants, cafes, and hotels declined by 19%.

Therefore, beginning with 2009, the demand for catering services in the country started decreasing, thus, the turnover of catering enterprises also declined.

After analysing the percentage distribution of household expenses for the regions of Latvia, one can see that the largest expense on restaurants, cafes, and hotels was specific to households living in the regions of Riga and Pieriga, whereas households living in the regions of Latgale and Vidzeme spent the least on it, i.e. in the regions where the number of catering enterprises was small (Household Budget in..., 2006; Household Budget Survey..., 2007; 2008; 2009; 2010; 2011).

In the period of 2005-2008, the number of visitors in tourist accommodations in Latvia gradually increased and reached almost 1.6 million in 2008, while in 2009 the number of visitors decreased by 28% and fell below the level of 2005 (Table 6).

In 2010, the number of tourists increased by 18%. According to Table 6, the majority or 63% of visitors in tourist accommodations on average were foreign tourists in the period of analysis. The proportion of foreign tourists in tourist accommodations in Riga exceeded even 70%, thus, the proportion of foreign tourists in the rest of Latvia was less than 30% (Muska, Bite, 2012). It also affected the uneven development of catering enterprises in Latvia.

Table 7

Proportion of visitors in tourist accommodations in the regions of Latvia in 2005 - 2010

Regions	2005	2006	2007	2008	2009	2010
Riga	57	55	55	56	62	59
Pieriga	17	18	17	16	15	15
Vidzeme	6	6	6	5	4	5
Kurzeme	11	12	13	15	12	13
Zemgale	3	4	3	2	2	3
Latgale	4	5	5	5	5	4

Source: Muska, Bite, 2012

Table 8

Expenses of foreign tourists in Latvia in 2005 - 2010

Indicator	2005	2006	2007	2008	2009	2010
Expenses of overnight travellers, mln LVL	164.7	228.2	290.7	324.1	270.1	263.5
Annual increase rate, %	-	39	27	11	-17	-2
Food expenses of overnight travellers, mln LVL	50.6	73.0	90.1	88.0	73.7	68.9
Annual increase rate, %	-	44	23	-2	-16	-7
Proportion of food expense in the total expense, %	30	32	31	27	27	26

Source: Tourism in Latvia..., 2006; 2007; 2008; 2009; 2010; 2011

Data on the number of visitors in tourist accommodations in the regions of Latvia are summarised in Table 7.

An analysis of the percentage distribution of tourists by region showed that more than half of visitors in tourist accommodations concentrated in Riga region, while more than 10% of them – in the regions of Pieriga and Kurzeme. In the other regions, the proportion of tourists did not exceed 6% of their total number.

The percentage distribution of tourists was uneven not only by region but also by republican city and municipality. The main destinations for recreation and business in Kurzeme region were Liepaja and Ventspils, in Latgale region – Daugavpils and Rezekne, in Vidzeme region – Cesis municipality and Valmiera, and in Pieriga region – Jurmala. The largest number of catering enterprises outside Riga region was in these republican cities and in Cesis municipality. According to data of the CSB, the largest number of catering enterprises was observed in the mentioned territories of Latvia.

According to a cluster analysis performed by the authors before, the best situation in the sector of tourist accommodations was observed in the capital city of Latvia, i.e. Riga region. In terms of development level, this region is followed by the regions of Pieriga and Kurzeme. The development level of tourist accommodations located in the regions of Vidzeme, Latgale, and Zemgale lagged behind that in the other regions (Muska, Bite, 2011). The same relates with catering enterprises broken down by region in Latvia.

Along with an increase in the number of tourists in Latvia in the period of 2005-2008, the expense of foreign tourists also increased in the country (Table 8).

According to Table 8, the food expense of foreign tourists gradually increased in the period of 2005-2007. Since 2008, the food expense has gradually decreased

irrespective of the fact that the number of foreign tourists in Latvia rose in 2008 and 2010. Therefore, the demand for services of catering enterprises declined as well. An analysis of the annual increase rates showed that the expense on food decreased faster than the total expense of tourists. The expense on food was the second largest item of expenses for foreign overnight travellers (after expenses on accommodation) (Tourism in Latvia..., 2006; 2007; 2008; 2009; 2010; 2011).

Conclusions

1. Low-turnover micro enterprises dominate in the industry of catering services in Latvia, and the number and proportion of enterprises of this size tend to increase. Medium and large catering enterprises in Latvia are concentrated in Riga region.
2. The geographic distribution of catering enterprises in the regions of Latvia is uneven: the highest concentration of enterprises is in Riga region. In the period of 2005-2010, the number of enterprises has increased in the regions but these changes were insignificant. In Latvia, the number of catering enterprises per 1000 inhabitants significantly (2-7 times) lags behind that in other European countries.
3. The turnover of catering enterprises in Latvia was affected by household expenses on restaurants, cafes, and hotels ($r=0.97$); the number of visitors in tourist accommodations ($r=0.93$); food expenses of foreign overnight travellers ($r=0.91$); the number of foreign visitors in tourist accommodations ($r=0.74$); and household expenses on food and non-alcoholic beverages ($r=0.65$).
4. The number of catering enterprises in Latvia was affected by the number of residents ($r=0.78$) and the average net monthly wage of employees ($r=0.53$).

5. During the economic crisis, households in Latvia concentrated their economic resources for satisfying their primary needs by reducing their expense on eating outside their home. The overnight traveller expense on food declined in Latvia, thus, the demand for services of catering enterprises also fell.

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Socio-Economic Value of State-Owned Forests and Potential Economic Solutions for Increasing it

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Abstract. Forests play a very important role in the economy of Latvia, thus, it is topical today to research their socio-economic value and soil expectation value. Data from national forest inventory were used in this study; these data provide the most current and accurate information on the situation in Latvian forests.

The methodology of P. Zalitis was used to calculate the socio-economic value of forests. P. Zalitis is a leading researcher at the Latvian State Forest Research Institute "Silava". Soil expectation value was calculated using a simplified method of M. Faustmann, a German researcher.

The socio-economic value of Latvian state forests is LVL 4.4 billion, whereas soil expectation value is LVL 4.7 billion. The socio-economic value mostly depends on the standing volume and ecological value, while the dominant tree species significantly affect soil expectation value.

Key words: forest value, soil expectation value, national forest inventory, factors influencing forest value.

JEL code: Q23

Introduction

Forest is a priceless natural treasure that provides economic, social, and ecological benefits. Latvia has no minerals, oil, or mountains but it has "green gold", the forests. This study is relevant and topical, since the present and future living conditions depend on the socio-economic value of forests.

The structure and breakdown of forest property ownership has been changing since the beginning of 20th century according to the political environment in the country. The most recent significant changes took place in 1999, when the joint stock company (JSC) "Latvian State Forests" delegated forest management functions. Nowadays, totally 50.3% of all Latvian forests are state-owned and the remaining 49.7% are under different ownership.

The role of forests in the economy keeps getting more and more significant. The wood industry has the highest exports and is the only sector with a balance of trade surplus. In 2011, the JSC "Latvian State Forests" made a payment of LVL 57.7 million to the State Treasury, which is the highest amount in national history (Latvijas valsts mezu..., 2011). Both, the Forest Law and the forest economic policy objectives state that a sustainable forest management and development shall comply with ecological, economic, and social terms but it has not been explained in detail how to achieve this. The present study describes processes that deserve more attention to increase the socio-economic value of forests.

The hypothesis of this study is as follows: state-owned forests have a high socio-economic value, which is affected by various factors.

The aim of this study is to investigate the socio-economic value of state-owned forests and to make economically sound recommendations to increase it.

Enabling objectives are the following:

- 1) to investigate the socio-economic value of forest in state-owned forests;

- 2) to develop solutions for increasing the socio-economic value of state-owned forests.

Legislative acts of the Republic of Latvia, scientific publications, other relevant literature, and internet resources were used in the study.

Materials and methods

National forest inventory (NFI) is a new way of obtaining information on forests in Latvia. One can obtain two kinds of information from it: first, statistical reports on state forest resources, and second, a large database for a more in-depth research on forest stand or tree level.

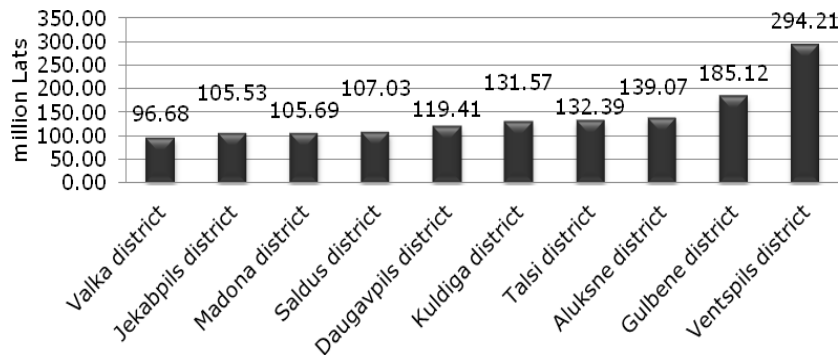
A network of sample plots was created, and statistical information about forest resources in the country was also obtained during the initial stage of NFI from 2004 to 2008. The next step of NFI is to re-measure the established ground plot network. The basis of NFI is a sample plot with a constant radius, an area of 500 m², and a centre that is hidden in the surrounding environment and is fixed with geographical coordinates.

During the first measurement stage of forest inventory in Latvia, the total number of ground plots was 18 710, each of them representing 345 hectares of the country's territory. The NFI data have a very high scientific value, as they provide in-depth information on Latvian forests (Parskats par meza..., 2009).

Forests are not only a source of timber but also a producer of oxygen and a constantly evolving ecosystem where trees, berries, and mushrooms grow, and birds and animals live. Forest owners need to evaluate all the functions of the forest and to understand their social, economic, and ecological significance (Klimmins P. J., 1997). The results of the analysis can be used in the development and improvement of regulatory enactments and in the drafting of new enactments (Bettinger et al., 2009).

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Source: authors' calculations and construction

Fig. 1. Ten highest socio-economic values of Latvian state forests by district in 2004 – 2008, LVL million

Peteris Zalitis, a leading researcher of the Latvian State Forest Research Institute "Silava", has developed a methodology for calculating forest indemnity value. Forest indemnity value shows the social, economic, and ecological significance of forest from both the point of view of the owner and the community.

The two most important components of forest ecosystem regarding forest indemnity value are forestland and growing stock: $MV = ZV + KV$, where MV – forest value, ZV – forestland value, and KV – forest stand value. The following equation is used to calculate forest value (1):

$$MV \text{ (points)} = ZV \times K_{\text{ekol}} \times K_{\text{soc}} + \frac{V_{\text{fakt}}}{V_m} \times ZV(1 + R \times i_v) = ZV \left[K_{\text{ekol}} \times K_{\text{soc}} + \frac{V_{\text{fakt}}}{V_m} (1 + R \times i_v) \right], \quad (1)$$

where:

- ZV – economic value of forestland;
- K_{ekol} – ecological value of forestland;
- K_{soc} – social value of forestland;
- V_{fakt} – current stock volume;
- V_m – target stock volume;
- R – ratio of the values of wood-produced oxygen and timber products
- i_v – adjustment coefficient (Zalitis, 2001).

Forest is an ecosystem, which provides the community with social and ecological benefits, characterised by the value of forestland, and economic benefits characterised by the value of the growing stock. Forest stand value includes the value of the produced oxygen. However, the aim of this study is to analyse the socio-economic value of forests, thus, the net value of wood is not looked at separately. According to a forest scientist Zalitis, "we are all co-responsible for maintaining and maximising the socio-economic value [of forests]". The authors of the present paper believe that it is time to evaluate all the functions of the forest, not only the economic function, because the whole community benefits from sustainable forest management.

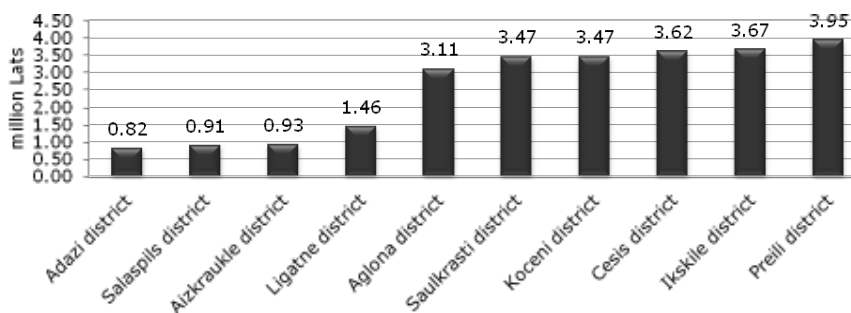
Soil expectation value was calculated using a simplified method of the famous German researcher M. Faustmann, since the original Faustmann's method has limitations due to contradictions between the theoretical assumptions and actual forest management. Therefore, the authors used a simplified method to calculate soil expectation value with the following formula (2.):

$$MSV = \frac{S(T) - w(1+r)^T}{(1+r)^T - 1}, \quad (2)$$

where:

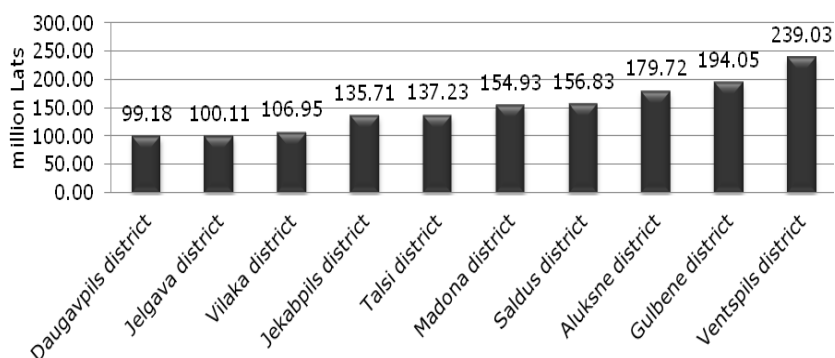
- MSV – soil expectation value;
- S – value of the felling area at the time of felling;
- T – felling age
- w – planting costs;
- r – discount rate (Gillies, 2003).

Faustmann's simplified methodology for determining soil expectation value takes into consideration only the value of the forest stand while disregarding land value. The authors think that it is possible to compare the two values, because soil expectation value serves as an indicator that draws attention to the question whether state forests are being managed in an economically sound way, and there might be room for improvement and change from a future perspective.



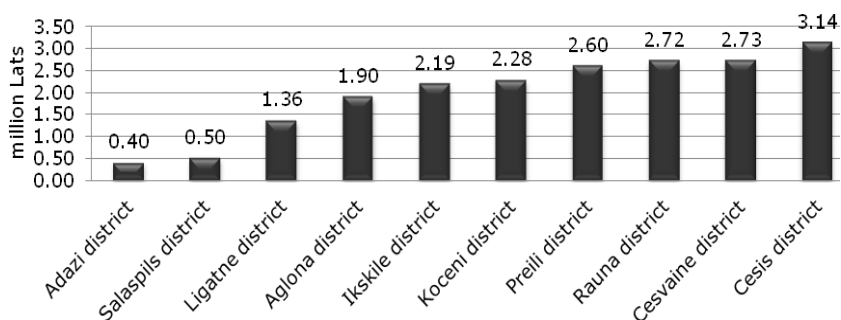
Source: authors' calculations and construction

Fig. 2. Ten lowest socio-economic values of Latvian state forests by district in 2004 – 2008, LVL million



Source: authors' calculations and construction

Fig. 3. Ten highest soil expectation values in Latvian state forests by district in 2004 – 2008, LVL million



Source: authors' calculations and construction

Fig. 4. Ten lowest soil expectation values in Latvian state forests by district in 2004 – 2008, LVL million

Research results and discussion

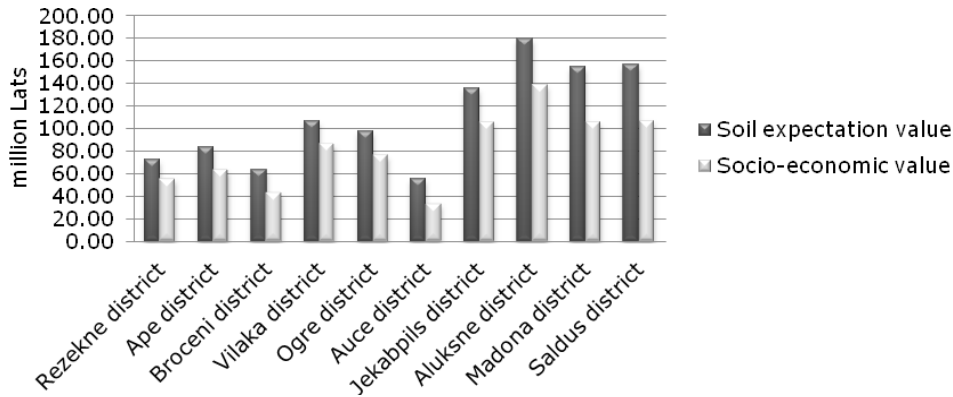
According to calculations done by the authors, the socio-economic value of Latvian state-owned forests is LVL 4.4 billion including the value of forest land and stand value; soil expectation value for Latvian state-owned forests is estimated at LVL 4.7 billion.

To obtain information on the socio-economic value and soil expectation value of state-owned forests in each district, the authors used the formulae discussed above, which resulted in data about 107 districts.

The most valuable state-owned forest with a socio-economic value of LVL 294.21 million is situated in Ventspils district (Figure 1). Vidzeme region (North-eastern part of Latvia), which is fragmented into numerous districts, shows examples how districts with large forest areas have forests with a higher socio-economic value than other districts do. In such districts as Gulbene,

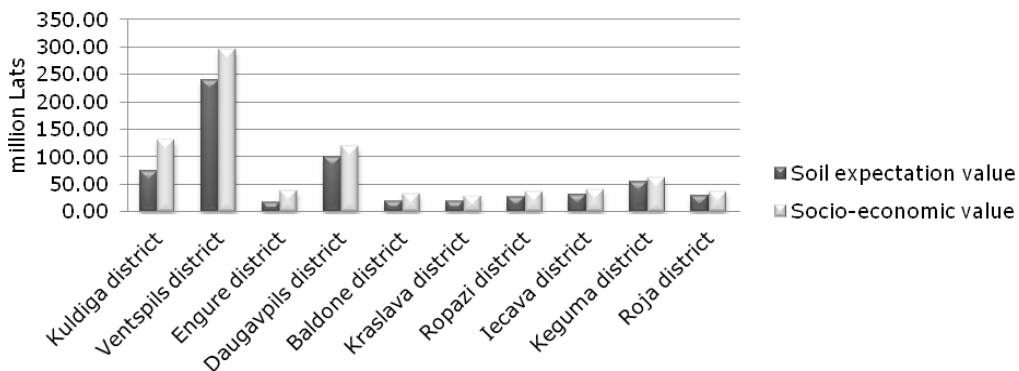
Madona, Alūksne, and Valka, forest values range from LVL 139.07 million to LVL 96.68 million. In Latgale region (South-eastern part of Latvia), only Daugavpils district is among the top ten highest values, with a forest value of LVL 119.41 million.

Forests with the lowest socio-economic value are located in the central part of Vidzeme region and in districts close to the capital Riga (Figure 2). In Adazi, Salaspils, and Aizkraukle districts, forest values range from LVL 0.82 million to LVL 0.93 million. In Ligatne district, forest value is LVL 1.46 million but in Aglona, Saulkrasti, Koceni, Cesis, Ikskile, and Preiļi districts, the values range from LVL 3.11 million to LVL 3.95 million. These districts are relatively small, which supports the idea that the larger the district area with larger forest areas, the higher the socio-economic value.



Source: authors' calculations and construction

Fig. 5. Districts in Latvia where soil expectation value is higher than socio-economic value in 2004 – 2008, LVL million



Source: authors' calculations and construction

Fig. 6. Districts where socio-economic value is higher than the expected forest value in 2004 – 2008, LVL million

Forests with the highest current socio-economic value will be the most profitable in the future (Figure 3). However, not all districts will experience higher soil expectation values in the future than the current values are now. Districts with the highest potential soil expectation value are Ventspils, Daugavpils, Jekabpils, Talsi, Madona, Saldus, Aluksnes, Jelgava, Gulbene, and Vilaka districts. The profitability of the forests of these districts will range from LVL 99.18 million in Daugavpils district to LVL 239.03 million in Ventspils district, forest in the latter being the most valuable.

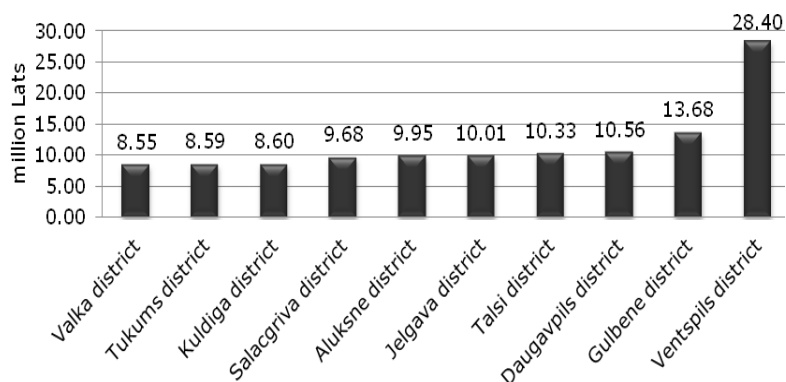
The lowest future profits from forests will be in those districts where the socio-economic value was not high, namely, Adazi, Salaspils, Ligatne, Aglona, Ikskile, Koceni, Preili, and Cesis districts (Figure 4), where values range between LVL 0.40 million to 3.14 million. The only two exceptions are Rauna and Cesvaine districts with values of LVL 2.72 million and LVL 2.73 million respectively, which were not rated among the districts with low socio-economic values. The least valuable forest is in Adazi district, which lies near the capital Riga.

Soil expectation value is higher than the current socio-economic value in 64 districts (Figure 5). The highest differences between the two values are in Saldus, Madona, and Aluksne districts. By analysing the data on these three districts, the authors concluded that it would be possible to increase the future value of forests.

Soil expectation value could be increased in the future by felling overgrown forest stands and regenerating the harvested areas with tree species appropriate for the forest type, because potential value in the future is affected not only by the age of the forest stand but also by the dominant tree species. Moreover, the average age of the forest in those districts is relatively low, 50 years, and tree species that constitute the highest percentage of trees are Norway spruce, birch, and aspen, which form forest stands with lower felling age, while Scotch pine is less common and has the highest felling age (according to the Forest Law, felling age for spruce, birch, and aspen is lower than for pine).

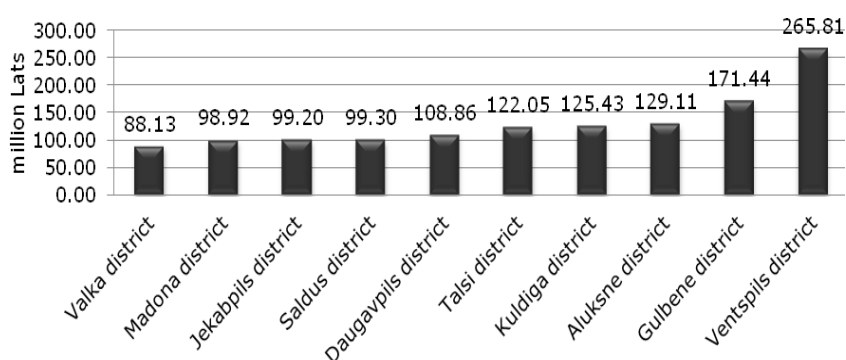
Socio-economic value is higher than soil expectation value in 43 districts (Figure 6). The biggest difference between the two values is in Kuldiga, Ventspils, and Engure districts; it is the lowest in Ligatne, Vilani, and Aloja districts.

Aloja, Vilani, and Ligante districts show that a long rotation period is not a prerequisite for obtaining more valuable timber. There are few overgrown forest stands, which are losing value. It can be one of the reasons why the difference between both forest values is small. The dominant tree species is another factor, however. In Vilani and Aloja districts, the dominant tree species are trees with a long rotation period. Forestland value is another factor. In Ligatne district, forestland



Source: authors' calculations and construction

Fig. 7. Ten districts with the highest forest land values in 2004 – 2008, LVL million



Source: authors' calculations and construction

Fig. 8. Ten districts with the highest forest stand values in 2004 – 2008, LVL million

value is one of the highest, and there is potential for achieving the highest theoretical stock volume of $400\text{m}^3\text{h}^{-1}$.

The popular belief that forests shall not be felled is proven wrong, as forest stands lose their value when the stand becomes overgrown and young and middle-aged forest stands produce more oxygen than overgrown ones. Therefore, harvesting of those forest stands and regeneration of felled areas would increase the social, economic, and ecological value of the forest, and the community would benefit from this. People need to understand that forest felling is natural process if the main aim is a valuable forest now and in the future. Thus, in Kuldīga, Ventspils, and Engure districts, the socio-economic value could be increased by harvesting the overgrown forest stands.

By comparing cases when one of the two values is higher than the other, the authors of the present paper conclude that if the dominant species in a forest is a tree with a long rotation period, e.g. Scotch pine with a 101-year rotation period, then the socio-economic value is higher than soil expectation value. However, if the dominant species is a tree with a shorter rotation period, e.g. Norway spruce with a 81-year rotation period, common silver birch with a 71-year rotation period, or aspen with a 41-year rotation period, and pines are less common, then soil expectation value is higher than socio-economic value.

The authors carried out statistical analysis using SPSS to find out the statistical significance of factors, which influence soil expectation value and socio-economic value. Correlation analysis confirms the assumption that forest stand age and dominant species affect socio-economic value and soil expectation value, and that economically valuable trees should be planted as dominant species, while species of no significant value should be replaced to get the highest economic benefit from the forest. Valuable species are common silver birch, Scotch pine, common oak, European ash, small leaved lime-tree, Norway spruce, common alder, larch, and aspen. By species of no significant value, the authors mean species that cannot be sold for profit, for example, goat willow.

Overgrown aspen stands cover a total area of 71 760 ha. The oldest aspen stand is 110 years old, but the rotation period for aspen should normally be 41 years. These aspens should be felled, which should be unhindered because there are no restrictions on economic activity in that area. The authors suggest growing hybrid aspen in Latvia instead of common aspen to harvest energy wood.

National forest inventory data show that the oldest state-owned forest is situated in Cēsis district, where the average tree age is 103 years. The socio-economic value is LVL 3.62 million, soil expectation value is LVL 3.14 million, and the dominant species are spruce (75%) and pine (25%).

The youngest forest is located in Aizkraukle district; its average age is 22 years. The socio-economic value of the forest stand is LVL 0.93 million including the produced oxygen. According to calculations based on Faustmann's formula, soil expectation value could reach LVL 6.76 million in the fertile forest type common in the district. Presently, species of no significant value are dominant here, namely, elm and goat willow. The authors recommend that these species should be replaced by valuable species such as spruce and birch, which would enable the forests to reach the calculated soil expectation value.

The study found the following correlation: if the average age of forest stand is between 40 and 60 years (the youngest age being 20 years and the oldest being 68 years), soil expectation value is higher than socio-economic value. If the average age of forest stand is between 50 and 90 years (with the youngest stands 45 years old and the oldest stands 103 years old), socio-economic value is usually higher than soil expectation value. Therefore, the authors came to the conclusion that the average rotation period for a forest stand should be between 50 and 60 years, when forest value was the highest. The authors believe that age is one of the most substantial factors to determine socio-economic value and soil expectation value. However, further long-term research is needed, because other factors are also at play.

The authors also recommend that a computer program should be developed for calculating forest value and for determining when it will be most profitable to fell forest stands. Based on pre-determined criteria, the program would calculate the best time for harvesting a forest stand. This would allow for the forest stand to be felled when it is most valuable, rather than having to wait for the end of the rotation period when it loses value. Provisions on rotation periods stipulated in the Forest Law need to be amended.

Forest stand value and forestland value are two important components in the socio-economic value equation, thus, they will be analysed separately.

Correlation analysis shows that there is a positive but low correlation between socio-economic value and land value. The most valuable forest land, worth of LVL 10.56 million, is in Daugavpils district, Gulbene district - LVL 13.68 million, and Ventspils district - LVL 28.40 million (Figure 7). The analysis shows that three districts, Jelgava, Salacgriva, and Tukums, have one of the highest forestland values but not the highest socio-economic values. This means that a high forestland value does not always co-occur with a high socio-economic value.

Correlation analysis also shows that the strongest correlation is between forestland value and the ecological value of forestland: it is the ecological value that affects forestland value most strongly.

According to the data analysis, the most valuable forest stands are in Ventspils district - LVL 265.81 million, Gulbene district - LVL 171.44 million, and Aluksne district - LVL 129.11 (Figure 8). Gulbene district has also the most valuable overgrown forest stand, worth of LVL 65.53 million. The overgrown stands should be felled and replaced with valuable tree species appropriate

for the forest type. Most significantly, forest stand value is influenced by standing volume.

Conclusions

1. Both, the Forest Law and forest economic policy objectives stipulate that sustainable forest management and development shall comply with certain ecological, economic, and social terms but a more precise explanation, how it should be done, has not been provided.
2. State-owned forest growing in Ventspils district can be considered the most valuable forest among the forests in all the other districts of Latvia, because it has the highest socio-economic value, soil expectation value, forestland value, and forest stand value.
3. Out of all the constituent indicators, current stock volume correlates most with forest stand value. There is a strong positive correlation between forest stand value and current stock volume ($r=0.911$).
4. Out of all the constituent indicators, the ecological value of the forest affects forestland most. There is a strong positive correlation between the value of forestland and the ecological value of a stretch of forestland ($r=0.885$).
5. Soil expectation value is most affected by the dominant tree species, because it determines the felling age and the value of the felling area at the time of harvest ($r=0.767$).
6. The average forest stand rotation period should be between 50 and 60 years, when forest value is the highest. However, further long-term research is necessary to prove this assumption, because both the socio-economic value of forest and soil expectation value are affected by many other factors apart from the forest stand age.

Recommendations

1. The JSC "Latvian State Forests" should harvest overgrown forest stands and stands with tree species of no value such as goat willow, elm, and grey alder, and restore the felled areas with economically valuable tree species appropriate for the forest type.
2. The JSC "Latvian State Forests" should harvest 71 760 hectares of overgrown aspen stands. Latvia has a high potential for growing fast growing hybrid aspen stands to be used as fuel or high-energy wood. "Latvian State Forests" should be able to do it but a strategy that deals with funding; the method of growing aspen, potential markets, consumers, and estimates when it would start making a profit needs to be developed first.
3. The JSC "Latvian State Forests" should develop a program for modelling and estimating when the socio-economic value of a forest stand will be at its highest and when it will be most profitable, based on certain indicators to be fed into the program, while taking into consideration ecological and social functions of the forest.
4. In collaboration with researchers from the Latvian State Forest Research Institute "Silava", the JSC

"Latvian State Forests" should review the forest stand rotation periods provided for in the Forest Law and develop recommendations to change the provisions, so that harvesting of a forest stand would be allowed when its value is at its highest, rather than having to wait for the end of the rotation period, and submit the recommendations to the government for consideration.

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Place's Image in Latvia and Peculiarities of Its Perception in the Context of Place Marketing

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Abstract. The research of place marketing and a place's image is presently at its very beginnings in Latvia. Even so, the cities already face serious inter-place competition challenges. Networks of schools and health care institutions are being optimised, and the population moves to other, more attractive cities. In such a situation, a place shall be able to compete with other cities. It is, thus, of crucial importance to know the image of place that the population thinks is attractive and the factors that determine the satisfaction levels of residents with their place of residence. The aim of the study is to elucidate the peculiarities of perception in relation to the place's image and popularity of place marketing measures in various populated areas in Latvia. The study involved interviewing of 280 respondents in various populated areas. The article analyses academic place marketing and place branding literature and presents the results of the interviews. Descriptive statistics methods and the chi-square test were used to analyse the results. The study findings outline that the nature of the image of Latvian cities is mostly positive, although, quite often neutral, which shows that cities do not sufficiently engage in the development of their image. The key elements of attraction seen by the inhabitants in their cities include architecture, and the urban environment and landscape in which the place is situated. The image of a Latvian place is most often characterised by landmarks and annual events that attract tourist flows, while it is to a very small extent related to outstanding companies and popular brands of goods that are manufactured in the particular place. In the majority of cases, cities use their slogans and, to a lesser extent, also their logos as measures by which to increase awareness. Yet, residents are quite often unsure whether any measures are taken at all. It should also be mentioned that monthly income plays an important role in the creation of the satisfaction of residents with their place of residence and that the satisfaction with one's place of residence also increases with growing income.

Key words: place image, place branding, place marketing.

JEL code: R11

Introduction

The authors of the present article intend to review the application of place marketing in various populated areas of Latvia. Presently, more and more places, cities, villages, and even whole countries are forced to compete for residents, investment, and tourists who ensure the economic development of these locations. The most frequently viewed situation is the one of the population flowing away from the place and companies seeking wider industrial concentration areas that would ensure the internal market effect, and in such context, territories should be able to announce themselves effectively in this competitive space. The place marketing approach provides this opportunity.

The first attempts to expand the limits of classical marketing in academic discussions had already been seen in the late 1960s and early 1970s (Kotler P., Levy S. J., 1969). However, the first to introduce the concept of place marketing were the scientists O'Leary and Iredal who wrote that "there is an obvious need to create dispositions and change behaviour toward geographic locations" (O'Leary R., Iredal I., 1979). Marketing undertaken in the interests of a geographical location is often referred to in literature as territorial marketing or place marketing. In fact, the concept of place marketing is sufficiently abstract, and thus, can be used for an entire region or country or for a particular place. The word 'territorial' stands for the geographical object in whose interests marketing measures have been taken.

A. Pankruhin (1999), a Russian marketing researcher, defines place marketing as a set of actions aimed at changing or maintaining the attitudes and behaviour of market subjects with respect to particular territories and the nature, culture, and materially-technical resources concentrated therein as well as to the utilisation and reproduction of such resources (Pankruhin, 1999). Place marketing means choosing the most suitable ways for the place to achieve and satisfy the requirements of the target segments that are necessary for its development. A place has achieved this aim when the businesses and residents are satisfied with the economic development of that place and its social environment, and when the expectations of visitors and investors are met (Kotler, et al., 2002). Place marketing, local economic development, and place competitiveness are all concepts that are widely analysed in economic literature. However, the understanding of place marketing is sometimes restricted to a number of promotional activities, thereby unjustly reducing its importance for local economic development strategies. Bradley et al. (2002) stress that place marketing is a consistent strategic process that is closely related to the development of the local economy and the improvement of the place's competitiveness (Bradley, et al., 2002). Place marketing distinguishes four interrelated and complementary base strategies. These are the strategies of infrastructure marketing, human resources marketing, attraction marketing, and image marketing. The image marketing strategy provides for the focussing of attention

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on the development of propaganda and an informative environment for the developed place. The information campaign is orientated towards the advancement of already existent values in the market created earlier. The place's attraction factors are analysed and the information is disseminated through various information channels depending on the target audience group.

Thanks to this, the key instruments of image marketing are the communicative events that demonstrate the openness of the place in terms of making contacts and allowing external market subjects to study it better and ascertain themselves what advantages lie therein.

In the context of place marketing, a place is perceived as goods, and the aim of place marketing measures is to make these goods attractive for their prospective consumers – residents, investors, visitors etc.

The branding expert Simon Anholt opposes the above approach. Instead, he offers a place branding approach. A brand is a visualised identity that is developed with the objective of branding, a name, logo, slogan, corporate style etc. In other words, goods, services, or corporations are visualised as a result of branding and thereby gain awareness. However, Anholt himself considers this definition incomplete and presents a wider view on the brand. In his opinion, a brand contains all of the aforementioned elements and additionally comprises the corporate strategy, consumer motivation and behaviour, internal and external communications, and ethics and intentions (Anholt, 2005).

Hence, if the object of branding is a country, a region, or any populated place, it cannot be simplified down to a logo, a loud slogan, or other visualisation elements. Anholt stresses that a place or a region cannot be 'sold' as an article in a supermarket. Understanding a place as a project is erroneous in the opinion of Anholt. Only the brand with a logo, a slogan etc. as its elements may be sold. He offers examples from the branding policies of the big corporations, such as Procter & Gamble or Unilever. These companies do not offer a brand to stand for them themselves but rather manage an extensive brand portfolio. He suggests acting likewise in respect to place branding, that is, using the approach in which the most well-known company, service or product of the town or its famous personalities etc. are used as the place's brand. Furthermore, the brand addressee should be able to answer the question, "what is there in this brand for me?" (Anholt, 2005). Therefore, if one speaks about a place as a brand, it should be first established to whom this brand is addressed and how extensive target market it covers.

Another globally recognised branding specialist, Wally Olinss (2003), emphasises that a brand is based on four vectors that act as the driving force of the brand. Depending on the nature of the brand, the relative importance of one vector in relation to the other vectors may be different. Meanwhile, the brand is always the same, regardless of it being the brand for a place or a consumer product. The vectors proposed by W. Olinss are the product, the environment, communication, and behaviour (Olinss, 2003). He offers four brand vectors or driving forces (Environment, Product, Communication, and Behaviour). The environment is the strongest driving force of a territorial brand. For example, a place in this context is seen as an adventure, a place of residence or

work etc. The product as the driving force of a place's development is something through which a consumer learns about the existence of the place and according to which he or she builds associations with that place. This finding corresponds to the brand portfolio approach mentioned by S. Anholt. The promotion of an image in the market is not possible without communication. It determines how the audience is informed about what it might expect from, in this case, a place. This image marketing part includes the development and utilisation of a slogan, vision, commercials, press releases, and other communications elements. Nevertheless, all of the above actions are ineffective if the consumer in the respective place finally does not meet the levels of behaviour expected of him/her. This behaviour is characterised by the way, in which the consumer is treated by everyone who represents, in this case, the place (Olinss, 2003). The authors of the present article interviewed 280 respondents based on the findings involving brand-driving forces by W. Olinss, with the aim of elucidating how residents perceive the image of their place of residence and to what extent the application of the place marketing methods is developed in Latvia.

Hypothesis: the place marketing approach is scarcely used in populated areas in Latvia, while the use of this approach might make the place more attractive and in general provide for its economic development.

Object: build up an image of populated areas (cities, villages, counties) in Latvia.

Aim: to determine the peculiarities for perception of the image of the place and the popularity of place marketing measures in various populated areas in Latvia.

Tasks: to analyse theoretical issues involved in place marketing and place branding; to study a perception of the image of place in Latvia based on the finding of theoreticians.

Methodologically, the study is based on interviewing residents and descriptive statistics methods; the chi-square criterion and the statistical independence test are used to analyse the collected data.

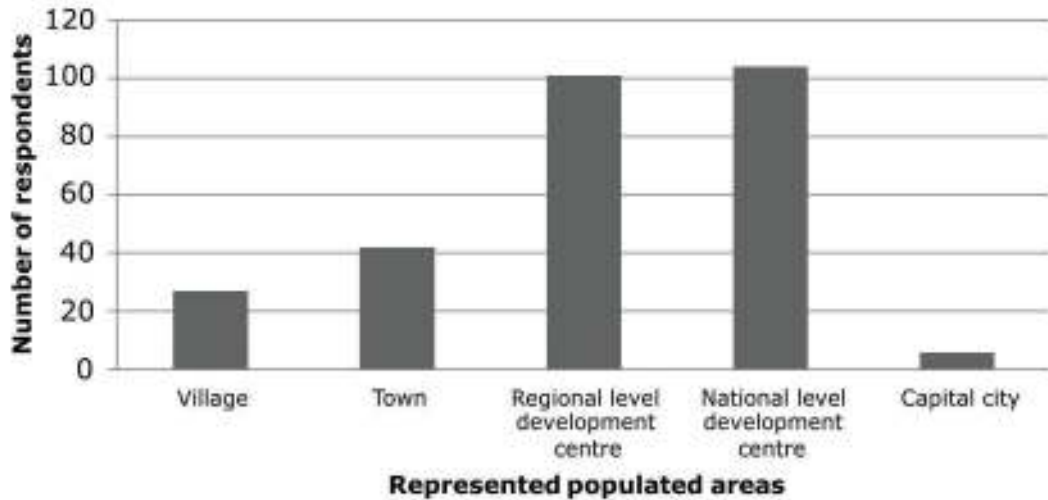
Research results and discussion

An opinion poll was launched in 2011, comprising 280 respondents from various populated areas in Latvia, within an age range from 18 to 83 years, of whom 234 respondents were females and 46 respondents were males. As to their territorial distribution, respondents were grouped according to the territorial administrative division of their place of residence (Figure 1).

The information from the poll shows that images of populated areas in Latvia are generally valued as positive, neutral, and weak expressed. The value of a vivid image is mentioned to a lesser extent and the negative image is the least mentioned. The results are visualised in Figure 2.

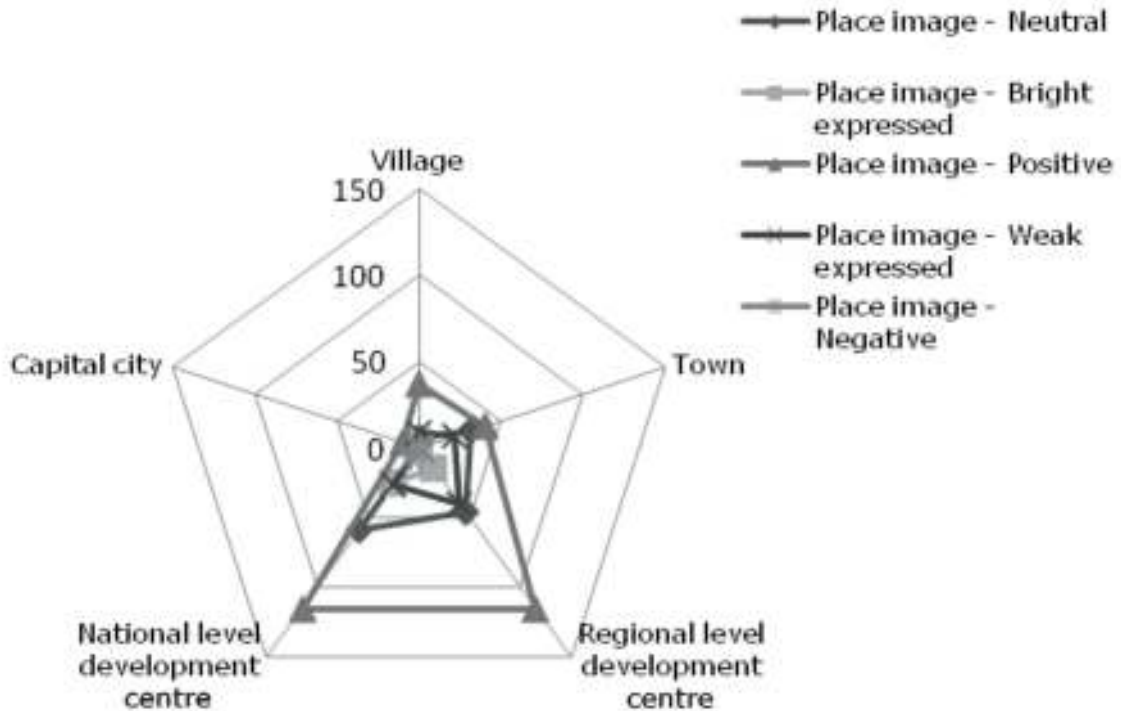
The evaluation of a vivid positive image was gained by the cities of Jekabpils, Jelgava, Liepaja, Rezekne, and Riga, Rogovka village, and the cities of Saldus, Strenci, Talsi, Valmiera, and Ventspils. The evaluation of a "vivid negative image" was comparatively rare and was earned by the cities of Aizpute, Dobele, Jekabpils, and Jelgava.

Respondents were asked the question "What, in your opinion, characterises the uniqueness of a



Source: authors' construction based on the data array of the opinion poll "Place Image in Latvia"

Fig. 1. Classification of respondents across the represented populated areas

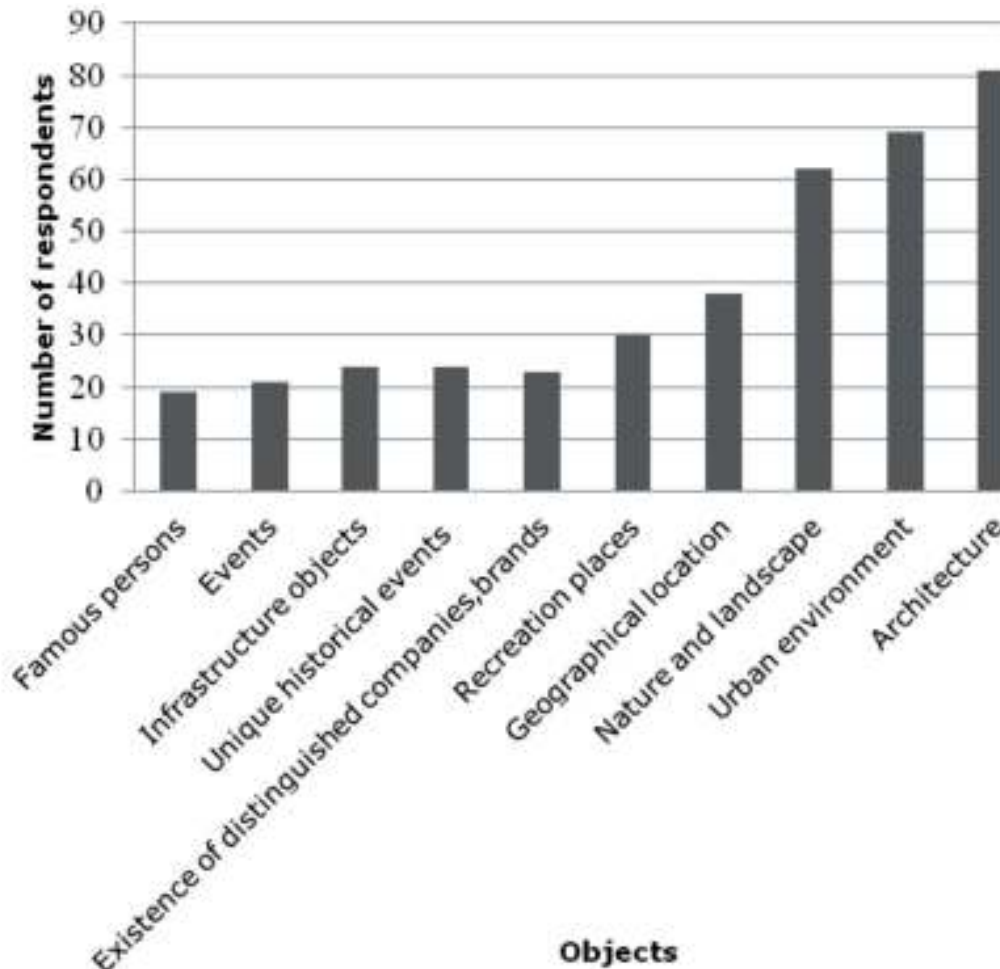


Source: authors' construction based on the data array of the opinion poll "Place Image in Latvia"

Fig. 2. Character of the image of populated areas

place of residence?". The aim of the question was to become immersed to a certain degree in the values of respondents and see what exactly in their opinion creates the uniqueness of a place and is perceived as a value. A minority or 18% of respondents mentioned that there was nothing unique in their place. A total of 81% of those interviewed confirmed that their place was unique and supplemented their answers with examples. Grouping examples given by these respondents resulted in the distinguishing of ten factors

that create the uniqueness of a place according to respondents. Among those provided, the most frequently were answers characterising the place's architecture, urban environment, nature, and landscape. Such components of the place image as the presence of famous persons, events and the quality of infrastructure were among the least mentioned, which makes one think that there is a lack of the aforementioned elements in the places of residence of these respondents. A relationship with unique historical events was also comparatively



Source: authors' construction based on the data array of the opinion poll "Place Image in Latvia"

Fig. 3. Factors determining the uniqueness of the place (grouped according to free answers by respondents)

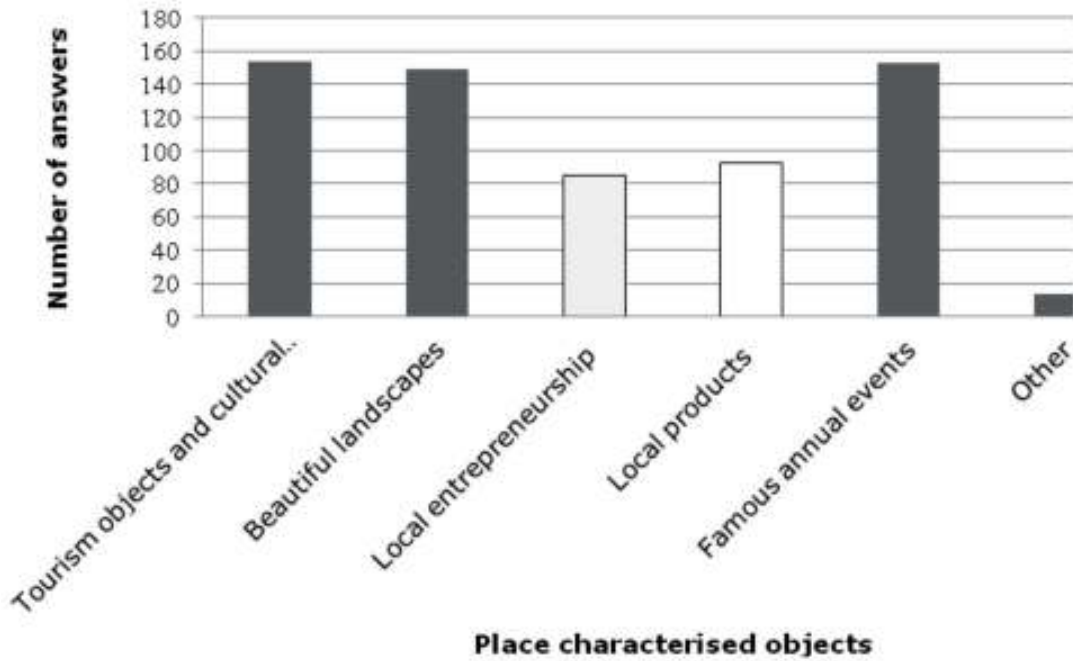
rarely mentioned, as was the existence of distinguished companies. The results are presented in Figure 3.

Contrary to the above question, further questions asked to respondents inquired about what exactly characterised their place, providing six particular answer versions. Therefore, it was found that cities are most often characterised by objects and events that are directed at the activation of the potential of tourism sector including, among others, tourism objects and cultural heritage, beautiful landscapes, and famous annual events. Sectors that characterise local entrepreneurship and the representation of local products were less frequently mentioned, which indirectly characterises the insufficient development of industry and entrepreneurship in regions. The summary of results is presented in Figure 4.

It follows that it becomes problematic to develop a place image portfolio based on the product vector.

The article continues with reviewing issues that are related to the implementation of marketing measures for particular territories or that of the communication vector in various populated areas of Latvia. As it has already been mentioned, the place logo and place

slogan are elements of the place marketing strategy. Therefore, it is important to elucidate whether residents have noticed the use of these elements. Residents were asked questions regarding the way in which the place positions itself and what particular actions residents might have noticed. Therefore, the most frequent answer by respondents to the question "Does the place position itself in any way?" was "Perhaps, but I have not noticed it". The same answers are most frequently provided for the question "Does the place have its own logo?". It can be seen from the answers that respondents had not always noticed that a purposeful place marketing policy is being implemented, or that it is not being implemented in a sufficiently active manner. It is also possible that respondents rarely meet cases in which the place's logo is being used or are not interested in it, which points to certain communications problems between the place's administration and its residents. The situation is different with the place's slogan, because "yes" is the most frequent answer to the question "Does the place have its own slogan?". This is likely to be related to the fact that it is not common for a slogan to be developed artificially. Very often, it has its origin in the place's ancestral background.



Source: authors' construction based on the data array of the opinion poll "Place Image in Latvia"

Fig. 4. Elements characterising the place image



Source: authors' construction based on the data array of the opinion poll "Place Image in Latvia"

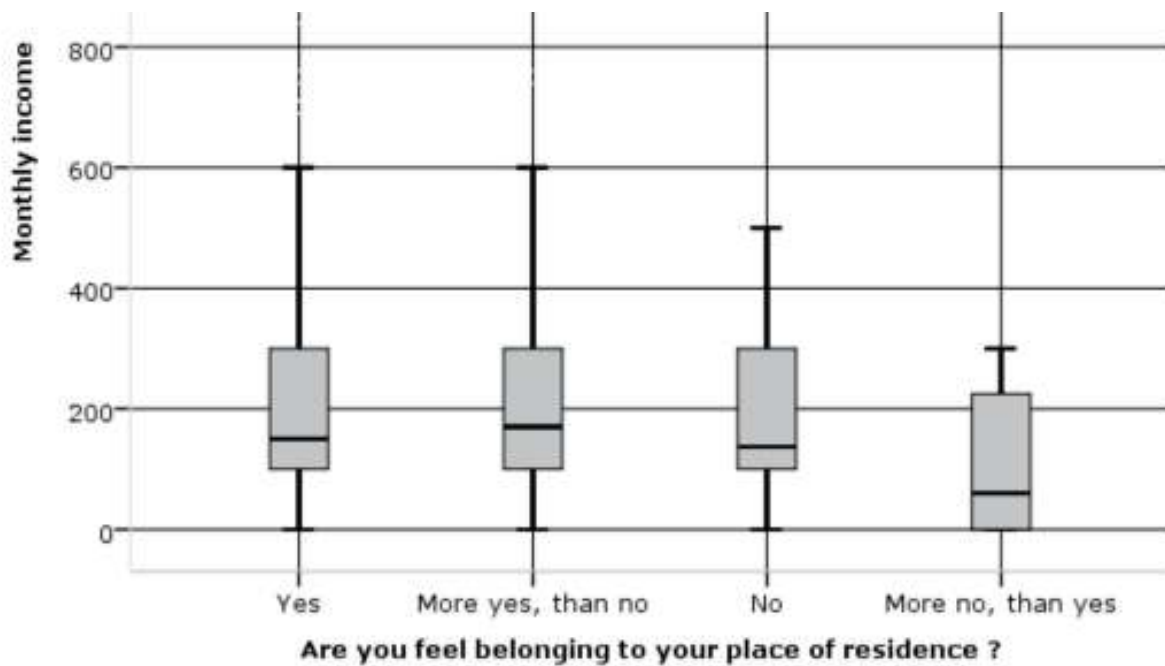
Fig. 5. The application of various place marketing approaches in populated areas in Latvia

Hence, residents are involved in the development of the place image. Answers to these questions are presented in Figure 5.

An assumption may be made on the grounds of the aforesaid that the degree of activity shown when a place positions itself and engages its residents in this process may influence the sense of belonging felt by

residents for their place of residence. By performing the chi-square test, the authors established with a probability of 95% that the presence of place positioning measures influences the sense of belonging of its residents.

The way in which people become involved in the creation of the image of their place and the results



Source: authors' construction based on the data array of the opinion poll "Place Image in Latvia"

Fig. 6. Breakdown of respondents across their sense of belonging to their place of residence depending on their monthly income

brought about by this process is largely determined by personal attitudes of such people to their place of residence, which characterises the "behavioural" vector. Respondents were asked the question "What are your feelings when talking about your place?". The most frequent answer to this question was "I do not think it is of any importance", while 46% of respondents replied that they were proud of their place and 6% of respondents were sometimes reluctant to reveal which place they were from. It should, however, be mentioned that the absolute majority (83%) agreed that they were part of the image of their place. It may be presumed that the sense of belonging of the respondents to their place of residence is influenced by their income. Hence, a primary examination of the poll data was performed with the aim of determining the breakdown of the respondents' answers regarding their sense of belonging to their place of residence depending on their monthly income. The results are presented graphically in the box plot in Figure 6.

It was found that the reply of "Yes, I have a sense of belonging" was preferred by people representing a wide range of income. Amongst them, a quarter had an income below LVL 150, while 75% of those "with a sense of belonging" had an income below LVL 300. The inclination of the median on the left indicates that half of respondents had an income below LVL 200. Respondents who do not have a sense of belonging are located within the income group that is similar to that of those who "belong" but their income does not exceed LVL 300. To obtain more specific results, the chi-square test was used and it was established that the income of residents did have an effect on their sense of belonging to their place of residence.

Conclusions

The authors of the present article analysed the application of the place marketing approach in various populated areas in Latvia. The analysis of the poll conducted as a part of the study supplied the following results.

1. A study of the respondents' answers to the questions of what characterises the place and what represents the uniqueness of the place reveals that cities are characterised by an extremely marked stress on the element of urban environment. It is valued the highest by respondents. However, answers related to objects that characterise the place rather rarely mention the object 'recreation grounds', which leads to the thought that the existing urban environment potential has not been utilised to a sufficient extent.
2. Although, the application of the product branding portfolio approach for place marketing may be very effective and might even facilitate international awareness. It might be problematic in Latvia because there are few cities or counties that produce recognisable goods. Even so, assistance for local industry may become an important contribution to place or county marketing.
3. Although, each Latvia's place has its own coat of arms, something, which bears evidence of the historical heritage of those cities, enough specific knowledge is often necessary to interpret it. Therefore, cities frequently create their logos and slogans, having absorbed these marketing elements from the commercial sector. In Latvia, this practice is applied in several local government authorities,

but the poll results show that this is not a general practice. Residents in most cases are not aware of the marketing policy of their place or county. The only exception is the public's awareness of the place's slogan that is more frequently used.

4. In general, regardless of people's income having an effect on their attitudes and their sense of belonging to their place of residence, their loyalty is manifested quite vividly through their positive answers to questions that were related to their sense of belonging to their place and their confidence that every one of them is a part of the place's image. Despite social and economic problems and low incomes, people are proud of their place.

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Reputation of Public Administration: Agriculture-Related Agencies in Poland Seen Through Farmers' Eyes

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Abstract. The paper presents the concept of organisation reputation and applies it to public sector organisations focusing on administrative-type agricultural agencies. The research is qualitative and exploratory. To test the reputation in practice, a study measuring the reputation of two Polish agricultural agencies (Agricultural Market Agency and Agency for Restructuring and Modernisation of Agriculture) among farmers was carried out in 2006/2007 and 2010/2011. Only farmers with frequent interaction (contact) with the agencies in question were selected. Farmers being frequent customers are familiar with the agencies, have gained experience of and have observed them over time. The results of the study revealed that the agencies had neutral or a somewhat positive reputation and they had somewhat improved it since 2007. These findings suggest that agencies might improve reputation by being more responsive to the needs of their clients. The issues addressed in this paper are relevant for future research on reputation in the government administration context.

Key words: government, public administration, payment agencies, reputation, agriculture.

JEL code: H11, H83, Q1

Introduction

The public sector is a major player in most European economies. The growing focus on reputation of public administration can be justified by the observation that the vast majority of resources that are dedicated to the administration of public affairs are controlled by public administrations, and for this simple reason, they are central actors of public governance. It is the way, the public administration implements policies (Picci L., 2011).

Bureaucracy reputation among the public as well as academics is pretty bad. The government bureaucracy is criticised by citizens, economists, sociologists, political scientists, policymakers, and even public administration practitioners. Bureaucrats are seen as inefficient, ineffective, wasteful, seeking to maximise the budget, rent seeking, and harsh to their customers. This negative bureaucratic reputation is largely evident and only occasionally supported by empirical facts. However, some studies (e.g. Goodsell Ch.T., 1994) show that bureaucrats are perceived by clients of public administration as efficient, responsive, honest, respectful, and yielding their satisfaction. According to Goodsell, this is true on all levels of government and even in low reputation fields such as law enforcement and public welfare. The contradiction between general opinion survey results and specific performance assessments was explained by George Frederickson and David Frederickson as the "paradox of distance" and the "lack of role differentiation". With the distance paradox: "people trust and even revere those government officials who are near at hand", whilst they "believe that government officials who are far away are

*A good reputation, even in darkness, keeps on shining.
A good reputation is more valuable than money.
Publius Syrus (Lyman D., 1856)*

lazy, incompetent and probably dishonest". The "lack of role differentiation" denotes that the public has a tendency "not to distinguish between persons elected to legislative bodies, persons elected as executives, persons politically appointed, and permanent civil servants" (Frederickson G., Frederickson D.G., 1965). Corrupt or incompetent behaviour by appointed and elected officials taints the people's perception of the competence of all officials. Moreover, literature suggests that when function of the government bureaucracy is to serve indirectly people's needs (to create their individual welfare), public administration is positively judged by the public (service recipients). Contrary, those administrative agencies that are viewed from a broad, general and distant perspective might attract almost completely negative public reactions. Theory also predicts that the assessments made by frequent stakeholders of any organisation are more influential for the formation of reputation, since personal experiences affect the impressions formed more than mediated information does (MacMillan K. et al., 2005).

This paper's aim is to examine how Polish farmers-clients of the government agricultural agencies perceive their reputation. Farmers' assessments have been applied as possible measure of reputational capital of the agencies – the capital, which when being high, can contribute to the legitimacy of the public sector organisations (Luoma-aho V., 2007).

Following this introduction, the paper is structured as follows. The first section approaches the main concepts of reputation as well as perspectives about its role discussed in the relevant literature. The second section consists of

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Table 1

Selected definitions of reputation

Author(s)	Definition
Oxford English Dictionary (2011)	"the beliefs or opinions that are generally held about someone or something"
	<i>Reputation as assessment and awareness</i>
Wartick S.L. (1992, p. 34)	"the aggregation of a single stakeholder's perceptions of how well organisational responses are meeting the demands and expectations of many organisational stakeholders"
Fombrun C.J. (1996, p. 72)	"a snapshot that reconciles images of a company held by all its constituencies"
Bromley D.B. (2000, p. 241)	"the way key external stakeholder groups or other interested parties conceptualise that organisation"
Bromley D.B. (2001, p. 317)	"a distribution of opinions (the overt expression of a collective image) about a person or other entity, in a stakeholder or interest group"
Schultz M. et al. (2001, p. 24)	"reputation combines everything that is knowable about a firm. As an empirical representation, it is a judgement of the firm made by a set of audiences on the basis of perceptions and assessments"
Highhouse et al. (2009, p. 783)	"is a global, temporally stable, evaluative judgment about a firm that is shared by multiple constituencies"
Walsh G., Beatty S.E. (2007, p. 129)	"the customer's overall evaluation of a firm based on his/her reactions to the firm's goods, services, communication activities, interactions with the firm and/or its representatives (e.g. employees, management) and/or known corporate activities"
Gotsi M., Wilson A.M. (2001, p. 29)	"a stakeholder's overall evaluation of a company over time. (...) is based on the stakeholder's direct experience with the company, any other form of communication and symbolism that provides information about the firm's actions and/or a comparison with the actions of other leading rivals"
Rose C., Thomsen S. (2004, p. 202)	"is identical to all stakeholders' perception of a given firm, i.e. based on what they think they know about the firm, so a corporation's reputation may simply reflect people's perceptions"
Post J.E., Griffin J.J. (1997)	A collective representation of a firm's past actions and results
	<i>Reputation as assets</i>
Shapiro C. (1983, p. 659)	"a firm, which has a good reputation owns a valuable asset"
Fombrun C.J. (2001)	Economic assets
Goldberg A.I. et al. (2003)	An intangible resource (assets) of organisation
Suh T., Amine L.S. (2007); Lewis S. (2001)	Strategic asset than can create long-term value for an organisation

Source: author's compilation based on the literature review

an overview of data sources, methods and description of the sample. The third section offers own research results, their limitations and practical implications. The final section consists of conclusions and recommendations.

Reputation - conceptual background

The concept of reputation has had a vital role in explaining cooperation and conflict in economics and political science (Sharman J.C., 2007). But what is reputation and what is it worth, particularly in the public administration? A brief literature review has provided several definitions of corporate reputation (cited in Table 1) but much less has been written about reputation in public administration.

Selected opinions about the roles played by reputation are presented in Table 2.

Analysis of the elements of the definition indicates a reference of reputation to: a perception; a time perspective; an evaluation of a firm's characteristics; a

stakeholder-dependency of the construct; reciprocity; corporate performance when compared with other firms; and assets.

Reputation of public administration organisations can contribute to organisational stability, autonomy, performance, prestige, attracting or retaining qualified people in the "war for talent", decreasing transaction costs, and restoring trust.

Methodology/approach of own empirical research

The empirical research is descriptive and qualitative in nature (exploratory, question based, interpretive).

1. Research design and sample characteristics

The focus for the research was nationwide sample of 200 Polish farmers-customers of the two agricultural

Table 2

Importance of reputation

Author(s)	Importance
Akerlof G.A. (1970)	Affects a customer's choice among competing products
Shapiro C. (1983); Barney J.B. (1996)	Increases premium price ... leading to above average profits
Ettenson R., Knowles J. (2008, p. 20)	Is "a precondition for people's willingness to do business with a company"
Selnes F. (1993); Andreassen T.W., Lindestad B. (1998)	Increases customer retention (affects loyalty)
Stigler G.J. (1962); Williamson O.E (1985); Turban D.B., Cable D.M. (2003)	Makes the firm an employer of choice A positive reputation has a strong impact on one's willingness to apply for a job at a company
Williamson O.E. (1996, p. 116, 159)	Reputation effects play a minor role in preventing opportunism in ongoing transactions. Improved reputation effects accentuate incentives to behave opportunistically
Milgrom P., Roberts J. (1992)	Reduces contracting and monitoring costs (transaction costs) because suppliers and partners are less concerned about contractual hazards
Roberts, P.W., Dowling, G.R. (1997, 2002)	Affects a firm's future financial performance
Herbig P., Milewicz J. (1995, p. 10)	"as reputation goes, profits follow"
Fombrun, C.J., Shanley M. (1990).	A good reputation is a signal of quality and sound company behaviour towards market transactions
Fombrun C.J. et al. (2000, p. 89).	"a good reputation leads to better chances in overcoming crises as reputation serves as a sort of "buffer" or "safety net"
Cavaye J.M. (1997)	Reputation of (government) agency has a bearing on the community's willingness to work with government
Carpenter D.P. (2001, p.17); Whitford A.B. (2002); Wilson J.Q. (1989)	Agency reputations can serve to enhance bureaucratic autonomy
Wilson J.Q. (1989)	Agency reputations can serve to enhance professional prestige
Carpenter (2002, p. 491)	Bureaucratic reputations are valuable political assets – they can be used to generate public support, to achieve delegated autonomy and discretion from politicians, to protect the agency from political attack, and to recruit and retain valued employees

Source: author's compilation based on the literature review

agencies in Poland: Agricultural Market Agency (AMA) and Agency for Restructuring and Modernisation of Agriculture (ARMA). The AMA was established in 1990. Its tasks include mainly interventions in the agricultural commodity markets. The ARMA was created in 1994 with the mission to support the structural changes in agriculture. The two agencies are of the special importance as they carry out their activities on behalf of both the Polish government and the EU (EU payment agencies) and distribute (mainly ARMA) a large part of the budget allocated to the agricultural sector and rural areas.

The research uses two surveys of farmers; one was conducted in December 2006 - January 2007 and another one in December 2010 - January 2011. Just before the first survey, there was a boom period in Polish economy (2006-2007), when all the main sectors grew rapidly. The period between the surveys of 2007 and 2011 included the peak of the current business cycle (the first quarter of 2008) and the trough (the first quarter of 2009) after which an economic activity once again began to

expand. Poland was the only EU Member State to have avoided a decline in GDP during the late 2000s recession (Graszewicz M. et al., 2010; Ministry of Finance, 2011).

The sample of target respondents (N=200) was taken by a two-stage selection process. First, the sample structure was determined using the quota sampling controls based on the known structure of the individual agricultural holdings in Poland according to their farmland size and regional distribution. Then, a purposive sampling was applied in order to target only those managers of the farms who had been customers (service users) of the two agencies.

Table 3 provides a description of the two samples' characteristics. The majority were aged 41 years or older; just over 70% of each sample were male. In 2007, about 45%, and in 2011, about 54% had been educated through to at least secondary school. Of the 200 respondents, only 29% declared having an access to the Internet in 2007, while in 2011, this fraction achieved 72%, showing remarkable improvement. Nearly half of respondents assessed their farm situation as being

Table 3

Sample characteristics, N=200

Characteristics		2007	2011
		Percentage	
Gender	Male	70.0	72.0
	Female	30.0	29.0
Age (years)	18-40	33.5	30.0
	41-64	60.0	67.0
	65 and more	3.5	3.0
	No answer	3.0	0.0
Education	Primary	11.5	9.0
	Basic vocational	44.0	37.5
	Secondary	36.0	43.5
	University	8.5	10.0
Subjective farm situation	Very good	2.0	2.0
	Good	29.5	30.5
	Regular	51.5	49.0
	Bad	16.0	15.0
Access to Internet	Very bad	1.0	3.5
	Yes	29.0	72.0
Years of cooperation with ARMA	Up to 5	85.0	12.5
	5 and more	15.0	87.5
Years of cooperation with AMA	Up to 5	78.0	33.5
	5 and more	22.0	66.5

Source: author's calculations based on the survey data

neither good nor bad, but the percentage of those who perceived it as bad or very bad increased slightly from 17% in 2007 to 18.5% in 2011. Similarly, there was a rise in the share of surveyed farmers having more than 5 years of experience with the agencies.

2. Measures

Farmers' views/perceptions about the two agencies were collected through structured questionnaires containing questions related to different aspects of each agency's performance. Farmers were asked to give their responses to the same set of items. The reputation of the agencies is exemplified by sub-set of 13 variables shown in Table 4. Those original attributes were developed based on reputation literature. All items were measured on ten-point Likert-type scales where (depending on question) 1 is "disagree completely", 10 is "agree completely" or 1 is "not at all satisfied", 10 is "very satisfied". It is assumed that reputation is positively affected by all the attributes, except for "Agency is politicised" variable. Thus, overall reputation score was obtained by calculating the average of the 12 averages of the samples.

Research results and discussion

It is reasonable to expect that the perception of reputation (normative reputation) of agricultural agencies amongst surveyed farmers is fairly good as they may believe that the government ought to be involved

in protecting agriculture and rural areas or perhaps they do not think about the agencies generally but about their own experience and benefits from the policy delivered by those agencies. The study findings are supportive for this assumption (Table 4).

Farmers' satisfaction with the delivery of payments (payments made on time) received the highest values from the respondents, followed by the statement "Agency is important for the development of Polish agriculture". The practice of many nations is to use public administration for political purposes. As concerns the judgment of respondents regarding bureaucratic autonomy, i.e. the situation when neither politicians nor organised interests influence the action of the agencies, the scores for each attribute were neutral. The ARMA generally received more favourable mark for overall (summary) reputation than the AMA. It is possible that higher recognition of the ARMA was due to its involvement in administration of direct farm payments and Rural Development Programme. For both agencies the overall reputation score as well the all (the ARMA) or majority (the AMA) of its components have slightly improved between 2007 and 2011.

The limitation of results is that they only refer to Polish public sector organisations and only to the two agencies, so they could not be generalised to other countries and to the entire public administration in Poland.

Table 4

Averages scores given to reputation attributes and overall reputation

Attributes	AMA			ARMA		
	2007	2011	Change	2007	2011	Change
Agency... is an ideal government office	6.3	6.9	0.6	6.6	7.6	1.0
acts in the best public interest	6.5	6.8	0.3	7.0	7.2	0.2
effectively manages public money	6.4	6.3	-0.1	6.4	6.6	0.2
is resistant to the influence of different interest groups	6.0	5.6	-0.4	5.9	6.2	0.2
is politicized	5.8	5.8	0.0	6.1	5.6	-0.5
provides high quality services for farmers	6.7	7.2	0.5	7.1	7.4	0.3
meets farmer's all expectations and demands	6.2	6.7	0.5	6.6	7.2	0.6
provides reliable/sufficient information about the EU-programmes	6.6	7.1	0.5	7.1	7.4	0.3
is trustworthy	6.6	6.8	0.2	7.1	7.4	0.3
is important for the development of national agriculture	7.1	7.2	0.1	7.4	7.9	0.5
Farmers' satisfaction with delivery of payments	8.2	8.1	-0.1	8.0	8.1	0.1
Farmers' overall satisfaction with administration of delivered programmes and schemes by the agency	6.1	6.6	0.5	7.1	7.3	0.2
Average (except for Agency is politicised attribute) = overall reputation score	6.6	6.8	0.2	6.9	7.3	0.4

Notes: Ratings were given on a 10-point scale. Average (overall reputation) score = (1 to 2) represents a very negative reputation, (3 to 4) represents a somewhat negative reputation, (5 to 6) represents an average (neutral) reputation, (7 to 8) represents a somewhat positive reputation, and (9 to 10) represents a very positive reputation

Source: author's calculations based on the survey data

Conclusions, proposals, recommendations

Much of reputation literature concerns private organisations (corporations) and few studies deal with reputation in the public sector. This paper is an initiative to fill a gap in empirical research on reputation of the government agencies in Poland represented by the ARMA and the AMA that are also executive arms of the EU and the Common Agricultural Policy.

Own research findings challenge the widespread criticism that most public agencies are of low reputation, and reveal that the surveyed agencies have neutral or a somewhat positive reputation, at least in the eyes of one group of stakeholders. However, the results also suggest that agencies might improve reputation by being more responsive to the demands not only of farmers as the indirect users of public administration services but also of all citizens (by putting a greater focus on the satisfaction of general public interest).

The research can contribute to both theory and practice by providing alternative results on public administration reputation. The research results may be of interest to those who manage or control the agencies as well as those searching for ways to measure the effectiveness of public sector organisations.

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Development Possibilities of Farms in Latvia

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Abstract. The authors of the paper have tried to find out some possibilities favourable to the development of Latvian rural areas and to diminishing of differences between the regions of Latvia.

Taking as basis the concept that a decisive role in such development is played by the increase of the productivity and skilled activities of the farmers, the authors pay attention to effective use of such kind of production resources as material capital and social capital.

The authors conclude that the farmers should concentrate their attention not only on economic factors, but they have to pay more attention also to social factors, especially to such ones related to agriculture.

Key words: development possibilities, cooperatives, social capital.

JEL code: Q1 Q12

Introduction

The aim of Latvian economy to approach possibly soon the living standard of developed countries has already been for several years. Vital preconditions for the achievement of this aim in Latvia include strengthening of the economic growth, balanced social economic development, and measured living standard.

The economic growth and the processes of social economic development are burdened by implications of the recent crisis, in result of which a slowdown had set in, leading to a decrease in consumption of households nearly about of one third and in investments – almost about of one half. Concerning the amounts, a return to the level of 2004 took place, followed by simultaneous increase of inequality. More or less, the gap between the wealthy and less wealthy strata has increased. The income continued to be distributed more and more unequally. During the period of 2000-2008, the Gini coefficient has increased from 34 to 38 points (Kazaks, 2010).

The consequences of the crisis affect most of all the rural population, since the territorial inequality continues to become stronger. It is evidenced by the social economic differences between the capital Riga and the rest of Latvia's territory as well as by the proportion of the population living poorly at the time being or close by the poverty threshold. The GDP per capita in Latgale is 3.2 times, in Vidzeme and Zemgale – 2.7 times, and in Kurzeme – 2.2 times less than in Riga. As it is shown by the poverty risk index, in 2008 the proportion of population being poor or near to the poverty threshold made 16% in Riga, 20% in Pierīga, 34% in Kurzeme, 25% in Zemgale, 32% in Vidzeme, and 42% in Latgale (Gadagramata, 2009), and it is the highest index in the EU. Practically, Riga is one pole and the rest of the Latvia - the other one.

In such situation, when there is a necessity to overcome the implications of the crisis and to diminish the social economic differences, tending simultaneously to a sustainable even development all over the country, the readiness of all enterprises and individuals to be

prepared for active participation in the increase of production and its productivity becomes an indispensable topicality, requiring to perceive and use for this target all existing and potential possibilities. In this paper, the authors determine to analyse these problems from the viewpoint of Latvian farmers. The **research object** is the development possibilities in rural areas, the **research subject** – the farms engaged in milk production.

The **aim** is to find out the development possibilities of farms in Latvia.

The following **tasks** will be solved to achieve the aim:

- 1) to characterise the factors affecting rural farms;
- 2) to analyse the development possibilities of farms in Latvia;
- 3) to evaluate the role of development possibilities in the growth of milk livestock farming.

The **methods** used in the research: monograph, analytical, inquiry etc.

Research results and discussion

The increase in production and its productivity depends on how actively and skilfully the farmers will be able to take advantages of the ensured possibilities related to a more rational use of disposable resources, getting a return that provides a normal managing of the farm. Normal managing means such kind of managing that leads to creation of a ratio between the production costs and revenues, which result in a situation that the farmer may be well-off and is interested in the development of production, taking advantages of his enterprise and initiatives in close relationship with the adoption of new knowledge, taking the best from the past, paying the main attention to the present and looking helpful in the future (Pennel, 1997).

Only a sufficiently knowing farmer may be able to understand fully his role when farming in rural areas, combining the production factors, and carrying out activities forcing resources to create wealth (Drucker, 1985). An important role is played by new combinations of knowledge based on already existing knowledge.

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Wherewith, it may be said that it turns out as if to be dealt with an interactive learning process that may provide an opportunity to combine single knowledge areas in a new way as well as to create new knowledge, sometimes even coming to new processes or new products. It is essential that such interaction is typical not only to scientific research area but it is also related to everyday economic activities including progression, production, and marketing. This interaction may have a very great scope and take place between individuals and production structure units in the framework of an enterprise, between enterprises and consumers, between different enterprises, and between enterprises and different organisations (Edquist, 1997). In dairy-farming, for example, such interaction may take place between dairy-farms in the framework of a cooperative, between the cooperative and processors etc. The more expanded is the cooperative, the more vast area will embrace this interaction.

It is indisputable that the more knowledgeable is the farmer; the multi-shaped possibilities will be at his disposal to come to a new creative combination. The knowledge results in human capital, but it is necessary to improve it and that requires investment. In this context, it is worth considering some concepts related to common agriculture policy, namely, that, notwithstanding some essential considerable exceptions, the problem of improvement of human capital becomes neglected in agriculture policy, paying the attention mainly either to support of prices and market management or to the capital adaptation invested into land run, and buildings and equipment. Yet, investment into people is fundamentally important, if they hope to benefit from improvements in other production sectors (Pennel, 1997). Besides, the investment into human capital may have a close relationship to formation of the social capital.

Finding and use of possibilities based on continually growing knowledge is a many-sided phenomenon, the specificity of which depends on a concrete area, its structure, management conditions, and results. In the process of using his entrepreneur-capacity and combining the production factors, the farmer's success depends greatly on his ability to evaluate the factors both facilitating and impeding the production, and to perceive the possible sustainable management changes that may be favourable to production development and improvement. The development of an enterprise depends not only on the physical or human capital. The process of connections that relates to the collaboration, confidence, cooperation etc. is also of importance. In this context, it is essential to evaluate the role of social capital.

Originally, the concept of social capital was used in studies related to the society, but recently this concept is to be used widely in studies connected with organisations and enterprises in connection with the social context, with inner relations between the structures and organisations (Jacobs, 1965; Burt, 1992; Nahapiet, 1993).

The social capital contributes to the exchange of resources and their combination between the structural units of the organisation, and it has a positive impact on innovation of the products (Tsai, Ghoshal, 1998). Different success of enterprises may be explained by the intensity in linking to other participants of the social networks (Adler, Kwon, 2002). The social capital may contribute to

increase of the productivity in the enterprise and provide essential cost preferences in competition (Grave, 2003).

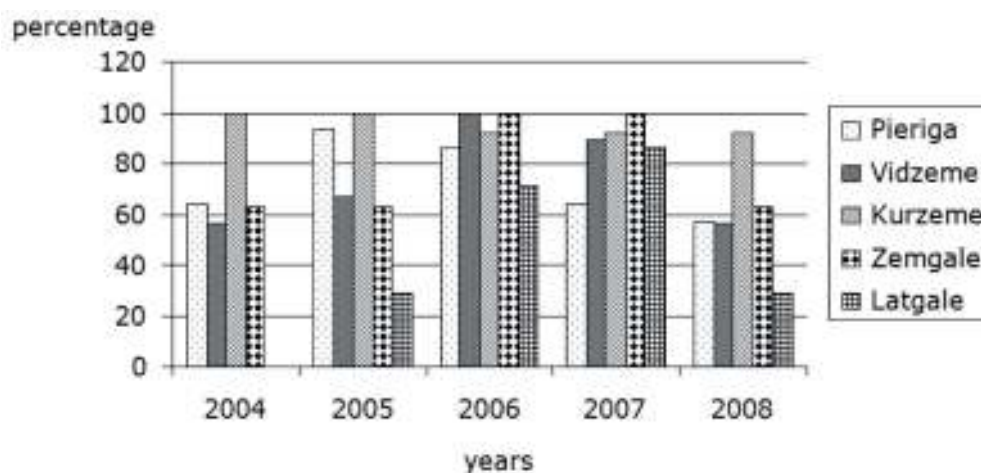
The scientific literature contains several definitions of social capital. With the social capital concept in this paper, the authors understand the benefits resulting from interrelations and social structures developing in the network and effecting action of the individual (Pelse, 2006). In its turn, with dairy farms, it is to be understood such farms that produce and sell milk to processors and consumers.

On the basis of their previous research (Pelse, 2003, 2004, 2006; Zvirgzdina, 2009, 2010), the authors are, in practical part of this paper, determined to find out the possibilities favourable to the development of farms in Latvian rural areas, especially in milk production; originally defining essential factors related to the farms and their development:

- size of the farm;
- proportion of profitable farms;
- accessible amount of investments;
- social capital at disposal of the farm owners;
- involvement in the cooperative.

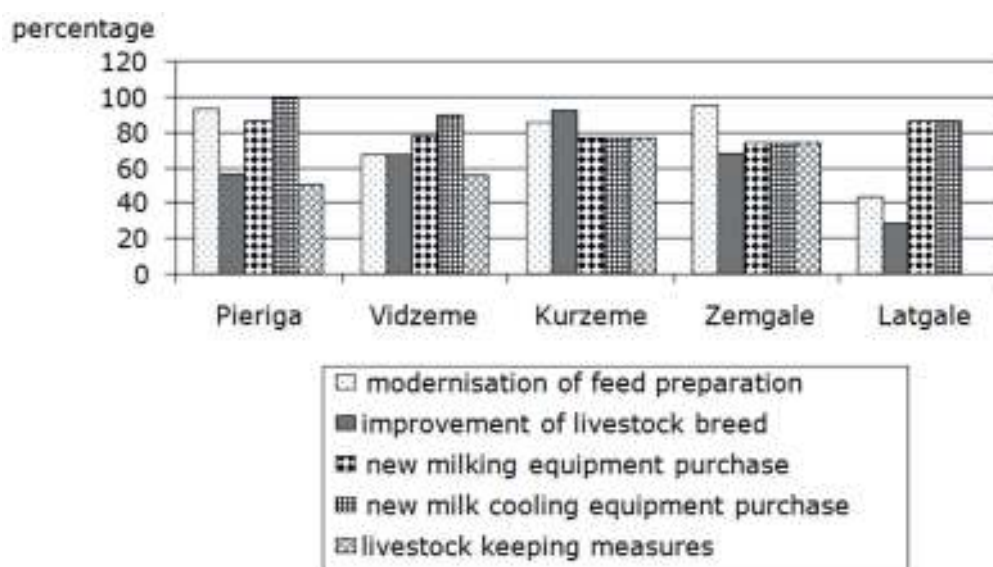
Two inquiries of farmers were carried out to find out the possibilities favourable to rural development in Latvia. The one, being of a common nature, was carried out in 2010 with the aim to find out the attitude of farmers to intensification opportunities in the production. In this inquiry, the general multitude was formed by the farms employed in an intensive production of milk throughout Latvia, and the data were interpreted in a regional aspect. The second inquiry was carried out in one of the regions of Latvia – Zemgale in 2006, and it was aimed to find out the role of social capital in the development of farming. The number of respondents in this inquiry made 207.

If one characterises the **size of farms** involved in milk production, then the distinctive size is evidenced by the number of milking cows in them. In 2009, the number of farms with 1-2 cows made 72.0%, 3-5 cows – 13.5%, 6-9 cows – 5.8%, 10-19 cows – 4.6%, 20-29 cows – 1.6%, 30-49 cows – 1.2%, 50-99 cows – 0.8%, and only 0.5% of all farms had more than 100 milking cows in Latvia. The smallest farms, i.e. the farms with 1-2 milking cows, owned only 18% of the whole number of milking cows, whereas, the biggest farms – 23.9% (Data of Latvian CSB). Therefore, it is understandable that the vast majority of quota-holders (60%) are represented by the farmers with the number of cows up to 5. The number of quota-owners with 6-49 cows makes 36% but the number of quota owners with more than 50 – only 4%. In return, the proportion of milk sold is quite the opposite: in the group with the number up to five cows, the amount of milk sold made only 9% of the whole amount, in the group with 6 to 49 cows – 39% but in the group with more than 50 cows – 52% (ZM Lauksaimniecības zinojums, 2011). Presently, the small farms in Latvia are disallowed to get involved into large-scale production of milk products, as the milk collection from the cowherds with 1-2 or 3-5 cows does not practically take place. This kind of milk supply is recognised as unprofitable by milk processors, thus, approximately 4/5 of the cow owners produce milk for self-consumption and only 1/5 of them develop this activity as business. Wherewith, one of



Source: authors' construction based on the inquiry results in 2010

Fig. 1 Proportion of profitable farms in the regions of Latvia in 2004-2008, %



Source: authors' construction based on the inquiry results in 2010

Fig. 2 Evaluation of respondents on investments in milk production in 2004-2008, %

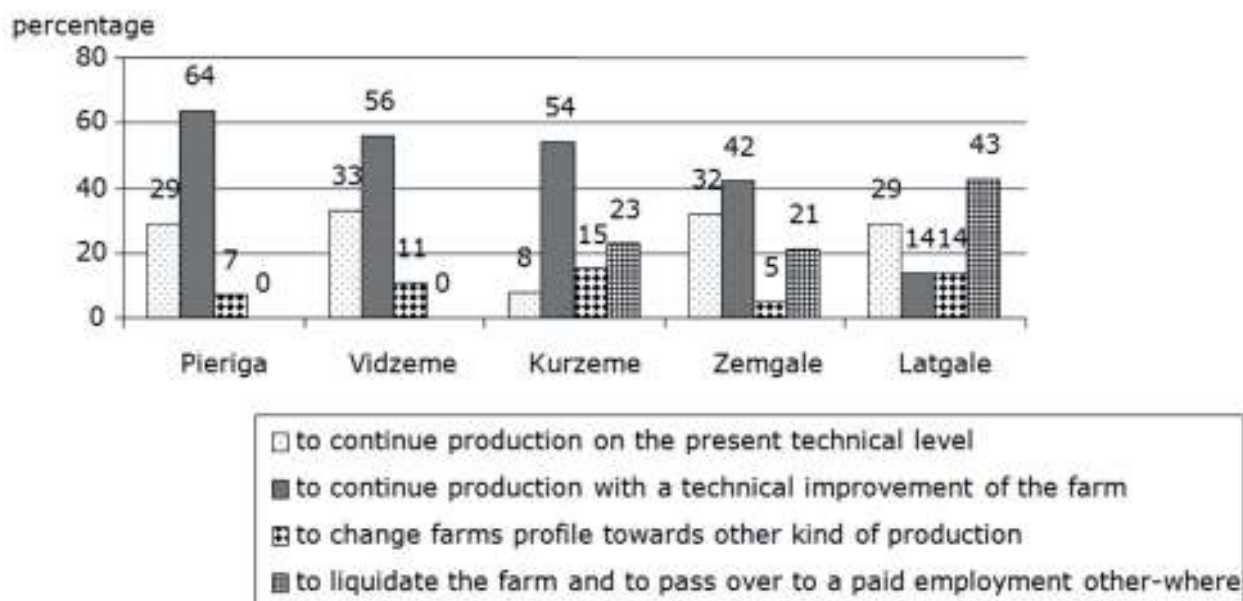
the development possibilities is related to enlargement of the farms.

As it is to be seen from results of the inquiry carried out in the 2010, **the number of profitable farms** differs in both dimensions - years and regions, and the situation on this score cannot be considered as a favourable one. Although, as it is to be seen from Figure 1, the indices for the period of 2005-2007 are characterised by some increase that, to a certain extent, may be counted for a more favourable milk purchasing prices and the support policy implemented by the state, nonetheless a decrease follows thereafter. Since the unfavourable changes have touched Latvian regions, the authors concluded that the differences among the profitable enterprises have had substantial causes related to a different use of production resources.

Not always the fact of a farm being profitable provides a sustainable development of it. It is essential to estimate

the accessible amount of financial resources for investments. The insufficiency of financial resources for investments is evidenced by the fact that not all the farms, being inquired, were able to invest in such important areas as modernisation of fodder preparation, improvement of livestock breed, acquiring of new milking and cooling equipment as well as the livestock welfare (Figure 2).

It is typical that comparatively least financial resources were invested into improvement of livestock breed, being carried out only by 48% of respondents. It affected negatively the milk production that is evidenced by the fact that the farmers, having invested into improvement of livestock breed, had an average milk yield per cow, being 15% higher than the yield of farmers without such investments. The highest proportion of farmers without investment into improvement of livestock breed is typical to



Source: authors' construction based on the inquiry results in 2010

Fig. 3 Opinion of respondents on the development possibilities in the regions of Latvia in 2009, %

Latgale region farmers; only 29% of them had invested financial resources into improvement of milk cows' breed.

Investments into the purchase of new milking and milk cooling equipment are more or less the same in all regions, and approximately 75-90% of all respondents had made such investments into the development. Investment potential made into development is the one that determines also, to a great extent, the inclination or its opposite – the disinclination of farmers to continue the business. Overall, the situation is such that not all the conditions are stimulating the inclination to start or continue the production (Figure 3). Only in Pierīga, Vidzeme and Kurzeme regions, more than half of respondents are inclined to continue production, and modernising the farm. On the contrary, a part of milk producers in Kurzeme, Zemgale and, especially, in Latgale are considering the possibility of changing their activity profile or a full liquidation of the farm. More than half of all respondents in Latgale region have a similar trend.

In all regions, approximately one third of all farms are convinced that they are going to continue their activities on the present level. It should also be mentioned that milk production in Latvia has been one of the activities subjected to a rather essential impact not only of economic conditions on every farm but also on the demand of products on both local and export markets as well as on milk processors' capacity, supplied choice of products and changing conditions of marketing having not contributed to the stability and sustainability in this area.

If all the aforementioned and analysed factors were related to the economic conditions, and to a degree to finances, then the next factor to be verified – the **social capital** is related more to the social conditions. Yet, it is necessary to point out its ability to materialise, providing 'tangible benefits'. To define the presence of social capital and its impact on the development in the

carried out inquiry, the following variables that show the development level of the farms were used:

- used land area (ha);
- changes in the used land area (ha) in the past 10 years;
- use of the EU funds for farm development;
- current economic situation of the farm;
- respondents opinion about their farms viability in the future.
- Farmers' social capital indicators were:
- involvement in different social activities;
- cooperation and membership in associations.

Data were calculated using SPSS. To find any links between variables, the authors used Chi – Square test, while p-value approach was used for decision making. The data credibility rate was assumed at $\alpha=0.05$. Statistical credibility coefficients Phi and Cramer's V were used for characterising relationships between two indications.

When analysing the survey data presented in Table 1, one can see that there is a relationship between the criteria of economic success: farmed land area, its changes; respondents' participation in different professional societies, associations, unions, and farmers' participation in different public agricultural organisations - the p-value is less than 0.05. There are also relationships between the farm viability and farmers' participation in professional societies, associations and unions ($\chi^2=6.513$), and the use of the EU funds and farmers' participation in public agricultural organisations ($\chi^2=6.343$), the p-value is less than 0.05. The social capital indicators like farmers' participation in local government working groups, organised sport activities and amateur bands are not useful for farm development because the p-value is greater than 0.05, except for one case – a relationship emerges between farmers' participation in organised sport activities and farm viability – $\chi^2=6.343$ and is less than 0.05. Respondents' involvement in political parties and public activities of religious organisations

Table 1

Relation of public activities to farm growth criteria

Involvement of farm managers in public activities	Value	Farmed land area	Land area changes	Use of EU Funds	Material position	Farm viability
In professional societies, unions, associations	p χ^2	0.000 27.772	0.001 18.623	0.083 2.998	0.680 0.771	0.039 6.513
In public agricultural organisations	p χ^2	0.000 53.453	0.001 18.378	0.012 6.343	0.378 1.946	0.094 4.729
In working groups tackling local government problems	p χ^2	0.312 5.938	0.532 3.157	0.625 0.239	0.061 5.587	0.615 0.973
In organised sport activities	p χ^2	0.188 7.473	0.2 5.991	0.061 3.514	0.23 2.939	0.045 6.193
In amateur bands	p χ^2	0.405 5.088	0.164 6.512	0.21 1.570	0.209 3.133	0.764 0.540

Note: values having a significant relationship between factors are shown in bold

Source: authors' calculations based on the survey results of 2006

Table 2

Relationships between indicators characterising farm growth and farmers' participation in cooperatives

Indicators characterising the economic growth of farms	Values		Cramer's V
	χ^2	p-value	
Farmed land area	39.249	0.000	0.435
Land area changes	31.802	0.000	0.392
Use of the EU funds	17.260	0.000	0.289
Material position	10.310	0.006	0.223
Farm viability	7.699	0.021	0.193

Note: values having a significant relationship between factors are shown in bold

Source: authors' calculations based on the survey results of 2006

was ascertained in the survey. Only 6 respondents out of 207 admitted to be involved in a political party or a party group, and only 8 respondents said to be involved in religious organisations. Therefore, these indicators are not included in the table.

Most of relationships emerge between the criteria selected to characterise farms' development level and social capital indicators, the indicators of farmed land area and its changes point to the farmers' participation in public activities.

Cooperation is quite poorly developed in Latvia, yet, it has to be noted that cooperation in agriculture is much more developed than in other industries of the national economy. Farmers **engaged** only in agricultural **cooperatives**. Presently, in Latvia, a few dozens of strong cooperatives have emerged in which rural entrepreneurs trust.

In the survey, the authors wished to get to know respondents thoughts whether co-operatives improve or hinder farmers' performance. Only 123 respondents out of 207 believe that cooperatives improve farmers' performance, five respondents think that they hinder, 46 respondents are convinced that there is no effect, while 33 respondents had no opinion on this question.

After assessing the gained survey results, one has to conclude that relationships exist between farmers'

engagement in cooperatives and farm development criteria, since there are relationships between all the indicators; the p-value is less than 0.05 and the Chi-Square value is within the range of 7.699 (farm viability) and 39.249 (farmed land area). Besides, the strongest relationship was observed between the indicator of farmed land area and farmers' engagement in cooperatives. The author justifies this fact by Cramer's V=0.435, the weakest association was observed between farmers' engagement in co-operatives and farm viability – Cramer's V=0.193 (Table 2). It means that cooperation plays a significant role in developing farms in rural areas.

Conclusions, proposals, recommendations

1. Development possibilities in the rural areas of Latvia are related close to the entrepreneurship development typical to rural areas. For farmers, it is essential to widen their activities, increasing the number of cows in dairy livestock farms. A profitable farming may provide possibilities of investment attraction to rural farms. In milk industry, the investments are of importance in equipment renovation and improvement, yet, a direct effect, resulting in an increase of the profit, may be provided by cultivation

- of the herd, providing an increase in milk yield of 15% thereby.
2. An essential development possibility for rural farms is related to the social capital and potential possibilities of its increase. The social capital of farmers has an effect on the growth of their farms, since the inner relationship between the farm's development indices and the indicators of farmers' social capital such as farmers' participation in professional societies, unions, associations, and in different agricultural social organisations and participation in agricultural cooperatives.
 3. The farm owners should concentrate their attention not only on economic factors as the only ones favourable to a development. For the sake of development, the social factors shall also be used more, including the participation in social activities, involvement in social organisations, especially such ones related to agriculture as well as uniting and activating in different cooperatives.

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RURAL BUSINESS AND FINANCE
2. Finance And Taxes

Aspects of Inflation and Interest Rates in Latvia

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Abstract. In Latvia, unlike in the developed countries, higher inflation and interest rates as well as their higher fluctuations are observed; inflation rates often exceed interest rates. The research aim is to investigate several aspects of inflation and interest rates in Latvia. According to the present research, the large fluctuations of inflation rates are caused due to both differences in measuring inflation and fast growth or a recession in the national economy. With the Latvian lat being pegged to the euro, negative real interest rates turn to be an often phenomenon in Latvia, which may not be unambiguously viewed as a financial loss to an investor. Yet, a high inflation rate due to different weighting patterns for inflation calculation and the so-called B-S effect might prevent Latvia from meeting the Maastricht criterion of inflation.

Key words: inflation, interest rate, B-S effect.

JEL code: E31, E43

Introduction

In 2008, a global financial and economic crisis began in Europe and Latvia. The crisis was very severe in Latvia compared with other world countries, severer even if compared with other Baltic States. The crisis exposed and explicitly showed many mistakes made during the previous years when the economic growth was imbalanced and based on domestic consumption and imports. One of such mistakes was the fact that both households and enterprises, and the government did not save any funds. It was promoted by several factors. One of these factors is an assertion in economics that financial capital owners lose purchasing power if a real interest rate is negative, thus, discouraging households and enterprises to save funds. Such an assertion is useful in developed countries whose governments and central banks concentrate mainly on the economic growth, inflation, and interest rates when making their economic policies. A secondary role belongs to their foreign exchange rate. Yet, in Latvia, it is vice versa – the main attention is paid to the foreign exchange rate or stability of the national currency lat. The monetary policy targeting at a stable foreign exchange rate, in its turn, significantly determines both economic growth, and inflation and interest rates in the country. Statistical data indicate that changes in both inflation and interest rates in Latvia are much greater than in the developed countries (Eurostat, 2011). It has to be noted that it is not possible to keep the lat pegged to the euro and at the same time to achieve desired rates of inflation and interest.

Research **hypothesis:** several factors of inflation increase inflation indicators and their changes in Latvia, which negatively influence decisions of depositors and investors to make savings and investments.

The research **aim** is to investigate several aspects of inflation and interest rates in Latvia.

The following research **tasks** were set to achieve the research aim:

- 1) to specify the methodology of measuring indexes of inflation in Latvia in comparative aspect;

- 2) to ascertain the impact of the Balassa-Samuelson effect on inflation in Latvia;
- 3) to investigate the real interest rates in Latvia in comparative aspect;
- 4) to investigate the problem of meeting the Maastricht criterion of inflation in Latvia.

Research methods of analysis and synthesis, the abstract and logical methods, and inductive and deductive methods were applied in the present research. Statistical indicators provided by the Central Statistical Bureau of Latvia (CSB), Eurostat, and the Federal Statistical Office of Germany (Destatis) were used for the present research.

Research results and discussion

1. Inflation and its measurement in Latvia in comparative aspect

Economics views inflation as a general increase in the price level of goods and services within a certain period. There are several factors of inflation that are usually discussed but the present paper focuses on less-known aspects of inflation.

Every country has its own methodology for measuring the index of inflation, and the main difference in measuring the index of inflation is related to weights of every good and service in the index of inflation. These weights are set as a proportion of expenditure on every commodity and service in the total expenditure of households. At the end of every year, the weights are recalculated in Latvia, and, thus, the weighting pattern for its index of inflation changes (CSB, 2011). In the European Union, the EC Regulation No. 1114/2010 sets the standard for weighting patterns for an index of inflation.

If these weights of goods and services are compared between various countries, certain differences are observed; besides, the differences for certain goods and services or their groups are even very significant. If these weights are compared between Latvia and developed countries, the largest differences are observed for such groups of goods and services as food and energy – fuel, heating etc. For instance, in Germany, as a representative

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Table 1

Weights of certain goods and services in the consumer price index in Latvia and Germany, %

Code	Group or subgroup of goods and services	Latvia						Germany	Latvia/ Germany
		1995	2004	2008	2009	2010	2011	2005-2010	2010
01	Food and non-alcoholic beverages	49.7	29.0	24.0	23.8	24.3	25.4	10.4	133.7
045	Electrical energy, gas and other fuels	10.0	8.8	6.8	8.0	8.9	10.5	6.0	48.3
0455	incl. thermal energy	4.9	4.6	3.3	3.7	4.1	4.5	1.2	241.7
06	Health	1.1	3.9	4.4	5.1	6.1	5.8	4.0	52.5
07	Transport	6.3	10.4	13.9	13.2	12.9	13.3	13.2	-2.3
0722	incl. fuel	1.5	3.7	4.9	4.2	5.7	5.8	3.6	58.3
10	Education	0.9	1.6	1.3	1.4	1.8	1.7	0.7	157.1

Source: author's calculations based on the CSB, Destatis

developed country and in other developed countries, expenditure on food accounts for approximately 10% of the total household expenditure, while in Latvia it is around 25%, i.e. 2.5 times more (Table 1). In the period of 2005-2010 in Germany, the weights of goods and services in the harmonised consumer price index were based on the weighting pattern of 2005 (National Statistical Institute of Germany, 2011).

More than 15 years ago, the difference in weights of food in the consumer price index between Latvia and developed countries was even greater than now. Since a fast transition from the inefficient command economy to a market economy occurred in the 1990s in Latvia, the standard of living decreased, although, there was a significant difference in the standard of living between developed countries and Latvia under the command economy. According to Engel's law, the share of expenditure on consumer goods (first of all, food as well as other necessities) decreases with the increase in income. Although, actual expenditure on these goods increases; the shares of expenditure on rent, fuel, electricity as well as clothing do not change significantly, whereas, the shares of expenditure on education, health, entertainment, and luxury goods increase (Samuelson P., 1992). According to this law, the lower is income, the greater share of this income households spent on food. Due to the mentioned reasons, the standard of living in the first half of the 1990s was very low compared with that in developed countries, and it was proved by the high share of expenditure on food, which accounted for more than 50% during that period. Yet, with the national economy developing in the second half of the 1990s, especially during the following decade, household incomes increased, and, thus, the share of expenditure on food declined from 49.7% in 1995 to 29.0% in 2004. After Latvia's accession to the EU, faster economic growth was observed in the country, unfortunately, it was not a balanced and sustainable growth. Therefore, the share of expenditure on food fell to 23.8% in 2009, and then an increase in this indicator was observed. The change in the weight of food in Latvia's consumer price index was significant during the period of analysis. It made a large impact on the total index of inflation measured

in the country, however, Latvia would not be able to reach the same weight of food in its index of inflation as in developed countries – even according to optimistic forecasts, approximately 30 years would be required (Latvijas Ekonomikas ministrija, 2003). Therefore, the weight of food in the index of inflation in Latvia will be greater than in developed countries for a long time. At an equal change in food prices in the modern global world, the contribution of inflation of the group of food goods to the total index of inflation in Latvia will be comparatively higher than in developed countries, i.e. presently approximately 2.5 times.

As regards other groups of goods and services, their weights in the index of inflation in Latvia are not as large as the weight of the group of food, thus, their impacts on the total index of inflation are not so great. However, the differences in these weights between Latvia and Germany are large as well. The largest difference is observed for thermal energy – its weight in the index of inflation in Latvia exceeds the respective indicator of Germany approximately 3.5 times. Therefore, any change in prices of energy on the world market will make a 3.5 times greater contribution to the total index of inflation in Latvia than in Germany.

Similar to the weight of thermal energy, the weights of several other goods and services significantly exceed the respective indicators of Germany, for instance, education and health, petrol and electricity, gas and other fuels. In the period after the accession to the EU, wages and other incomes in Latvia doubled, for instance, an average pre-tax wage was LVL 211 in Latvia in 2004, and the highest indicator or LVL 479 was reached in 2009 (CSB, 2011). Since education and health services are labour intensive, it promoted a significant rise in their prices and an increase in their weight in the index of inflation. This increase in weights occurred in accordance with Engel's law – the share of expenditure on education and health increases with the increase in the standard of living.

In the same way as in the mentioned case of changes in food prices, any change in prices of energy will make a greater contribution to the total index of inflation in Latvia than in developed countries. So significant changes in labour costs regarding many services as in Latvia have

Table 2

Annual increases in GDP, wages, labour productivity and prices of goods and services in Latvia, %

	2004	2005	2006	2007	2008	2009	2010
GDP	8.9	10.1	11.2	9.6	- 3.3	- 17.7	- 0.3
Net monthly wage	8.8	17.0	23.1	32.0	22.5	-2.3	-7.5
GDP per employee	7.6	8.4	5.9	5.8	-4.2	-5.3	4.7
Prices of goods	6.5	6.8	6.5	8.9	15.1	2.6	0.2
Prices of services	5.4	6.5	6.6	13.4	16.3	5.9	-4.3
incl. barber shops and personal care services	14.8	10.6	10.2	20.6	17.0	1.9	-10.1

Source: author's construction based on the CSB

not occurred in the developed countries during the recent decades, and are not expected in the future, either. However, in less developed countries, including Latvia, a faster increase in labour cost might be expected if a forecast was taken into account, according to which Latvia would reach the economic development level of developed countries, even though in a distant future. It means that the index of inflation of many services will be higher in Latvia than in developed countries due to both a faster increase in labour costs and greater weights of these services. In case of an economic crisis, as it was observed during the first wave of the global economic crisis, the labour costs in Latvia sharply declined, which caused a significant rate of deflation for services, and decrease of their weights.

2. Impact of the Balassa-Samuelson effect on inflation in Latvia

There is an important theory in international economics developed by economists B. Balassa and P. Samuelson – the Balassa-Samuelson theory (Krugman P., 1994). A theorem derived from the theory of both economists is the so-called Balassa-Samuelson effect or the B-S effect. These economists researched price differences across various countries and discovered a strong causal relationship – in terms of a single currency, price levels of countries were positively related to the level of real income per capita, i.e. the higher was this indicator and, in its turn, incomes and the standard of living, the higher was the price level. A higher price level is determined by much costlier nontradables such as barber, education, health, rental, construction, local public transportation etc. services that partially or completely cannot be traded across countries due to various reasons. There are quite a few internationally nontradable goods, thus, they may not be taken into account, and one might assume that all goods are tradables. Whereas, the majority of services are nontradables, which is more labour-intensive compared with goods. If a sharp increase in labour costs occurs, it significantly increases the costs of these services and, in its turn, their price as well. Since any increase in prices of services affects the total index of inflation, strong growth in a country causes higher inflation.

During the years of economic boom, a sharp increase in wages or labour costs was observed in Latvia. Partially it occurred due to an increase in labour productivity, which was a desirable and very sustainable process.

However, the component of increase in labour costs that was caused by an inflow of capital from developed countries and an increase of loans to the entire economy and especially consumption was significant as well. Table 2 shows data on increases in labour costs and productivity – after joining the EU, wages increased faster than labour productivity in Latvia. A normal increase in wages and labour productivity was observed in the period before joining the EU. However, owing to the crisis, the imbalanced increase in wages and labour productivity, which was observed during the pre-crisis years, ended and a correction occurred – wages started approaching labour productivity.

The increase in wages significantly affected the costs and price of labour-intensive services. The correlation coefficient between the increase in wages and prices of services was 0.81 but for one of the most characteristic nontradables – barber services – it reached a value of 0.88.

One can conclude from the above-mentioned that the B-S effect was specific to Latvia, i.e. an economic boom caused high inflation – primarily, prices of labour-intensive services rose – and the real exchange rate revalued. Yet, the inflation of goods was mostly determined by processes on the world market – price hikes of raw materials and commodities. Therefore, the B-S effect was the second most important factor that determined high inflation in Latvia.

3. Real interest rates in Latvia in comparative aspect

Economics exploits an assertion that financial capital owners lose purchasing power, whereas, borrowers gain it if rates of inflation exceed rates of return, including rates of deposits (Boyes W., 1990). In this case, it is preferred to spend money or invest it somewhere else, abroad as well. Table 3 shows data on real interest rates. In the entire period from 2004 to 2008, the real interest rate was negative in Latvia, and only after the beginning of crisis, it became positive, besides it was very high. The situation in Germany was quite different – the real interest rate was positive all the time, the only exception was the first year of the crisis, i.e. the year 2008.

The Bank of Latvia has been implementing a tight monetary policy for almost 20 years, paying most attention to price stability as well as keeping the peg rate unchanged. However, it is practically impossible to achieve greater price stability – the only option is to

Harmonised inflation and interest rates in Latvia and Germany

	2004	2005	2006	2007	2008	2009	2010
Inflation							
Latvia	6.2	6.7	6.5	10.1	15.4	3.5	-1.1
Germany	1.8	1.9	1.8	2.3	2.8	0.2	1.2
Nominal interest rates							
Latvia *	4.8	4.0	4.3	6.7	9.9	11.9	5.8
Germany **	3.0	2.8	2.7	2.6	2.5	2.4	2.4
Real interest rates							
Latvia	-1.4	-2.7	-2.2	-3.4	-5.5	8.4	6.9
Germany	1.2	0.9	0.9	0.3	-0.3	2.2	1.2

* - long-term deposit rates in LVL

** - rates of household deposits with a maturity of over 2 years

Source: author's calculations based on the CSB, Destatis

revalue the lat against the euro. In this case, Latvia's exports will be negatively impacted and, on the contrary, the country's imports will be promoted. It will lead to a decrease in Latvia's GDP, an increase in the trade gap, instability in the foreign exchange market as well as other negative effects.

Since the weights in the index of inflation in Latvia differ from such indicators in developed countries as well as due to the B-S effect, inflation indicators in Latvia are only conditionally comparable with the respective indicators in developed countries. Therefore, real rates of return do not have to be partially or even completely taken into consideration when making decisions on financial investments denominated in lats in Latvia on condition that the Bank of Latvia does not change its monetary policy. For instance, the real interest rates in Latvia were negative for a long period until 2009. After the crisis began, those households and enterprises that made savings during that period did not face financial problems. During the crisis, the real interest rates got positive and very high, and thus, saved funds could be used to gain an additional income. Then, interest rates in lats were very high both due to the lack of trust among commercial banks, thus, it was difficult to them to borrow funds in the interbank market, and the fact that the Bank of Latvia sold its part of its foreign reserves to support the peg rate. Hence, the amount of lats in circulation decreased, and due to expectations for the devaluation of the lat that caused interest rates on assets in lats to climb in accordance with interest rate parity.

Presently in 2011, negative interest rates are observed again, mostly due to an increase in tax rates in the beginning of the year and an increase in prices of raw materials and commodities on the world market. It does not mean that it is not profitable to save funds on the present economic conditions in Latvia.

4. Inflation and Latvia's accession to the euro zone

One more aspect has to be outlined in relation to Latvia's possible accession to the euro zone. One of the Maastricht criteria, which has to be met to join the euro

zone, is the criterion of inflation. Since members of the euro zone are mostly developed countries, their weights of goods and services in their index of inflation are quite different from those used in Latvia. Therefore, if prices of food and energy rise significantly, inflation in Latvia will be much higher than in the euro zone. If the economic growth in Latvia is faster, too, which is needed to reach the welfare level of developed countries, the B-S effect will make its impact on inflation, thus, additionally raising inflation indicators. In case there is a hike in prices of raw materials and commodities and, at the same time, an economic boom is observed in the national economy, both these inflationary factors sum up, and it is impossible to meet the criterion of inflation to join the euro zone. Such a period was observed after joining the EU until the first wave of the recent crisis broke out when the annual rate of inflation in Latvia stood at a double digit figure for a couple of years, although annual inflation in the euro zone did exceed 3.3%. Several authors who researched the impact size of the B-S effect in the Central and East European countries, for instance, Fritz Breuss (Breuss F., 2002) from the Austrian Institute of Economic Research and Mihaly Andras Kovacs (Kovacs M., 2003) from the Central Bank of Hungary came to a conclusion that the B-S effect did not make a significant impact on inflation indicators in these countries including Latvia. These research were done in the period before the EU expansion in 2004; right after it an economic boom started in all the Baltic States. Since the economic growth was very strong after joining the EU, the impact of the B-S effect in Latvia was more significant than it was before the accession. Although, the mistakes, which were made by commercial banks allocating loans before the first wave of the crisis, will never be repeated again in the future and there will be no risk of imbalanced growth and overheating of the national economy, even relatively moderate economic growth (as before joining the EU) will make a certain impact of the B-S effect on inflation in Latvia. One can conclude that Latvia is able to meet the Maastricht criterion of inflation if there are no hikes in prices of raw materials and commodities and at the same time, no economic boom occurs in its national economy.

Conclusions

1. Since there are differences in measuring the index of inflation among various countries, any change in prices of raw materials and commodities causes a larger change in inflation in Latvia than in developed countries. These differences in measuring inflation will exist as long as there is a difference in economic development levels between Latvia and developed countries.
2. If an economic boom occurs in Latvia, the B-S effect is also observed – inflation, especially the inflation of nontradables, in Latvia is higher than in developed countries. The B-S effect will make an impact on inflation in Latvia until Latvia reaches the income level of developed countries.
3. If assessing inflation indicators in Latvia for investment purposes, the above-mentioned factors causing larger changes in inflation in Latvia than in developed countries have to be taken into consideration; thus, inflation indicators in Latvia for the purpose of investments may be disregarded partially or completely.
4. With a tight monetary policy and the lat pegged to the euro on the economic conditions in Latvia, rates of inflation higher than rates of deposits or rates of return on other investments may not be unambiguously viewed as a financial loss to an investor; otherwise, households and enterprises making no savings might face financial problems in the future.
5. If relatively strong economic growth occurred in Latvia, which causes the B-S effect, and if at the same time prices of raw materials and commodities rose on the world market, due to different weights of goods and services in the index of inflation, it is difficult or impossible for Latvia to meet one of the Maastricht criteria – the criterion of inflation.

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Agriculture Funding Measures in Lithuania: Demand and Opportunities

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Abstract. Agriculture is a distinctive field of business, which is distinguished by its competitive environment, amount of the EU support, seasonal impacts, and entrepreneurship of this sector. After evaluating the strive and wish of agricultural sector to become financially autonomous and stay competitive, various agriculture funding programmes are presented to Lithuanian agricultural business entities whose purpose is to provide more financial freedom and options while planning daily activities and development of agriculture. Even during the recession, favourable conditions for making the investments were ensured for agricultural sector: direct assignments, preferential credits, credit with the state's guarantee, favourable funding packages for agriculture from commercial banks etc. This paper analyses the trends of direct assignments for agriculture, evaluates the absorption of the EU support for Rural Development Programme, trends of preferential credits, and credits with guarantee granted for agriculture, and, finally, it explores the share of credits issued to agricultural and forestry entities in all credits' portfolio issued from credit financial institutions and its trends.

Key words: support, guarantee, preferential credits, assignment, agriculture.

JEL code Q14

Introduction

Agriculture, which creates gross value added (GVA) and new jobs, substantially contributes to the state's economy (it amounts to 3-6% in the GVA structure). Agriculture is important not only from the economic but also from social, ethno-cultural, and environmental point of view. During the economic crisis, industrial and construction sectors have declined, however, farmers have not felt such severe recession. According to the data provided by the European Restructuring Monitor, in the years of economic crisis, bankruptcies were mostly occurring in the sectors of construction, textile, wholesale and retail, wooden products manufacture, processing industry, hotels and restaurants, and motor industry (Coughtrie, D., Morley, J., Ward, T., 2009). Most researchers (Good, D., Irwin, S., 2008; Shane, M., Liefert, W., 2009; Chavarria, H., 2010; Ikhsan, M., 2010) agree that the world economic crisis in 2008-2009 has affected agriculture less than other sectors of economy, yet, it was impossible to avoid any negative impacts (Krisciukaitienė, I., Namiotko, V., Jedik, A., 2011). Value added created by agriculture, hunting and fishing activities during the recession was growing (in 2009 it has increased by 1.43 percent comparing with 2008). Meanwhile the Gross Domestic Product (GDP) of Lithuania has declined remarkably (in 2009, Lithuania's GDP has decreased by 14.7% comparing with 2008).

Lithuanian financial analysts (Rudzkis, R., Rojaka, J., Genyte, I., 2010) exploring the impact of economic crisis on agricultural sector, indicate the following factors contributing to the leadership of agricultural sector: 1) agriculture is specified by much bigger resistance to the crisis compared with most other economic activities, as food products are basic commodities; 2) agricultural sector is generously funded from the EU and national

budgets; 3) the amount of grants has substantially grown recently; 4) weather conditions were favourable for agriculture; 5) in recent years, amount of occupations were declining in most economy sectors and it has influenced the increase of occupations in agricultural sector.

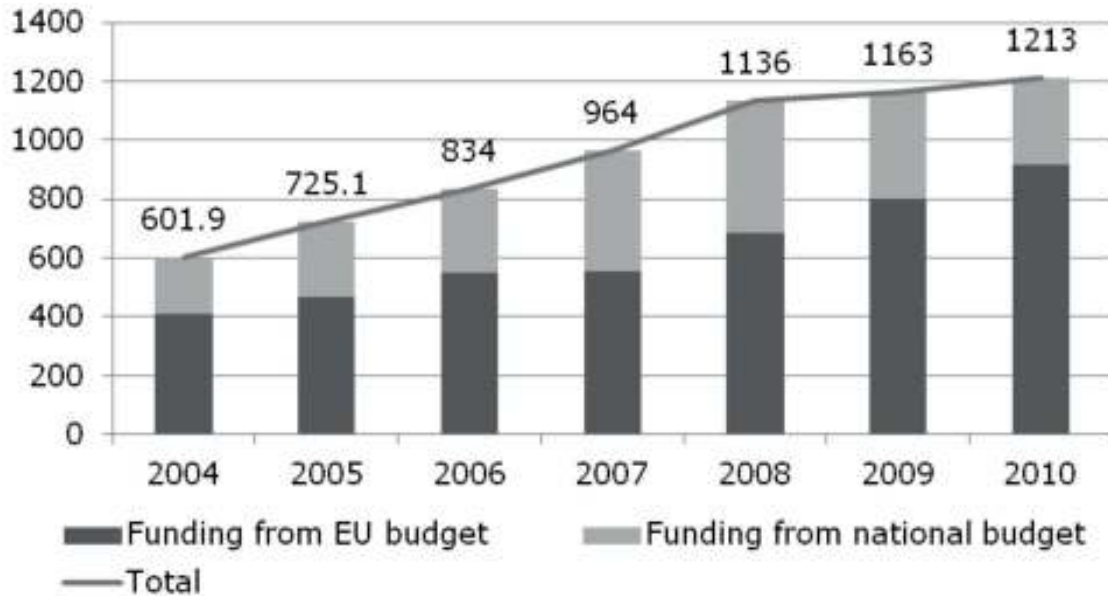
Besides, the environment of Lithuanian agriculture and food industries was positively influenced by natural disasters in the neighbouring markets caused by climate changes: large drought in Russia that destroyed the yield of grain and spring floods in Poland that caused much damage to gardening and farming. These losses have caused the decline of agricultural products supply in the region and a substantial growth of prices that ensured more income for Lithuanian farmers (Lietuvos žemės ir ..., 2011). After evaluating the strive and wish of agricultural business entities to become financially autonomous and stay competitive, various agriculture funding programmes are presented to Lithuanian agricultural business subjects whose purpose is to provide more financial freedom and options while planning daily activities and development of agriculture. Even during the recession, favourable conditions of making the investments were ensured for agricultural sector.

The object of the research is the measures of agricultural funding.

The aim of the research is to evaluate the opportunities and demand of Lithuanian agricultural funding.

The aim is implied by the following tasks: 1) to determine the trends of direct assignments to agriculture; 2) to evaluate the absorption of the EU support for Rural Development Programme; 3) to explore the changes of preferential credits and credits with guarantee granted for agriculture; and 4) to evaluate the share of credits issued for agricultural and forestry entities by crediting financial

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Source: authors' construction based on the data of National Paying Agency, Ministry of Agriculture

Fig. 1. Direct assignments to Lithuanian agriculture in 2004 – 2010, million LTL

institutions in the portfolio of all credits issued, and its trends.

Research methods: analysis of foreign and Lithuanian authors' scientific literature and legal documents, comparison of information, systematisation, detailisation and conclusion methods, and analysis of statistical data. The research period: years 2004-2010.

Research results and discussion

In recent years, Lithuanian farmers were increasingly using the services of crediting institutions. Credits granted to farmers were constantly growing in 2005-2006 and have stayed stable high during the economy deceleration in 2007-2008. It was mostly influenced by the implementation of the common EU and Lithuanian financial support measures for agriculture. While using these support measures, agricultural subjects implementing investment projects shall borrow from financial institutions because the support is paid during a specific period after the project implementation – after implementing the investments planned.

Scientific researchers have shown that in agriculture of the EU Member States the biggest share of capital was funded through credits, and thus, the biggest financial risk was taken in agricultural sectors in Denmark (54.6%), France (37.2%), the Netherlands (35.6%), and Sweden (31.3%). The lowest share of capital was funded through credits, and thus, the least financial risk was taken in agricultural sectors in Greece (0.4%), Italy (1.2%), Slovenia (2.0%), Ireland (2.2%), and Spain with Cyprus (both amounted 2.4%). The average share of credit-funded capital in the EU agriculture was 14.7%. Lithuanian agriculture was similar to the EU agriculture average, meanwhile Latvia's agriculture funded 28.2% of its capital through credits, and Estonian agriculture – 26.4% (Aleknevičienė, V., Aleknevičiūtė, E., 2010).

In Lithuanian agricultural entities, depending on their size, 1.7 – 30.6% on average of owned capital was funded by credits. The financial risk grows with the increase of total area of land (Aleknevičienė, V., Aleknevičiūtė, E., Martirosianienė, L., 2011).

In Lithuania, like in other EU countries, agricultural entities are being funded through direct assignments that support farmers' incomes and promote the development of agriculture. During 1994-2004, the forms and amounts of state's direct and indirect support were constantly changing (Rimkuviene, D., 2004). Direct assignments to farmers are being provided from 2000 with the implementation of legal acts of Minister for Agriculture of the Republic of Lithuania (Lepeskiene, G., Jaskelevicius, K., Narutaviciute, J., 2004). Direct assignments are annual assignments provided to support the income of agricultural entities and to increase the competitiveness of Lithuanian agricultural products (Tiesiogines ismokos ..., 2009). In the Republics of Lithuania, the Law on Agriculture, Food Industry and Rural Development (Lietuvos Respublikos ..., 2008) describes direct assignment as financial support provided to agricultural subject in order to support its income level. In the strategy of agriculture and rural development (Del zemes ukio ..., 2000) the support of agricultural products manufacturers' income level with direct assignments is indicated as a measure of increasing occupation and improvement of social status. Many scientists (Jazepcikas, D., Uosyte, R., 2004; Spriggs, J., Nelson, T., 1997; Vercammen, J., 2007) state that the main goal of direct assignments is to support the income of agricultural entities and they analyse the influence of increasing the state's support for agricultural subjects for stabilisation of income.

According to the declared areas of farming lands and crops, direct assignments are provided to Lithuanian farmers according to the scheme of one-time assignment for a particular area, according to which the EU direct

assignments are paid for the declared area of farming land and crops, irrespective of the type of production. Besides these assignments, additionally farmers receive national direct assignments from the national budget of Lithuania for declared crop areas, cattle, and milk (Figure 1).

In 2010, totally LTL 1.2 billion were paid in support form of direct assignments from the EU and Lithuanian budgets, i.e. 4.3% more than in 2009. As illustrated in Figure 1, the share of support provided from national budget decreases with the growing share of the EU support (this is regulated by the Council Regulation (EC) No. 73/2009 of 19 January 2009).

In 2004, when Lithuania became an EU Member State, the funding of agriculture has grown substantially – new direct and investment support measures were implemented, national support measures were reformed. Lithuanian Rural Development Programme (RDP) for 2007-2013 was confirmed in 2007 after the Single Programming Document (SPD) for the period of 2004-2006.

Large financial support for agricultural sector was influenced by the specifics of this sector and by its importance as a primary chain of food production. The support of investment projects is one of the most promising measures to increase the effectiveness of agriculture (Rimkuvienė, D., 2004). The investments of agricultural entities to agricultural production in Lithuania are strongly promoted and they have become important funding source of long-term investments made by agricultural companies and farmers (Aleknevičienė, V., Jatkunaite, D., 2006).

The amount of the EU support for rural development during 2007-2013 amounts LTL 6096 million, co-funding from the national budget of Lithuania is LTL 1799 million. Total support for agriculture from the EU funds amounts to LTL 7896 million. This Programme is very important to Lithuanian agriculture because of its financial weight and the complexity of problems solved using financial interventions (Table 1).

From the beginning of Programme implementation to the end of 2010, totally 520 thousand applications were received in which the requested amount of support was LTL 5350 million (of which LTL 3948 million – the EU support or 64.8% of the total amount of the EU support during the whole period of the Programme). From the beginning of the Programme to the end of 2010, LTL 2732 million were paid (of which LTL 2283 million are the EU funds, i.e. 37.4% of the total funds dedicated to the Programme by the EU).

Several years ago, commercial banks in Lithuania did not trust the farmers. There was an opinion that agriculture is the most risky sector of economy, thus, it is not worth attention. However, the statistical data reveal that the amount of credits issued to Lithuanian agriculture grows rapidly. It is also influenced by the preferential credits. The banks began competing for the clients-farmers since agriculture, as mentioned before, has least suffered from the economic crisis.

With the beginning of the financial crisis, most Lithuanian farmers found themselves at the crossroads: although it was possible to receive investment support from the EU, it became too hard to receive credit and

contribute to a project because of growing interest rates. However, in autumn of 2009, a new opportunity was presented to Lithuanian farmers seeking to receive credits. Lithuania was the first EU Member State that established Credit Fund, which was meant to provide cheaper credits.

While analysing the opportunity to modernise Lithuanian farms, the Ministry of Agriculture of Lithuania together with the Rural Credit Guarantee Fund presented the project of agricultural funding on favourable terms, i.e. favourable conditions were created for agricultural subjects willing to invest through financial intermediaries, credit institutions, which grant preferential credits for investment projects. The purpose of this financial engineering measure is to create more favourable funding opportunities for agricultural sector and to absorb RDP funds more rapidly and effectively. From the autumn of 2009 preferential credits are granted only for implementation of the investment projects and not for the increase of working capital.

Totally LTL 450 million are planned to be allocated to the Credit Fund, from which 75% is constituted from the European agricultural funds for rural development and 25% from the funds of the national budget. Four stages of fund allocations to the Credit Fund are planned in the funding contract of this financial engineering measure. Preferential credit for farmers and agricultural companies are provided through 8 state's commercial banks and 8 credit unions selected by the Credit Fund (Zemes ukio paskolu ..., 2009).

In 2010, financial intermediaries have signed 346 contracts regarding the preferential credits with the credit recipients, amounting to LTL 96.5 million. During the three stages of Credit Fund activities LTL 227 million were allocated for credit institutions for preferential credits, leading to signing of 356 contracts for LTL 100 million. In 2010, more than one half (54%) of projects under implementation, that received preferential credit terms, were being implemented in the field of plant-growing – the majority was constituted by farms developing the sector of planting crop cultures and rapes. About 28% of the projects were projects related to modernisation of cattle farms and 16% of preferential credits were granted to economy subjects that provide services to agricultural sector (Zemes ukio paskolu ..., 2010).

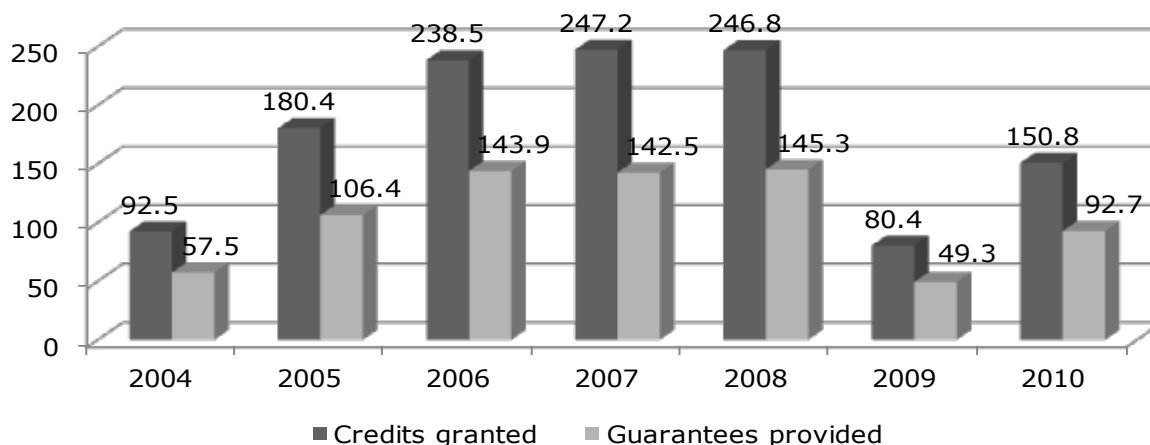
In most cases, Lithuanian farmers and small rural entrepreneurs willing to begin or develop their business do not have the necessary funds of their own, and the credits are very often unavailable due to the deposit shortage. Therefore, already in 1997, the Government of Lithuania decided to establish a Rural Credit Guarantee Fund, which function is to provide guarantees for credits granted for investment purposes or for purchasing short-term capital as well as to provide guarantees for the credit lines. The Rural Credit Guarantee Fund issues guarantees to the banks for the credits granted to farmers, rural entrepreneurs, and processors of agricultural products for investment, short-term assets purchasing, goods, services, raw materials, and other agricultural produce buying purposes. The Fund guarantees to compensate the bank up to 70% (or up to 80% for credits granted to young farmers and

Table 1

The EU support for rural development in Lithuania in 2007-2010

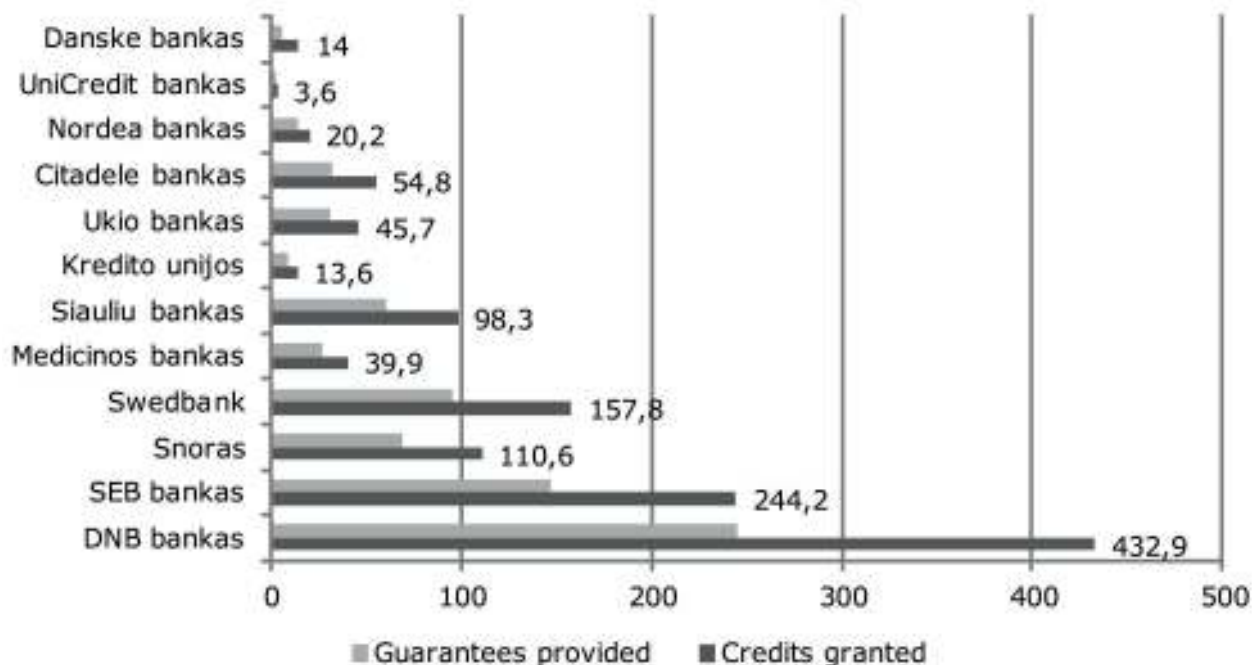
	2007	2008	2009	2010	Total
Applications collected pcs.	114355	134072	136687	135245	520359
Requested amount of support, million LTL	542.72	1272.22	1387.88	2147.59	5350.40
Paid amount of support, million LTL	95.47	302.96	1195.94	1137.26	2731.62

Source: authors' calculations based on the data of National Paying Agency, Ministry of Agriculture



Source: authors' construction based on the data of Rural Credits Guarantee Fund

Fig. 2. Granted credits and provided guarantees for Lithuanian agricultural entities in 2004 – 2010, million LTL



Source: authors' construction based on the data of Rural Credits Guarantee Fund

Fig. 3. Credits granted and guarantees issued to Lithuanian agricultural entities from various credit institutions in 2004 – 2010, million LTL

Table 2

Changes of credits granted to Lithuanian residents by credit institutions in 2004-2010

Year	Credits, total			Credits for agriculture and forestry		
	Amount million LTL	Rate of change %		Amount million LTL	Rate of change %	
		basic	chain		basic	chain
2004	18620.5	100.00	-	365.8	100.00	-
2005	30257.7	162.50	162.50	614.2	167.91	167.91
2006	41781.9	224.39	138.09	797.5	218.02	129.84
2007	56769.4	304.88	135.87	999.1	273.13	125.28
2008	71440.9	383.67	125.84	1493.1	408.17	149.44
2009	61557.5	330.59	86.17	1194.2	326.46	79.98
2010	58338.7	313.30	94.77	1114.3	304.62	93.31
Average	X	115.34	X	X	114.94	x

Source: authors' calculations based on the data of the Bank of Lithuania

agricultural entities insuring their plants) of unreturned credit amount.

It is noticed that the demand for credits with guarantee has substantially grown in 2010 (87.6% more credits with guarantees were granted in 2010 comparing with 2009), the banks and credit unions appreciate the perspectives of agriculture more and more favourably and the farmers see the credit institutions as their business partners (Figure 2).

In 2010, not only the amount of credit guarantees issued to farmers, rural entrepreneurs, and processing entities has doubled but also the number of guarantees have increased from 194 to 415 compared with 2009. More farmers have taken advantage of guarantees but their credits were relatively smaller. While applying for credits, farmers evaluated the investments with more care, they were borrowing more rationally, and thus, the average credit amount has declined: during the year under review it has amounted to LTL 360 thousand and in 2009, it was LTL 410 thousand (Zemes ukio paskolu ..., 2010).

The Rural Credit Guarantee Fund cooperates with all banks and credit unions acting in Lithuania (Figure 3). During the analysed period, most credits with guarantees for farmers, rural entrepreneurs, and processors were granted by DNB Bankas (35%), SEB Bankas (20%), and Swedbank (13%). In 2010, the largest amount of credits was granted by DNB Bankas (22%), SEB Bankas (19%), Swedbank (13%), and Medicinos Bankas (12%). In 2010, almost all these credit institutions have granted more credits with guarantee than in 2009. Credit Unions were more active as well; they have issued even 4 times more credits with guarantee. In 2010, it becomes a trend that more often farmers borrow money from the credit institutions for the increase of working capital. Comparing with 2009, almost 2 times more guarantees were issued for short-term credits.

In order to promote agricultural and rural development more and to ensure the variety of funding sources, the Ministry of Agriculture of the Republic of Lithuania has modified and amended the statute of Rural Credit Guarantee Fund activities and granted the Fund a right to provide guarantees to financial rent (leasing) companies for the equipment purchased by their clients.

Thus, starting from 1 January 2012, a new edition of Rural Credit Guarantee Fund statute has taken effect, according to which the Fund began providing a new service – guarantees not only for the banks and credit unions but also for financial rent (leasing) companies.

Some of the state's commercial banks offer especially good and favourable conditions for the farmers. The credits are granted for agricultural areas modernisation, i.e. new and more state-of-art equipment, machinery, construction, and reconstruction of production premises, i.e. for the objects that facilitate the work of farmers, increase their work efficiency. The cooperation of banks and rural entrepreneurs will allow promoting agricultural development, facilitating the economic situation for both separate farmers and processing companies.

As shown in Table 2, the average changing trend of credits granted to Lithuanian residents in 2004-2010 was 115.34%. It shows that the portfolio of credits granted to Lithuanian residents has annually increased by 15.3% during the period under review.

The average trend of change of credits granted for agriculture and forestry entities amounted to 114.94% in 2004-2010. It shows that credits granted for agriculture and forestry during the analysed period was growing by 0.4 percentage point slower than the total credit portfolio. The analysis of 2001-2007 period has outlined that the average growth of credits granted to residents was 129.2%, meanwhile the average growth of credits granted to agricultural and forestry subjects amounted to 133.0%.

These data show that credits granted for agricultural and forestry entities were growing by 3.8 percentage points faster than the total credit portfolio. One of the factors influencing more rapid growth of credits granted for agriculture was active support of the European Structural Funds, when agricultural subjects funded the necessary share of own funds using bank credits.

The effectiveness of using the credits shall be discussed as well (Table 3). The average rate of change of total agricultural production in 2004-2010 was 104.33%. It shows that the total production of agricultural sector during the analysed period was growing by 10.6% percentage points slower than the credits granted for agriculture and forestry. It was also

Table 3

Rates of changes of total agricultural production and ratio of credits granted for agriculture and forestry, and total agriculture production in Lithuania in 2004-2010

Year	Total agricultural production, million LTL	Rate of change %		Ratio of credits granted for agriculture and forestry and total agricultural production
		basic	chain	
2004	4552.3	100.00	-	8.04
2005	5117.3	112.41	112.41	12.00
2006	4913.0	107.92	96.01	16.23
2007	6912.2	151.84	140.69	14.45
2008	7340.0	161.24	106.19	20.34
2009	5707.0	125.37	77.75	20.93
2010	6388.2	140.33	111.94	17.44
Average	5847.1	104.33	x	16.07

Source: authors' calculations based on the data of the Bank of Lithuania, the Department of Statistics

stated that in 2008-2009 the majority (approx. 21%) of borrowed funds was attributed for one LTL of total agricultural production.

Lithuanian financial analysts forecast stable growth of agricultural demand, thus, they promise good mid-term and long-term opportunities. It is influenced by growing world population, growing food consumption in China and India caused by growing residents' incomes and the development of biological fuel due to rising prices of electrical energy. These processes will increase the favourability of investing into Lithuanian agricultural sector. In Lithuania and Latvia, which comprise the "lion" part of Lithuanian origin food products sales, purchasing power of the residents began declining and the population started declining too. That is the reason why already today much attention should be paid to increase and modernise the effectiveness of agriculture sector (Rudzkiš, R., Rojaka, J., Genyte, I., 2010).

Conclusions

1. Agricultural subjects are supported by direct assignments, which support farmers' income and promote agricultural development. In 2010, totally LTL 1.2 billion were paid from the EU and Lithuanian budgets in form of direct assignments, which is 4.3% more than in 2009.
2. The amount of the EU support for rural development in 2007-2013 is LTL 6096 million, co-funding from the national budget of Lithuania amounts to LTL 1799 million. In total, the EU grants LTL 7896 million for agricultural sector. From the beginning of Programme implementation to 2010, totally LTL 2732 million have already been allocated (of which LTL 2283 million are the EU funds, i.e. 37.4% of all the EU funds dedicated to this Programme).
3. In autumn of 2009, new opportunities of receiving credits for Lithuanian farmers were presented – Lithuania was the first of the EU Member States to establish the new Credit Fund. During the three stages of Credit Fund activity, LTL 227 million were allocated to credit institutions for preferential

credits, which result in signing 356 contracts for total of LTL 100 million.

4. It was concluded that the demand of credits with guarantee has substantially grown in 2010 (87.6% more credits with guarantee were granted compared with 2009), banks and credit unions appreciate the perspectives of agriculture more and more favourably, and farmers see the credit institutions as their business partners.
5. The average changing rate of credits granted to Lithuanian residents in 2004-2010 was 115.34%. The average changing rate of credits granted to agriculture and forestry in 2004-2010 was 114.94%. This shows that credits granted to agriculture and forestry during the period under review were growing by 0.4% percentage points slower compared with the total credit portfolio.
6. The average changing rate of total agricultural production in 2004-2010 was 104.33%. This shows that total agricultural production during the analysed period was growing by 10.6% percentage points slower than credits granted to agriculture and forestry. In addition, it was concluded that in 2008-2009 the biggest share of borrowed funds (approx. 21%) was attributed to one litas of total agricultural production.

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Value Drivers of Multifunctional and Sustainable Agricultural Organisation: Cash Flow Discounting Approach

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Abstract. Valuation of any business organisation is important for the owners, creditors, state, and other stakeholders in order to assess it as a working economic entity for sale, exchange, mortgage, supporting, and other purposes. Under the principle of market efficiency, business organisation should be sold, exchanged, mortgaged at a fair value. The measurement of the fair value of agricultural organisation using cash flow discounting approach is problematic due to the different nature of cash flows and discount rates. The present agricultural organisation generates free cash flows not only from agricultural production and services but also through the multifunctionality of agriculture, the provision of public goods and ensuring the sustainability of economic development. The authors of the paper present the model of value drivers of multifunctional and sustainable agricultural organisation. They reason that free cash flows from agricultural production and services, and subsidies and grants for increasing farms' efficiency and for business diversification in rural areas should be discounted at a weighted average cost of capital. Benefit and costs in providing public good should be discounted at a social discount rate.

Key words: valuation, value drivers, multifunctional and sustainable agricultural organisation, cash flow, discounting.
JEL code G32

Introduction

In terms of cash flow discounting, the value of any business organisation depends on free cash flows (FCF) and discount rate. Agricultural organisations (farms and agricultural companies) have specifics for such an industry assets (biological) and specific income (grants and subsidies). Due to the high business risk, agricultural sector is supported, and the value of agricultural business organisation is highly dependent on the future financial support. Calculation of weighted average cost of capital (WACC), at which free cash flows should be discounted, is still quite problematic. Earlier pieces of research were mainly directed towards the methods used for estimation of the cost of equity capital in joint-stock companies. Farms are private organisations and agricultural companies are similar to closed joint-stock companies, so the use of traditional methods for estimation of the cost of equity capital is limited and the appropriate value drivers have to be identified.

Farms and agricultural companies create not only economic but also social value added. Recently, more attention is paid to the environment, ecology, and public goods. When evaluating the organisation, which creates both economic and social value added, a paradigm of adjustment of the market-based and social discount rates appears. These reasons lead to the research novelty and relevance.

The object of the research is value drivers of agricultural organisation. The research is based on previous research results. The most important are presented by Fernandez, 2007; Hill and Zeller, 2008; Kazlauskienė and Christauskas, 2008; McConaughy, 2009; McVittie, Moran and Thompson, 2009; Price, 2010; and Vazonis and Vazonis, 2011.

The aim of the research is to make the model of value drivers of multifunctional and sustainable agricultural organisation by using cash flow discounting approach. The aim is implied by the following tasks: 1) to analyse and summarise the value drivers of conventional agricultural organisation; 2) to analyse and summarise the value drivers of multifunctional and sustainable agricultural organisation; and 3) to make the model of value drivers of multifunctional and sustainable agricultural organisation.

The methods of the research: analysis and synthesis of scientific literature, comparison method, decomposition and modelling methods.

Research results and discussion

1. Value drivers of conventional agricultural organisation

How can one measure the fair value of agricultural organisation? To answer such a question, one has to know the right value drivers. A lot of research is done in the field of firm or company valuation but very poor in valuation of farms or agricultural companies.

Fernandez (2007) raises an issue about discounted cash flows valuation methods providing always the same value. The researcher has summarised compendium of ten methods: free cash flow, equity cash flow, capital cash flow, adjusted present value, business risk adjusted free cash flow and equity cash flow, risk-free rate-adjusted free cash flow and equity cash flow, economic profit, and economic value added. The main conclusion is that all the ten methods give the same value. He stated that the disagreements among the various theories of firm valuation arose from the calculation of the value of tax shields.

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Magni, Malagoli and Mastroleo (2006) propose a different method of firm valuation based on fuzzy logic and expert systems. They represent a conceptual transposition of discounted cash flows techniques but the novelty is based on the explicit account of quantitative and qualitative variables and their mutual integration. They focus on 29 value drivers that are combined together via "if-then" rules. The output of the system is the real number in the interval [0, 1], which represents the value creation power of the firm. Zivelova (2004) points three factors, which influence the value of a firm: operational results of a firm, structure of stock capital, and costs associated with capital acquisition.

Kazlauskienė and Christauskas (2008) point that value drivers shall be based on a systematic approach to business value. Primary (first level) value drivers are FCF and cost of capital (Fernandez, 2007; Hill and Zeller, 2008). Hill and Zeller (2008) as important factors indicate the value of cash flow growth rate and the relationship between return on capital employed (ROCE) and WACC. FCF depend on such drivers as NOPAT (the difference between earnings before interests and taxes (EBIT) and paid income tax), depreciation and amortisation of fixed assets, capital investment and investments in additional working capital. Kazlauskienė and Christauskas (2008) decompose business value drivers into five levels.

Prices of outputs are one of the main factors influencing NOPAT. When speaking about agricultural organisations (farms and companies), it depends on the characteristics of production, which result in the specific industry, for example, in animal husbandry – animal genetics and reproduction, feeding and feed production, animal housing and milking conditions (Galsanova, 2007); in crop production – fertilisers, pesticides, plant genetics and so on. Volume of production is determined by the aforementioned factors and factors of production such as soil type and quality, climatic-weather conditions, seasonality of production, crop rotation, and diseases and pests (Tozer, 2009). One factor which increases an income of agricultural organisation, is the production subsidies (Sapolaite, 2011). Farm income support and production support are implemented through the market intervention mechanisms, the payments associated with the production volume or land area, direct income support (Vazonis and Vazonis, 2011). The reserve of revenue growth and cost reduction is specialisation and concentration of production, also consolidation of farms (Galsanova, 2007; Sapolaite, 2011).

Another first-level value driver is the cost of capital. Francis, and Oswald (2000), Plenborg (2002) in order to set WACC, offer a number of assumptions, one of which is to use the target capital structure instead of debt-equity ratio in the balance sheet.

Typical family-controlled business owners do not diversify their investments, as investors in joint-stock companies. For that reason, they assume all risks, not only systematic. So, in terms of capital market theory, cost of equity capital for private business owners must be greater than investing in publicly traded companies (McConaughy, 2009). Thus, private firms have a lower value in the market than joint-stock companies. Das, Jagannathan and Sorin (2003), Bajaj, Denis, Ferris and Sarin (2001) specify lower liquidity of private firms as

the main reason of lower value but do not associate this phenomenon with the expected return and the level of diversification. Koeplin, Sarin and Shapiro (2000) founded that such indicators as sales revenue and EBIT were 20-30 percent smaller in private firms. These indicators are directly related to business value. Business-evaluators have several approaches concerning the discount rate in valuation of private firms. Each approach has its limitations and because it is not a perfect analogy, requires a number of specific assumptions.

The proposed model for estimating the cost of equity capital for private firms is based on capital market theory (Mishra and McConaughy, 1999). McConaughy (2009) suggested the specific capital market benchmark measure, Sharpe ratio, estimating cost of equity capital in the closed joint-stock company. Both, the capital asset pricing model (CAPM) and Fama and French (1992) multi-factor model, measure only the systematic risk, and are suitable for liquid markets and investors who make well-diversified investments. When estimating cost of equity capital, standard deviation, measuring total risk should be used instead of using systematic risk's beta coefficient. The main value drivers are the following factors: risk-free interest rate, return and standard deviation of return of market portfolio, and return and standard deviation of return of closed joint-stock company.

2. Value drivers of multifunctional and sustainable agricultural organisation

Multifunctional and sustainable agricultural organisation differs from conventional through ensuring the sustainable development and provision of public goods.

Sydorovych and Wossink (2008), Ueda, Takenaka, Vaneza and Monostori (2009) point out the agricultural components of sustainability: economic, internal social, external social, and environmental. Environmentally friendly behaviour is necessary to ensure a harmonious society but it is usually not profitable. Ecological aspect of sustainability is defined as the ability to maintain ecosystem processes and functions necessary to ensure biological diversity and do not impoverish it. On the contrary, any economic development is sustainable, if not destroying or impairing necessary conditions for the humanity. Sustainable value should be created through the dynamic interaction between social, natural and artificial systems (Ueda, Takenaka, Vaneza and Monostori, 2009).

Organic farming is recognised as an expression of sustainable agriculture and its potential is significant for the issues of agricultural products competitiveness, rural employment and additional income, and works together as a preventive environmental measure (Alroe and Kristensen, 2004; Kerselaers, Cock, Lauwers and Huylenbroeck, 2007). Skulskis (2010) argues that organic farming is recognised as successfully implementing the principles of sustainable development in agriculture: it preserves the existing natural resources, reducing the impact of agriculture caused by environmental pollution, and meets consumer demand for healthy, safe and quality food products. Direct investment support is a factor of organic farming (Skulskis, 2010) and at the same is a value driver of agricultural organisation.

Households with greater economic potential are not oriented to organic farming. Therefore, organic farming is supported by the government (Kerselaers, Cock, Lauwers and Huylenbroeck, 2007). Ueda, Takenaka, Vaneza and Monostori (2009) argue that producers face a much lower cost producing conventional products in comparison with producing environmentally friendly products.

Bioenergy produced by agriculture has advantages over conventional energy both in environmental and socio-economic aspects (Kniuksta and Caplikas, 2011). Bioenergy production provides environmental benefits, emitting less CO₂, sustainable energy production, and creates the economic potential of rural areas. The production of biofuels from agricultural waste reduces pollution and provides economic benefits. Wind can be one of the clean renewable energies, and wind power creates environmental value because of emission reduction (Hongze, Sen and Bao, 2011).

Aforementioned examples show one of the main functions of agricultural organisation – ensuring the sustainability. Investments directed towards sustainable agriculture are strongly supported by the government. Subsidies and investment support is a value driver of agricultural organisation. In most cases, it is rendered through PPP (Public Private Partnership) for which the discount rate applied by a government throughout the contract period (Guide to Cost-Benefit Analysis of Investment Projects, 2008).

The value of agricultural organisation is also created by cash flows from the provision of public goods. Public goods are important for the following reasons (Krieger, 2004, Banzhaf, 2010): 1) environmental (groundwater protection, wildlife protection, conservation of natural areas); 2) agrarian (providing local food, preserving farming as a way of life); 3) aesthetic (preserving rural identity, preserving scenic quality); 4) antigrowth, slowing development; and 5) recreation (providing public access).

McVittie, Moran and Thompson (2009) provide a typology of public goods: agricultural landscapes – cultural; agricultural landscapes – ecological; farmland biodiversity; climate – GHG emissions mitigation; reduced risk of flooding; reduced risk of fire; high functionality soils; water quality; water availability; high quality air; food security; animal welfare; and animal health.

The provision of public goods is important to assess the benefits received by the farm. The benefits can be obtained through the grants and through the implementation of investment projects. The benefit from the provision of public goods can be measured using two different methodologies: market valuation and non-market valuation (McVittie, Moran and Thompson, 2009). The value created from provision of public goods depends on the valuation method. The researchers point out these valuation methods: willingness to pay method (Hasund, Mitesh and Lagerkvist, 2011), hedonic methods (Irwin, 2002), method of travel cost, and benefit-sharing method (Rosenberger and Loomis, 2003). Cost of provision of public goods, as value drivers, is associated with investment in fixed assets and additional working capital.

Cost-benefit analysis is a standard methodology for evaluation of public investment projects. In assessment of projects having a significant environmental impact on

future generations, the discount rate and time horizon are the main factors influencing the socio-environmental investment project efficiency (Almansa and Martinez-Paz, 2011).

Groom, Hepburn, Koundouri and Pearce (2005) state that the correct social discount rate (SDR) should change over time ranging from 3.5% in the short-run and decreasing to 1% in the long-run horizon. Voinov and Farley (2007) state that the discounts function acquire the form of hyperbole over time. Price (2010) argues that the difference between the consumption discount rate and return on investment is that the former is recognised as the SDR. SDR leads to the expected annual real growth rate and elasticity of marginal utility of income. Long-term annual real growth rate of 1% and the marginal utility of income elasticity are –2. Taking diminishing marginal utility as the bases of discounting, the annual discount on consumption is 2%. Recently, more and more discussions lead to the conclusion that the elasticity of marginal utility of income has a crucial impact on the SDR and environmental value.

SDR depends on the European Commission and the governmental decisions, which are based on the following factors: the real growth rate in the long-run, the elasticity of marginal utility of income, the time horizon of social investment projects, and the chosen econometric model.

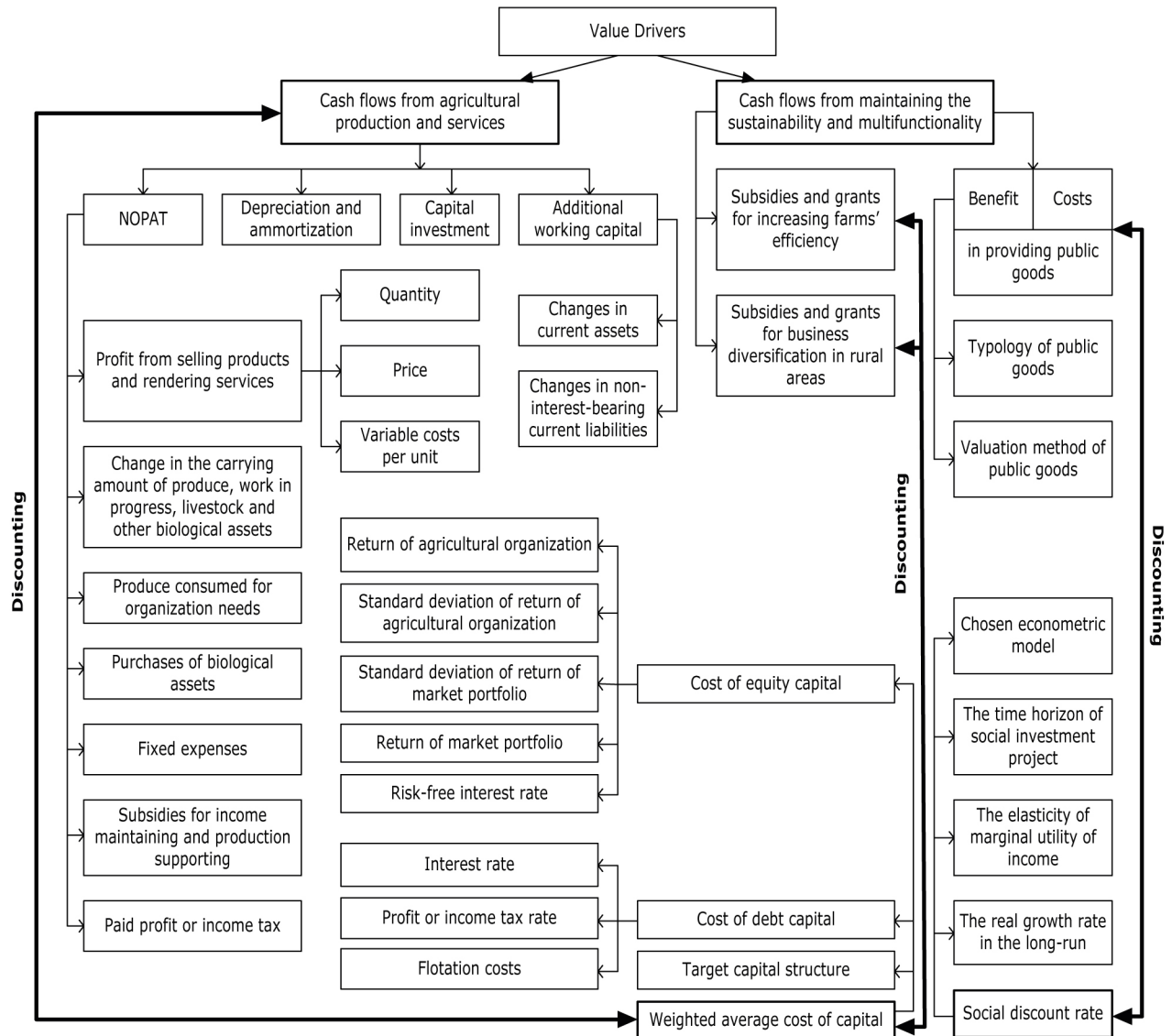
3. The model of value drivers of multifunctional and sustainable agricultural organisation

The authors of the paper have prepared the model of value drivers of multifunctional and sustainable agricultural organisation based on the previous research results analysis. The main value drivers of each organisation are FCF and discount rate. The value drivers of FCF and discount rate are decomposed into the second, third or fourth levels as was suggested by Kazlauskienė and Christauskas (2008). The decomposition is not final, the research is continued reaching to find out more levels of value drivers.

As mentioned earlier, FCF in conventional agricultural organisation depends on such drivers as NOPAT (the difference between earnings before interests and taxes (EBIT) and paid income tax), depreciation and amortisation of fixed assets, capital investment, and investments in additional working capital. Using the method of decomposition, value drivers of NOPAT are presented according to the 3 Business Accounting Standard "Income Statement". Profit from selling products and rendering services as the main value driver of NOPAT is decomposed into three value drivers: quantity, price, and variable cost per unit.

Cash flows from maintaining the sustainability and functionality are composed of subsidies and grants for increasing farms' efficiency; subsidies and grants for business diversification in rural areas; benefit and costs in providing public goods. Such composition is made according to the spectrum of means of the Common Agricultural Policy, presented by Vaznonis and Vaznonis (2011).

Cash flows from agricultural production and services, also subsidies and grants for increasing farms' efficiency



Source: authors' construction

Fig. 1. The model of value drivers of multifunctional and sustainable agricultural organisation

and for business diversification in rural areas should be discounted at WACC because of their economic nature.

According to Plenborg (2002), when setting the WACC, the target capital structure should be used instead of debt-equity ratio in the balance sheet. The other two value drivers of WACC are cost of debt and cost of equity capital. Value drivers of cost of debt capital are universally accepted. Value drivers of cost of equity capital are based on McConaughy (2009): risk-free interest rate, return and standard deviation of return of market portfolio, and return and standard deviation of return of agricultural organisation (farms as private organisations and agricultural companies as similar to closed joint-stock companies).

Cash flows from providing public goods include benefit and cost. Benefit in providing public goods depends on typology of public goods presented by McVittie, Moran

and Thompson (2009) as well as on the chosen valuation method. Such cash flows should be discounted at SDR. The main value drivers of SDR are the real growth rate in the long run, the elasticity of marginal utility of income, the time horizon of social investment projects, and the chosen econometric model.

Conclusions

1. Under the principle of market efficiency, business organisation should be sold, exchanged, mortgaged at a fair value. The measurement of the fair value of agricultural organisation using cash flow discounting approach is problematic due to the different nature of cash flows and discount rates.
2. The research was focused on the value drivers of FCF and discount rates using decomposition method. In

the proposed model of value drivers of multifunctional and sustainable agricultural organisation, FCF are grouped into two groups: FCF from agricultural production and services, and FCF from maintaining the sustainability and functionality. The former and the part of FCF from maintaining the sustainability and functionality (grants and subsidies for increasing farms' efficiency and for business diversification in rural areas) should be discounted at WACC. Only benefit and cost in providing public goods should be discounted at SDR.

3. The main value drivers of WACC are target capital structure, cost of equity capital, and cost of debt capital. The authors suggest using the modified CAPM for estimation of cost of equity capital. The modification is based on using total risk measured by standard deviation instead of systematic risk measured by beta coefficient.
4. The main value drivers of SDR are the following: the real growth rate in the long run, the elasticity of marginal utility of income, the time horizon of social investment projects, and the chosen econometric model.
5. The value drivers of FCF, WACC and SDR are decomposed into the second, third, and fourth levels. The decomposition is not final, the research is continued reaching to find out more levels of value drivers.

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Elaboration and Approbation of Methodology for Estimating the Region-Wide Economic Significance of Tourism in National Parks of the Regions of Latvia

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Abstract. The aim of the paper is to present the estimating methodology and its approbation results concerning economic significance of tourism in the regions of NPs of Latvia that is included in the author's PhD thesis "Assessment of Economic Significance of Tourism in the Regions of National Parks in Latvia". It is based on the problem – lack of previous determined diagnosis for sustainable tourism planning. The research hypothesis: economic significance of tourism in the NPs regions of Latvia is statistically significant. The methods used in the research: scientific and applied literature studies; surveys of NPs visitors and entrepreneurs; and data analysis using approaches of an economic impact (EI) estimates and single factor dispersion analysis for determination of statistical significance of results. The main conclusions: 1) several estimating approaches for tourism economic importance exist in the world and they are based on the main components: research goals, questions, territory, used types of analysis, verification of the acquired results, and understanding of results using fields; 2) an appropriate methodology has been elaborated for Latvia and it has been approbated in tourism of the NPs regions; 3) in 2010, tourism in Latvian NPs regions created more than LVL 50.12 million of economic significance, thus, the result is more than 81 times larger than the governmental allocations for implementation of tourism policy and its development in 2010; 4) the amount of tax revenues from tourism in local municipalities of NPs regions ranges from 2.1% to 7.57%; these are statistically significant indicators; 5) improvements in the terms of the elaborated methodology are not necessary, yet, they enhance the necessity for pre-conditions relating to data periodicity, accumulation, detalisation, and availability.

Key words: national park, economic significance of tourism, methodology.

JEL code: B490, B41

Introduction

In rural territories of Latvia, tourism is a means to facilitate balanced economic development where nature protected areas (PA) and all four national parks (NP) involved in tourism - Gauja, Kemeris, Slitere, and Razna NPs, which are considered as large PA, are used as a tourism resource.

National parks are wide areas characterised by excellent natural formations that are not affected by humans and are only a little changed landscapes and cultural landscapes with a variety of biotopes, cultural and historical monuments, and characteristics of cultural environment. The main objective of a NP is nature protection, preservation of cultural and historic heritage, scientific investigations, education, and recreation (Latvijas Vestnesis, 2010). Therefore, the role of tourism is inseparable from the development that is closely connected with the economic development not only in the territories of NPs but in municipalities, in general. NPs have potential benefits from tourism: 1) protection and preservation of natural and cultural heritage; 2) enhancing economics; and 3) increasing the local community's level of life quality. It requires a regular, systematic, and accepted monitoring – assessing the state, a system of control, analysis, and forecasting, in general (Eagles P.F.J. et al., 2002; Baldunciks J., 2007).

Monitoring of tourism economic development and impact is connected with researching tourism as a phenomenon. Since the 1980s, the major focus of

research in the economics of tourism has been laid on the public sector, and still the burst of "tourism economic impact" can be seen in the world studies done by academics, students, state and commercial organisations, managers and other stakeholders (Veal A.J., 2006). In the direction of academic researching, tourism is relatively recent – it has been done since the second half of the 20th century. Bernstein (1991) believes that tourism should be researched by an integrative approach. In this aspect, new, standardisable methodological solutions in the disciplines to be researched and connected with tourism should be looked for. Such solutions do not exist in the world (Echtner M.C. et al., 1997). Several methodologies in data acquisition still exist in tourism researching. Different methodological techniques, which depend on the characteristics of the territory, aims, questions, research base, and other factors are used in calculations. Yet, there are arguments on the validity and comparability of results of research done in the academic environment. Research of economic character in tourism is carried out despite lacking standards of research methodologies.

Research on the economic impact and significance of tourism in national parks in the world is done by many scientists. Special experience is demonstrated by the United States, Canada, Finland, Australia etc. In Latvia, tourism research have mainly been initiated and carried out by a non-governmental sector, for instance, Professional Rural Tourism Association of Latvia "Lauku celotajs"

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(PRTA LC) and Latvian Fund for Nature (LFN). Research and situation analysis on national parks and their nearby territories carried out by these organisations are little and mainly descriptive, thus, eliminating economic evaluation in scientific expressions. Although, the necessity for them is increasing, for instance, in order to implement the principles of the Charter of European Sustainable Tourism for planning tourism development in NPs of Latvia. In 2010, the Ministry of Regional Development and Local Governments of the Republic of Latvia worked out an updated methodology for elaborating developmental programmes on regional and local level; however, it has not defined a pre-research methodological mechanism of economic situation. Methodological Guidelines of Tourism Monitoring in Slitere NP is one of the attempts to facilitate socially economic monitoring of tourism in NPs of Latvia. The guidelines were elaborated by PRTA LC in 2009. However, they only emphasise the process of data acquisition – systematic and regular observations of the number of tourists and their dynamics (Smalinskis J. et al., 2009).

The research problem: since Latvia lacks research on the economic impact and significance of tourism in NPs regions, there is a necessity to have a methodology, which could be used in estimating the economic significance or impact. Therefore, the author has elaborated a thesis being in the state of defence "Assessing of Economic Significance of Tourism in the Regions of National Parks in Latvia", which is a novelty in Latvia.

The research is based on the hypothesis: economic significance of tourism in the NPs regions of Latvia is statistically significant.

The aim of the paper is to present the estimating methodology and its approbation results concerning economic significance of tourism in the regions of NPs of Latvia.

The tasks: 1) in brief, to explain the theoretical and practical aspects, and approaches of the tourism economic significance estimates; 2) to present the main components of the elaborated methodology, which are based on findings in theories and good examples in practice in the world; 3) to present the main results of the approbating elaborated methodology, its defects and reasons, and possible solutions; and 4) to draw the conclusions and recommendations.

The methods. The study is based on scientific and applied literature studies; surveys of NPs visitors and entrepreneurs; data analysis using approaches of an economic impact estimates; and a single factor dispersion analysis for the determination of statistical significance of results.

Research main results and discussion

1. The theoretical background for elaboration of a methodology

According to Reeves (2002), who emphasises that the terms economic *impact* and economic *significance* are not synonyms, their differences are taken into account.

Economic significance is a static term, which can be measured at single point in time, as initial circumstances are a base for measuring the economic impact later (Analitisko petijumu un stratēģiju laboratorija, 2007). This is the main argument why the author has stated economic significance of tourism in the regions of NPs. It is based on the lack of data and dynamics, which can be considered as a limitation of possibly entire assessment. The methodology elaboration process and approbation of estimating economic significance of NP tourism in Latvia is based on practical examples and scientific research worldwide.

Scientific research is the research, which is conducted within the rules and conventions of science. This means that it is based on logic and reason, and systematic examination of evidence. Ideally, within the scientific model, it should be possible for research to be replicated by the same or different researchers and for similar conclusions to emerge (Veal A.J., 2006). According to this definition, the author assumes that an elaborated and repeatedly usable concept or strategy of a scientific research can be a methodology², which includes methods³ and guidance⁴. Depending on the fact if the tourism research is meant to be theoretical or applied, longitudinal, empirical or non-empirical, descriptive or interpretative, quantitative, qualitative, or experimental, primary or secondary, induction on deduction. Veal (2006) recommends to follow such research procedure: 1) to select a topic; 2) to review literature; 3) to set a conceptual framework; 4) to decide research questions; 5) to list information needs; 6) to decide research strategy; 7) to conduct a research; and 8) to report findings. Besides, when choosing the methods for a tourism research, he recommends at first to study previous research, data availability or access, data and information resources, time, and uses /users of the research findings (Veal A.J., 2006). Weaver and Lawton (2006) supplement the process of a tourism research with defining the problem, triangulation⁵, and four actions with the data: 1) data collecting, 2) analysis, 3) presentation, and 4) interpretation (Weaver D. et al., 2006). In order to determine the economic impact of tourism in NP, Stynes (s.y.) recommends to begin with identifying the study region and key economic sectors, and research problems; stating the aim; and defining the questions: 1) how much money visitors spend when visiting the specific territory; 2) what is the travellers' expense proportion on sectors; 3) how much money spent by travellers reaches the budgets of households; 4) how many working places tourism provides in the territory; and 5) what is the amount of tax revenues generated by tourism. He suggests to continue the research with calculating the amount of tourism demand; calculating the regional economic effect; and analysis, interpretation, and presentation of research results (Stynes D.J., s.y.). Visitor sampling in economic researches of tourism is very important in order to determine spending distribution by visitor segments (Stynes D.J. et al., 2006). Almost identical approach is demonstrated by Huhtala etc.

² Methodology – totality of approaches in order to do something (Baldunciks J., 2007).

³ Method – a way, an approach, a totality of approaches (Baldunciks J., 2007).

⁴ Guidance – a totality of methods, a totality of general scientific principles (Baldunciks J., 2007).

⁵ Triangulation – the use of multiple methods, data sources, investigators or theories in a research process (Weaver D. et al., 2006).

(2007; 2010) in economic evaluations of tourism in the national parks in Finland (Huhtala M., 2007; Huhtala M. et al., 2010).

There are several economic analysis methods in NP tourism. For instance, theories suggested by Michigan State University in the United States (US) and based on Burchell and Listokin (1978), Walsh (1986), Warnell (1986), Johnson and Thomas (1992), Williams (1994), Frechtling (1994) etc. These theories help estimate extended impact: 1) economic impact analysis; 2) fiscal impact analysis; 3) financial analysis; 4) demand analysis; 5) benefit cost analysis (B/C); 6) feasibility study; 7) environmental impact assessment; and 8) tourism income multiplier assessment (Berzina I. et al., 2008). Due to the lack of dynamics of output data, many of them cannot be used in Latvia, except the economic impact analysis (EI) and tourism income multiplier assessment (Berzina I. et al., 2011).

The EI is used to outline tourism activities in the territory of financial flow, identifying changes in sales amounts, tax incomes, and employment. Basic methods are travellers' surveys on their expenses; statistic analysis of secondary (state) economics; economic base models including input – output (I/O); and multiplier analysis determining direct, stimulating or induced, and indirect impact (Stynes D.J., s.y.; Jegere S., s.y.). Basic variables for estimating economic impact of tourism are 1) visits or tourism activity (demand) – arrivals, some-days visitors, length of stay, occupancy, etc.; 2) spending (demand) – expenditure and 3) multipliers (supply) – sales, revenue, employment, taxes, and value added; and 4) leakages; (Stynes D.J., s.y.; UNWTO, 2000). Stynes concedes to use or adjust data from similar studies of a similar area/market or region/study visitor spending and multipliers in determining the amount (Stynes D.J., s.y.).

Tourism income multiplier (K) can be determined by using one of these methods: 1) ratio and 2) normal. With the help of ratio method, which is a proportion of direct income against the sum of direct and secondary income, mutual correlation of territory economic sector is stated. However, the result does not show how much income this correlation generates. Therefore, such K measurement for the purposes of tourism planning is senseless. Normal method can be used in assessing the economic impact dynamics (Horwath HTL, 1981).

Probabilistic statements, significance, verification of zero and alternative hypothesis, Chi-square test, T-test, factorial analysis, cluster analysis, correlation, regression, and expert methods are more often used in statistic analysis (Veal A.J., 2006; Weaver D. et al., 2006; Stynes D.J., s.y.).

2. Main components of the elaborated methodology

According to the theories of Veal (2006), Weaver (2006), Stynes (s.y.), Huhtala (2007; 2010), Wells (1997), UNWTO (2000), and others, the author presents the main selected components of created methodology for assessing region-wide economic significance of tourism in Latvian NPs:

- the topic: region-wide economic significance of NP regions tourism in Latvia;
- the problem to be solved: inexistence of the diagnosis of Latvian NP regions tourism economic

situation necessary for planning sustainable tourism development;

- determined NP regions: administratively territorial borders of local municipalities including NPs. Determination of specific regions is motivated by the necessity for comparability indicators. The only accessible indicator is the amount of inhabitants' tax revenues in the basic budget of local municipalities forming NPs;
- the main research issues: 1) how much money visitors spend when visiting the regions of NPs; 2) what is the NP visitors' expense proportion on sectors; 3) how many working places tourism provides in the territory; 4) what is the amount of income generated by tourism from tax revenues in local municipalities forming the regions of NPs; 5) how statistically significant is the proportion of income generated by tourism from tax revenues in local municipalities;
- the aim for use of the methodology: estimating an economic significance of tourism in the NP regions of Latvia;
- the type of the research in case the elaborated methodology is used: applied, quantitative;
- the time: the official tourism season in Latvia is from 15 May to 15 October, thus, one can obtain a larger amount of data;
- the performers of estimates: state institutions, local municipalities, NGOs, academics, students, commercial enterprises etc.;
- the users of the estimating results: Ministry of Environmental Protection and Regional Development of the Republic of Latvia (MEPRD RL), Ministry of Economics of the Republic of Latvia (ME RL), Latvian Tourism Development Agency (LTDA), Latvian Nature Conservancy Agency (NCA), NP administrations, local municipalities, other state and regional institutions, education institutions providing education in tourism, students, non-governmental organisations (NGOs), commercial enterprises etc. They are stakeholders who are interested in a tourism planning, mostly it is their operational function;
- data sources: primary and secondary: surveys of NP visitors and tourism entrepreneurs (involved in tourism), data and information collected by NPs, state official statistics (LR CSD), Europe scale tourism statistics (for instance, Eurostat), scientific and practical research on tourism in NPs in Europe and the world, literature and informative reports etc.;
- ascertainment of the amount of tax revenues in the basic budget of NPs regions municipalities for at least one year period, thus, one can obtain an indicator for comparability of results;
- the design of NP visitors' survey: the questionnaire should be elaborated as well as methodology on carrying out the survey. Compulsory questions included in the questionnaire should foresee NP visitors' segmentation by asking about the place the visitor comes from and residence length in the region and ask about the NP visitors' expenses for accommodation, public catering, retail sales, tourism activities (programmes) used, and expenses for transport. The survey methodology should provide the procedure how the survey is carried out by

Table 1

Calculation results of tourism economic significance in NPs of Latvia in 2010 per NP (LVL)

No.	Type of economic impact	Gauja NP	Kemeri NP	Razna NP	Slitere NP
1.	DEI	10195384.00	9666569.30	3345524.94	123962.17
2.	CEI	438741.76	445261.96	120535.87	116587.37
3.	IEI	10239258.18	9711095.50	3357578.53	1251020.90
4.	TEI	20873383.93	19822926.76	6823639.34	2606970.44

Source: author's calculations based on the data from NP visitors' surveys

Table 2

Calculation results of statistic importance of tourism economic significance in Latvia created by NP visitors in 2010 per NPs

No.		Gauja NP	Kemeri NP	Razna NP	Slitere NP
1.	Probability (%)	95	94	95	...
2.	Value of Fisher test >=< Fisher's critical value	F=5.042> Fcrit=4.667	F=5.37> Fcrit=5.02	F=14.4> Fcrit=5.987	...
3.	P-value >=< significance level value (1-a)	0.042<a =0.05	0.053<a =0.06	0.004<a =0.05	...
4.	H ₀ rejected / not rejected	rejected	rejected	rejected	...

Source: author's calculations based on Arhipova I. et al., 2006

answering the basic questions: who carries it, where it is carried out, when it is carried out, how it is carried out. There is a need to provide explanations for the questions and the order of recording the answers;

- the design of NP related entrepreneurs' survey: the following main questions should be included in the questionnaire: how many working places are provided and how large is an average salary for an employee per month. The acquired data allow estimating the amount of tax revenues and employment in the NPs regions;
- data analysis: should be summarised according to the NP visitors' segment; average expenses per day per person according to the segment and expense positions in spheres should be calculated; and total expenses in NP per year in spheres should be calculated by using the total number of visitors per year which is multiplied by the average expenses per day per person (Graefe A.R. et al., 2001). Estimates of the economic significance by calculations of direct economic impact (DEI), caused economic impact (CEI), indirect economic impact (IEI), and total economic impact (TEI) shall be used in the EI analysis technique. Tourism income multiplier (K) effect should also be calculated in economic impact measurements. The amount of NP visitors' expenses statistic significance should be stated by using a single factor dispersion analysis with heterogeneous statistic complex including proving or rejection of zero and alternative hypotheses. The lack of number and dynamics of comparability indicators determines this choice.

4. Main results of approbating the elaborated methodology

NP regions in Latvia are formed by territories of 20 local municipalities and 1 state meaning city where

331 enterprises are directly involved and 158 – indirectly. These enterprises employ 2198 persons directly and 515 – indirectly. Estimating of tourism economic significance in NPs in Latvia is based on data from the year 2010 –surveys of 1443 NP visitors and 489 entrepreneurs were carried out during the tourism season. In the result of surveys, the economic significance of each NP was calculated and expressed in lats (LVL) (Table 1).

Totally, economic significance of more than LVL 50.12 million was created in the NP regions in 2010. It points to more than 81 times larger indicator than the governmental allocations for the implementation of tourism policy and development of Latvia in 2010. Each lat spent by NP visitor created resonance on LVL 11.74 on average for tourism and related spheres in NP regions. The major proportion of NP visitors' expenses (61.8%) was in retail sales, 24.6% - accommodation and only 1.2% - for tourism activities. It can be explained by the fact that provision of the national accessibility principle tourism offer by NP administrations is free of charge in the NP territories. The amount of revenue tax in basic budgets of local municipalities of NP regions: Gauja NP region in total is 6.03%; Kemeri NP region – 5.14%, Razna NP region – 7.57%, and Slitere NP region – 2.1%. In order to answer to the question on the significance of this proportion and to verify the research hypothesis, the author calculated the statistic importance of NP tourism economic significance. The author used a single factor dispersion analysis with heterogeneous statistic complex including proving or rejection of zero and alternative hypotheses (Table 2).

Economic statistic significance of Gauja and Razna NP regions is 95%, while Kemeri NP – 94%. It is not possible to provide such calculations with data from one year for Slitere NP region, since it is formed by only one municipality. In this case, there is homogeneous

not heterogeneous statistic complex with only one variable in each gradation class. The method can be used only if there were data on two years or if the municipality of Dundaga had divided income amount from tax revenues in basic budget per Kolka area and Dundaga area.

By stating NP tourism economic significance statistic importance, municipalities can ascertain that their income in basic budget from tourism through revenue tax can or cannot be a reason, for example, for investing in developing tourism environment in the future. In order to state statistic significance of NP visitors' expenses against NP administration budgets, initially it would be necessary for NCA to calculate the total amount of financial means invested directly in tourism per year. Currently, it has not been separated in common expenses.

Conclusions, proposals, recommendations

1. Several estimating approaches for tourism economic importance exist in the world. They are mainly based on such components as research goals, questions, used types of analysis, verification of the acquired results etc.
2. The most appropriate method for Latvia is an economic impact (EI) estimating approach. It determines the number of circumstances: lack of the dynamics of output data; monitoring of tourism economic processes in the regions of Latvian NPs has never been done before etc.
3. Basing on the EI estimating approach, a new methodology has been elaborated and approbated for estimating economic significance of tourism. In 2010, it created more than LVL 50.12 million of economic significance of tourism in NP regions of Latvia. It points to more than 81 times larger indicator than the governmental allocations for the implementation of tourism policy and development in 2010. Results provide knowledge for related ministries, NCA, municipalities of NPs regions, and other stakeholders on the researched territories.
4. The amount of tax revenues from tourism in a basic budget of NPs regions' municipalities ranges from 2.1% to 7.57%. It is a statistically significant indicator verified by using a single factor dispersion analysis.
5. Improvements of the elaborated methodology in its terms are not necessary, while it enhances the necessity for pre-conditions relating to data periodicity, accumulation, detalisation, and availability.
6. The methodology as a scientific model for estimating tourism economic significance can be replicated for similar applied research in other PA of Latvia.
7. The elaborated methodology can also be used for measuring tourism economic impact after some time for estimating the changes (%) taking the year 2010 as a reference point.

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Standard vs. Behavioural Finance: The Case of Capital Structure in Latvia

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Abstract. The financial manager makes decisions on many aspects of finance, such as investments, dividends etc. The financial manager can make unconscious mistakes as well as purposefully adopt a decision in his or her own interest. The aim of the paper is to analyse and assess the impact of behavioural aspects on the capital structure by evaluating the debt ratio of companies listed on the Stock Exchange NASDAQ OMX Riga.

The characteristics of market timing theory were used in the paper. Issuing new equity in favourable times reflects the market timing approach; this approach can be included in behavioural finance (irrational investor sentiment affects financing decisions). Accordingly, another capital market – the loan market – is used in this paper. Five companies were selected for the analysis – all of them are joint stock companies (JSC) publicly traded on the Baltic main list in the Riga Stock Exchange.

The linear regression model for JSC Olainfarm explains only 15% of changes in the debt ratio, while the polynomial model in the case of JSC Grindeks explains 43%. If the share price increases, the debt ratio decreases, and vice versa. The JSC Grindeks' debt ratio has a stronger correlation with the share price than the JSC Olainfarm's. The market timing theory, which states that the company will raise capital if the particular capital market looks good, is not fully applicable to these two enterprises.

Key words: behavioural finance, capital structure, Homo Economicus, the debt ratio.

JEL code: G02, G32

Introduction

"People in standard finance are rational. People in behavioural finance are normal" (Meir Statman). This statement gives an idea on the difference between the standard finance and the behavioural finance.

The financial manager makes decisions on many aspects of finance, such as investments, dividends etc. Therefore, the financial manager also decides on the formation of and changes in the capital structure. Optimal equity-debt ratio can maximise the enterprise value and minimise its cost of capital. Although, the theory of standard finance states that the manager is rational and has all the necessary information, such situation is very unlikely in practice. The financial manager may make unconscious mistakes as well as purposefully adopt a decision in his or her own interest. The market timing theory states that the firms tend to issue equity instead of debt when the market value of equity is high and repurchase equity when the market value is low. The market timing theory pays more attention to the fact that the financial manager is not so much Homo Economicus but that he can base his capital structure decisions on other than rational information. It should be taken into consideration that the very source of financial decision-making is the human factor.

The research **hypothesis** – capital structure determination is based on other than rational decisions. The **aim** of the paper is to analyse and assess the impact of behavioural aspects on the capital structure by evaluating the debt ratio of companies listed on the Stock Exchange NASDAQ OMX Riga. The aim implies the following **tasks**: 1) to analyse the theoretical aspects of

behavioural finance; 2) to overview the results of previous research made in this field; 3) to analyse and compare the capital structure of 5 enterprises (listed on the Stock Exchange NASDAQ OMX Riga); and 4) to evaluate the impact of behavioural aspects on the capital structure of 2 enterprises by using the market timing theory.

The **methods** of the research: analysis and synthesis of scientific literature, monographic method, statistical analysis (correlation, regression analysis), and the graphical method. The research is based on the published papers on behavioural finance, information provided by the Stock Exchange NASDAQ OMX Riga, the Central Statistical Bureau and the Financial and Capital Market Commission. The research covers the period from 2002 to 2011 (Q3).

Research results and discussion

1. Behavioural finance – history and theoretical aspects

Behavioural finance as a new field began to emerge during the 1990s; however, the foundations can be traced back over 150 years. MacKay's *Delusions and The Madness of Crowds* (1841) presents a chronological timeline of the various panics and schemes throughout history. Le Bon's work *The Crowd: a Study of the Popular Mind* (1896) discusses the role of "crowds" and group behaviour as they apply to the fields of behavioural finance, social psychology, sociology, and history. *Psychology of the Stock Market* by Selden (1912) applies the field of psychology directly to the stock market (Ricciardi V., Simon H. K., 2000). *Irrational Exuberance* by Robert Shiller was published only days before the 1990s

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market peaked and the professor warned investors that stock prices, by various historical measures, had climbed too high. *Can the Market Add and Subtract? Mispricing in Tech Stock Carve-Outs* by Richard Thaler (with Owen Lamont) was also done on the general topic of irrational investor behaviour set amid the tech bubble. *Beyond Greed and Fear: Understanding Behavioural Finance and the Psychology of Investing* by Hersh Shefrin also forecasts the demise of the asset bubble (Pompian M. M., 2006). The authors of the paper conclude that there are no major publications regarding behavioural finance and capital structure; most publications and research is done on stock markets and investing.

The favoured approach to the topic of behavioural finance is to split it into two subtopics (Pompian M. M., 2006):

- Behavioural Finance Micro (BFMI) examines behaviours or biases of individual investors that distinguish them from the rational actors envisioned in classical economic theory;
- Behavioural Finance Macro (BFMA) detects and describes anomalies in the efficient market hypothesis that behavioural models may explain.

V. Ricciardi and H. K. Simon (2000) state that the behavioural finance attempts to explain and increase understanding of the reasoning patterns of investors, including the emotional processes involved and the degree to which they influence the decision-making process. Essentially, behavioural finance attempts to explain the what, why, and how of finance and investing from a human perspective. M. Sen and E. Oruc (2009) define behavioural finance approach as an approach, which also considers the influence of psychological factors in financial decisions.

The two basic concepts in standard finance that behavioural finance disputes are the rational markets and the rational economic man (Pompian M. M., 2006). In the following paragraph, the authors will discuss the rational economic man (*Homo Economicus*) in more detail.

As H. A. Simon (1955) established, the traditional economic theory postulates an "economic man", who, in the course of being "economic", is also "rational". This man is assumed to have knowledge on the relevant aspects of his environment, which, if not absolutely complete, is at least impressively clear and voluminous. M. M. Pompian (2006) identifies two primary reasons why economists like to use the concept of a rational economic man: 1) *Homo Economicus* makes economic analysis relatively simple. Naturally, one might question how useful such a simple model can be; 2) *Homo Economicus* allows economists to quantify their findings, making their work more elegant and easier to digest. If humans are perfectly rational, possessing perfect information and perfect self-interest, then perhaps their behaviour can be quantified.

Most criticisms of *Homo Economicus* proceed by challenging the bases for these three underlying assumptions – perfect rationality, perfect self-interest, and perfect information (Pompian M. M., 2006):

- Perfect rationality. When humans are rational, they have the ability to reason and to make beneficial judgments. However, rationality is not the sole driver of human behaviour;
- Perfect self-interest. People are not perfectly self-interested. Perfect self-interest would preclude

people from performing such unselfish deeds as volunteering, helping the needy, or serving in the military;

- Perfect information. It is impossible for every person to enjoy perfect knowledge of every subject. In the world of investing, there is nearly an infinite amount to know and learn; and even the most successful investors do not master all disciplines.

Therefore, it is possible to state that the standard finance uses the concept of *Homo Economicus* to simplify the analysis and the findings; however, such models are not very useful. On the contrary, behavioural finance pays attention not to how investors and managers should behave but how they actually behave and make decisions. As S. Schneider (2010) points out, in an environment like economics and finance, the influence of psychological factors and sentiment is frequently underestimated precisely because it is perceived as being so highly rational.

2. Recent publications on behavioural capital structure

V. Dimitriou and D. Nikolaos (2009) investigated whether capital structure determination was based on other than rational decisions. The starting point was the analysis of the current capital structure of the listed firms in the Athens Exchange (ATHEX). The sample consisted of 89 listed corporations on 31 August 2002 and the data derived by the answers to a detailed questionnaire. The questionnaire included a specific question, which asked managers if they believed that stock price in the stock exchange reflected the real market value of their firms. Most of the respondents (61.73%) believed that the market valued their common stock according to the real value less than half of the time during the year. Only a few firms (8.64%) denoted that the stock price reflected the real value at a percentage of over 80% of the time during the year. These results are rather expected. The fluctuations of the ATHEX during 1997-2002 do not resemble the fluctuations of an efficient market. There was a vast increase in the General Index of the ATHEX during 1997-1999, which was followed by a steady, gradual fall during 1999-2002.

One of the most comprehensive studies was done by J. Graham (2002). The survey research method was used in the study; totally 392 firms completed the survey (9% response rate). The findings were rather surprising. For example, "informal" criteria such as financial flexibility and credit ratings were the most important factors in setting the debt policy, and that avoiding EPS dilution was the main reason for companies' reluctance to issue equity. Also, the study found that only 19% firms did not have a target debt ratio or a target range of the ratio; 37% had "flexible" targets; and 44% had "strict" or "somewhat strict" targets or ranges.

H. Cronqvist, A. K. Makhija and S. E. Yonker (2012) attempt to explain corporate capital structures based on what CEOs have revealed about themselves and their debt tolerance through past personal leverage choices. The authors apply behavioural consistency theory to corporate finance by studying CEOs' personal leverage (as in their choice of mortgage for their primary residences) and the corporate leverage of the firms they manage. The study found that CEOs' personal debt preferences carry over to the corporate domain so that CEOs who do not seem

to like debt personally manage firms with significantly less corporate leverage, all else equal. Particularly when corporate governance is weak, CEOs appear to imprint more significantly their personal debt preferences on the corporate capital structure.

However, M. Sen and E. Oruc (2009) used panel data analysis method, and the results show that firms do not follow the sector or the leader in decisions of capital structure. The finding of the analysis for all firms at hand, that the leverage levels of the sector and leader for the period immediately before the current one are followed, has a relatively weak level of sensitivity, and does not allow judging that the sector or the leader is followed. This means that sector averages or leader firms' level of leverage do not have a meaningful effect on capital structure decisions of the firms listed on the ISE (Istanbul Stock Exchange).

Recently, more research has been done and more papers have been published on behavioural finance and capital structure. Researchers are using different methods to identify behavioural traits in capital structure development – questionnaires and/or econometric methods. The methods used depend on the data available and they are also subject to the research aim.

3. The market timing financing behaviour in Latvian companies

More attention should be paid to the development of the capital structure, and how it can be affected by behavioural traits of the financial manager (who makes decisions on capital structure). However, it is not easy

to identify the decisions of financial manager that are not rational if the research is done by an external user of the company annual report. Therefore, as discussed previously, common practice is to conduct questionnaires. Still, since the topic of behavioural finance and capital structure is new, not much research has been done yet. Therefore, the characteristics of market timing theory were used in this paper. As D. Vasiliou and N. Daskalakis (2009) pointed out, issuing new equity in favourable times reflects the market timing approach; this approach can be included in behavioural finance (irrational investor sentiment affects financing decisions). Accordingly, another capital market – the loan market – is used in this paper.

For this study, five companies were selected – all of them are joint stock companies (JSC) publicly traded on the Baltic main list in the Riga Stock Exchange. These companies were selected because their shares are publicly traded; therefore, annual reports are in a good quality and available online as well. In addition, these companies can be considered as leaders in Latvian market. The study uses quarterly data from corporate annual reports beginning from the year 2002 to the year 2011 (Q3). The companies included in this study have a diverse range of operations – JSC Grindeks (first traded in 1998) and JSC Olainfarm (1997) are pharmaceutical manufacturing companies, JSC Ventpils Nafta (1998) is diversified holding company, JSC SAF Tehnika (2004) is producing telecommunications equipment, while JSC Latvijas Kugnieciba (2002) is a shipping company.

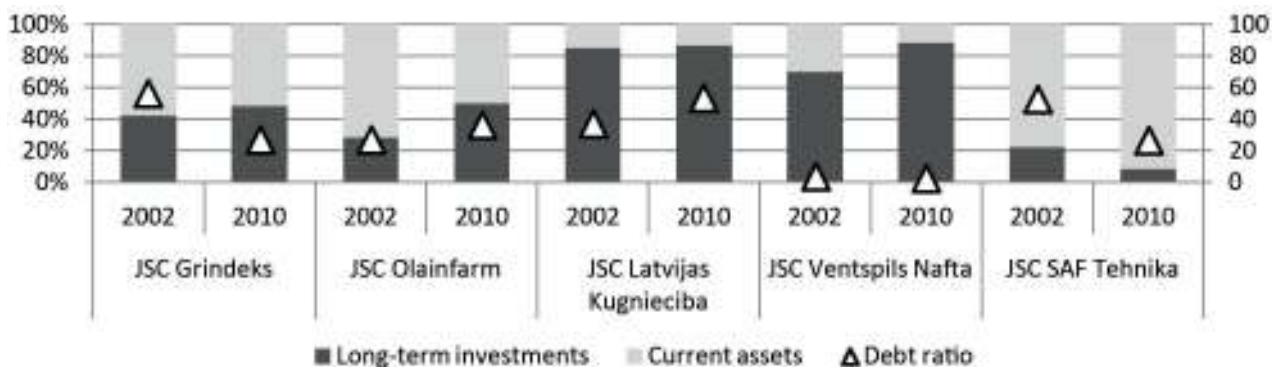
The data of Table 1 show the correlation between the share prices [data used from 26 May 2004 (first

Table 1

Correlation between the share prices of the companies in the study

No.		JSC Ventpils Nafta	JSC SAF	JSC Olainfarm	JSC Latvijas Kugnieciba	JSC Grindeks
1.	JSC Ventpils Nafta	1				
2.	JSC SAF	0.1117	1			
3.	JSC Olainfarm	0.6510	-0.1744	1		
4.	JSC Latvijas Kugnieciba	0.8561	-0.0805	0.4777	1	
5.	JSC Grindeks	0.7112	-0.2697	0.8209	0.5335	1

Source: authors' calculation based on the data by NASDAQ OMX Riga from 26 May 2004 to 16 December 2011



Source: authors' construction based on the data from annual reports from 2002 to 2010

Fig. 1. The structure of assets and the debt ratio of the companies in the study, in 2002 and in 2010

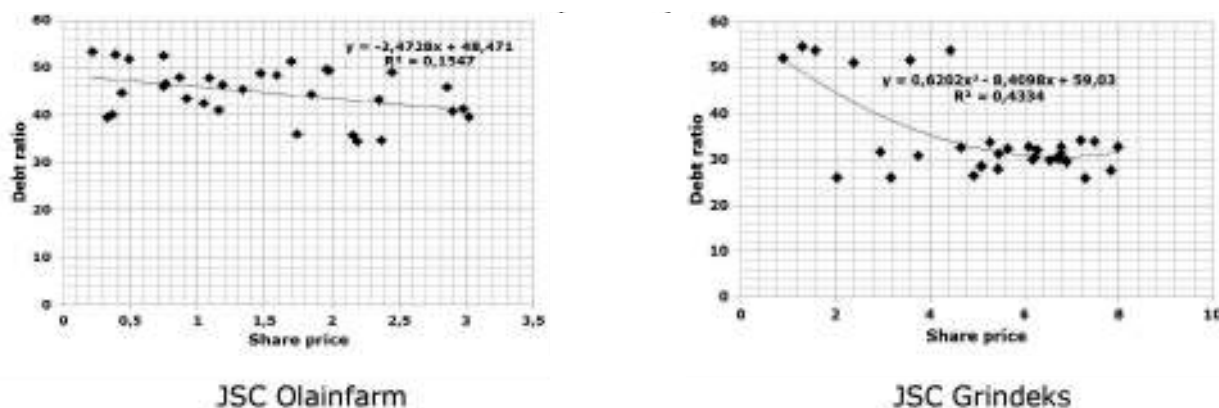
date when all five companies were traded publicly) to 16 December 2011]. The primary objective of correlation analysis is to measure the strength of linear association between two variables. Most correlations are positive (except for JSC SAF). JSC Ventspils Nafta/JSC Latvijas Kugnieciba and JSC Olainfarm/JSC Grindeks have a strong positive correlation (a correlation of 0.8561 and 0.8209), which is reasonable since companies operate in the same/similar industry. JSC SAF stands out since all correlations are negative and weak. In general, this topic – the correlation between the GDP growth and stock returns – is rather contradictory. Some authors support the idea that there is a strong link between the GDP growth and security prices (e.g. Duca G., 2007), however, others conclude that the average cross-country correlation between long-run GDP growth and long-run stock returns are effectively zero (e.g. Davis et al., 2010).

Since the companies have a diverse range of operations, it is understandable that the capital structure of the companies will be diverse, as well. Figure 1 shows the structure of assets (long-term investment and current assets) as well as the proportion of debt in 2002 and in 2010. There is a demonstrable difference in the structure of assets between manufacturing enterprises (for example, JSC Grindeks) and service enterprises (for example, JSC Latvijas Kugnieciba). Manufacturing enterprises have a larger proportion of current assets, while the opposite is true for the service enterprises.

The average proportion of debt has declined from 35.5% (2002) to 29.4% (2010).

The correlation between the debt ratio and the share price for two companies – JSC Olainfarm and JSC Grindeks – was calculated for further analysis (Figure 2). The comparison of these two particular companies was selected because they both operate in the same industry (therefore, better results of the analysis can be achieved). Data from Q4 of 2003 to Q3 of 2011 were used (32 periods). For JSC Olainfarm, the linear regression model was applied ($R^2=0.1547$), however, for JSC Grindeks, the determination coefficient was the highest using the polynomial regression model (determination coefficient for this model was $R^2=0.4334$, while for the linear model R^2 was 0.3688). Therefore, the model in the case of JSC Olainfarm explains only 15% of changes in the debt ratio, while the polynomial model in the case of JSC Grindeks explains 43%. The correlation between share price and debt ratio of JSC Olainfarm is -0.39 (weak). The correlation between JSC Grindeks' share price and debt ratio is -0.61 (medium). In general, one can conclude that if the share price increases, the debt ratio decreases, and vice versa. In addition, one can infer that JSC Grindeks' debt ratio has a stronger correlation with the share price than JSC Olainfarm's.

Both companies had almost the same structure of assets in 2010, while JSC Olainfarm's debt ratio was higher than JSC Grindeks' – 36.6% and 27.4%, respectively. If one compares some financial



Source: authors' construction based on the data from the annual reports and NASDAQ OMX Riga

Fig. 2. Correlation between the debt ratio and share price of JSC Olainfarm and JSC Grindeks, Q4 of 2003– Q3 of 2011

Table 2

Financial ratios of JSC Olainfarm and JSC Grindeks, in 2008 and 2009

No.	Company	Year	Liquidity ratio	ROS*	ROA*	ROE*	RCA*	RFA*
1.	JSC Olainfarm	2008	1.36	-7.2	-4.8	-12.2	-11.3	-7.7
2.		2009	2.33	10.5	7.6	19.2	17.5	13.9
3.	JSC Grindeks	2008	3.67	14.5	15.3	20.9	32.7	25.1
4.		2009	2.24	6.7	5.2	7.2	10.4	9.0

*ROS – return on sales, ROA – return on assets, ROE – return on equity, RCA – return on current assets, RFA – return on fixed assets

Source: authors' calculation based on the data from the annual reports

ratios (Table 2) of both companies, using data from 2008 and 2009, one can conclude that, in 2008, JSC Grindeks had better financial ratios (since JSC Olainfarm suffered losses in 2008, almost all ratios are negative), however, JSC Olainfarm had a slightly better financial situation in 2009.

In order to define the factors influencing the debt ratio, the multiple linear regression models were applied for both enterprises. The multiple linear regression model is used to study the relationship between a dependent variable and one or more independent variables. The underlying generalised model was as follows:

$$y_i = \beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_nx_n + e_i, i = 1, \dots, n,$$

where:

- y_i – dependent variable (the debt ratio);
- β – parameters;
- x – independent variables.

Table 3 presents the summary of the models for both enterprises. Since the external user of the financial reports does not know the internal factors, based on which the financial manager makes decisions on capital structure, it was decided to include such variables as Gross Domestic Product (GDP), amount of disbursed loans, interest rate (weighted average interest rate applied for disbursed loans in euro currency), share price (average of all five companies) and share price (of particular company). The

analysis was done in three steps: 1) all five variables were applied; 2) only variables whose coefficients were valid in step 1 (p-value less than 0.05, t-statistics more than 2, significance level 95%) were applied; 3) the time period was divided in two periods: Q4 of 2003 – Q3 of 2007 and Q4 of 2007– Q3 of 2011 (16+16) in order to achieve better and more applicable results (data divided in accordance with the business cycle).

The debt ratio was analysed according to this approach. Therefore, the variables, which describe loans (the amount of disbursed loans and the interest rate) were used, however, these variables did not have valid coefficients in the first step. The variable "amount of disbursed loans" had a valid coefficient only when applied to JSC Olainfarm from Q4 of 2003 to Q3 of 2007. In general, one can conclude that, for JSC Olainfarm, changes in the GDP and in its share price have an impact on the debt ratio, however, for JSC Grindeks, only its share price has a valid coefficient. Therefore, the market timing theory, which states that the company will raise capital if the particular capital market looks good (loan market is "hot"), is not fully applicable to these two enterprises.

Conclusions

1. It is possible to state that the standard finance uses the concept of Homo Economicus to simplify the analysis and the findings; however, such models are not very useful. On the contrary, behavioural finance pays attention not to how investors and managers

Table 3

The summary of applied models for JSC Olainfarm and JSC Grindeks

No.	Model	Description	
JSC Olainfarm			
1.	Variables: GDP, amount of disbursed loans, interest rate, share price (average) and share price (particular company).	Multiple R = 0.69 R squared = 0.48 Valid coefficients – GDP and share price (particular company)	
2.	Variables: GDP, share price (particular company)	Multiple R = 0.64 R squared = 0.40 Both coefficients are valid	
3.	The period (32) divided in two: Q4 of 2003 – Q3 of 2007 (16) and Q4 of 2007– Q3 of 2011 (16)	1 st period: Multiple R = 0.83 R squared = 0.68 Valid coefficients: GDP and loans	2 nd period: Multiple R = 0.96 R squared = 0.92 Valid coefficients: GDP and share price (average)
JSC Grindeks			
4.	Variables: GDP, amount of disbursed loans, interest rate, share price (average) and share price (particular company).	Multiple R = 0.85 R squared = 0.73 Only share price (particular company) is a valid coefficient	
5.	The period (32) divided in two: Q4 of 2003 – Q3 of 2007 (16) and Q4 of 2007– Q3 of 2011 (16)	Period 1: Multiple R = 0.93 R squared = 0.86 Only share price (particular company) has a valid coefficient.	Period 2: Multiple R = 0.64 R squared = 0.41 No coefficients are valid.

Significant at 0.05 level

Source: authors' calculation based on the data from the annual reports, NASDAQ OMX Riga, Financial and Capital Market Commission, the Central Statistical Bureau

- should behave but how they actually behave and make decisions.
2. Recently, more research has been done and more papers have been published on behavioural finance and capital structure. Researchers are using different methods to identify behavioural traits in capital structure development – questionnaires and/or econometric methods. The methods used depend on the data available and they are also subject to the research aim.
 3. On the basis of done analysis (JSC Grindeks and JSC Olainfarm) the following conclusions are made:
 - 3.1. For JSC Olainfarm, the linear regression model was applied ($R^2=0.1547$), however, for JSC Grindeks, the determination coefficient was the highest using the polynomial regression model (determination coefficient for this model was $R^2=0.4334$, while for the linear model R^2 was 0.3688). Therefore, the model in the case of JSC Olainfarm explains only 15% of changes in the debt ratio, while the polynomial model in the case of JSC Grindeks explains 43%.
 - 3.2. The correlation between share price and debt ratio of JSC Olainfarm is -0.39 (weak). The correlation between JSC Grindeks' share price and debt ratio is -0.61 (medium). In general, one can conclude that if the share price increases, the debt ratio decreases, and vice versa. In addition, one can infer that JSC Grindeks' debt ratio has a stronger correlation with the share price than JSC Olainfarm's.
 - 3.3. The variable "amount of disbursed loans" had a valid coefficient only when applied to JSC Olainfarm from Q4 of 2003 to Q3 of 2007. In general, one can conclude that, for JSC Olainfarm, changes in GDP and in its share price have an impact on the debt ratio, however, for JSC Grindeks, only its share price has a valid coefficient. Therefore, the market timing theory, which states that the company will raise capital if the particular capital market looks good (loan market is "hot"), is not fully applicable to these two enterprises.
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Predicting Bankruptcy of Selected Companies from The Polish Meat Sector¹

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Abstract. The primary objective of the paper was to assess exposure of selected meat sector enterprises to bankruptcy risk. The efficiency of seven models developed by E. Maczynska and M. Zawadzki at the IES PAS was also examined to predict bankruptcy of the meat sector companies.

Low production concentration is typical for the Polish meat sector. Dispersion of the meat industry is mainly attributable to low concentration of hog and bovine livestock supply as well as the increasing number of entities operating in the meat industry, especially in slaughter business. Adjustments to the EU standards led to substantial investment outlays. These factors make enterprises more exposed to the risk of bankruptcy. Therefore, managers should monitor the company situation in advance to detect early signs of bankruptcy risk. The financial analysis of the examined enterprises revealed that mainly loss of liquidity and unprofitability were the contributing factors to occurrence of the bankruptcy risk.

Six out of seven models showed that Zaklady Miesne Herman has been at risk of bankruptcy since 2008; whereas, PKM Duda S.A. faced bankruptcy in 2009. Based on the calculated models, only Mispol S.A. was not exposed to bankruptcy in the analysed period. The experience of Polski Koncern Miesny Duda S.A. proves that even major financial difficulties occurring in the years 2008-2009 do not translate into bankruptcy. PKM Duda S.A. was given a second chance by implementing a recovery plan as the first public company and signing a rehabilitation agreement with its creditors.

Key words: meat sector, bankruptcy prediction, Polish selected models of bankruptcy prediction.

JEL code: G33

Introduction

Functioning of any economic entity should be monitored to detect symptoms indicating business continuity risk. Risk involved in operations of enterprises during the deepening economic crisis enhances the need for tools and methods used to predict bankruptcy, which allow assessing the probability of a company going bankrupt. Managers of companies may use the model results to make relevant business decisions in advance.

Study aim, method and tasks

The paper aims at assessing exposure of selected meat sector enterprises to bankruptcy risk with the use of discriminant models (whose efficiency in the assessment of meat sector enterprises has also been characterised). The study was divided into several stages. First, the following study tasks were defined:

- 1) to describe the economic situation in the meat sector;
- 2) to identify and evaluate the factors that drive the Polish meat sector enterprises towards bankruptcy;
- 3) to assess the bankruptcy risk of selected Polish meat companies using seven models created and developed at the Institute of Economic Sciences of the Polish Academy of Sciences by E. Maczynska and M. Zawadzki (Maczynska E., Zawadzki M., 2006) (Table 1).

The next step was the analysis of financial data of 212 enterprises from the meat sector, derived from their

financial statements aggregated in the EMIS database (i.e. Emerging Markets Information Service a Product of ISI Emerging Markets) available at www.securities.com (accessed on 12 December 2011). Factors of financial threat and bankruptcy risk, generally confirmed by the previous studies, include lack of profit, high debt level, and financial liquidity difficulties (Lennox, 1999/ quoting Gajdka J., 2002). Therefore, a financial result generated by companies in the years 2008-2010 was the next selection criterion. Out of 212 enterprises, 22 companies that recorded losses in the analysed period were selected for further studies. The selection based on the organisational and legal form as well as the value of assets narrowed the analysis to the following enterprises: Polski Koncern Miesny Duda S.A., Zaklady Miesne Herman S.A., and Mispol S.A. The study covers the period of 2004-2010.

Discriminant function (function Z) calculated in specific models is the sum of products of variables "x" (i.e. coefficients that characterise financial standing of enterprises) multiplied by coefficient weights "w" determined statistically in the model.

The value of the discriminant function in each model is determined as follows:

$$Z = w_1 * x_1 + w_2 * x_2 + \dots \dots \dots w_n * x_n + w_0$$

The higher is the value of the discriminant function, the lower is the bankruptcy risk, and vice versa. A negative value of the function in the case of companies,

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Table 1

Coefficients (variables) of estimated models and coefficient weights

Coefficients (variables) ("x")	Model A	Model B	Model C	Model D	Model E	Model F	Model G
	coefficient weights ("w")						
rP (2)	5.577	5.837	5.896	6.029			
WO/A	1.427	2.231	2.831	6.546	9.004	9.478	9.498
WN/P	0.154	0.222					
WB(3)/A	0.310	0.496					
KW/A	1.937	0.945	0.539	1.546	1.177	3.613	3.566
(KW-KZ)/A	1.598	2.028	2.538	1.463	1.889		
(WN+AM)/Z	3.203	3.472	3.655	3.585	3.134	3.246	2.903
WO/KF	0.436	0.495	0.467				
MO/ZKT	0.192	0.166	0.179	0.363	0.500	0.455	0.452
KO/MT	0.140	0.195	0.226	0.172	0.160		
P/A	0.386	0.030	0.168	0.114	0.749	0.802	
Log A	1.715						
Const (w_0)	-9.832	-0.392	-0.678	-0.593	-1.962	-2.478	-1.498

Source: Maczynska E., Zawadzki M., 2006

Table 2

Definition and designations of coefficients – variables of estimated discriminant functions

Coefficient name	Coefficient specification	Numerator	Denominator
Revenue growth rate	rP (2)	Sales revenues	Revenues in the previous year
Return on assets	WO/A	Operating result	Total assets
Return on sales	WN/P	Net financial result	Sales revenues
Cumulated gross return on assets	WB(3)/A	Cumulated gross financial result for 3 years	Total assets
Return on equity (self-financing ratio)	KW/A	Equity	Total assets
Adjusted ROE ratio	(KW-KZ)/A	Equity less share capital	Total assets
Debt service coverage	(WN+AM)/Z	Net financial result plus depreciation	Total liabilities
Coverage of financial expenses	WO/KF	Operating result	Financial expenses
Current liquidity	MO/ZKT	Current assets	Short-term liabilities
Working capital to fixed assets	KO/MT	Working capital	Fixed assets
Asset productivity	P/A	Sales revenues	Total assets
Relative value of assets	Log A	Decimal logarithm of the value of assets	

Source: Maczynska E., Zawadzki M., 2006

which do not face bankruptcy risk and a positive value assumed for bankrupt companies point to a classification error.

Research results and discussion

1. Reasons for financial difficulties and description of the analysed enterprises representing the meat sector

With respect to the source of information on financial standing of companies, the accounting principles make a

distinction between risks related to business continuity based on the nature of risk. When this criterion is applied, two groups of risks may be distinguished: financial and non-financial signs.

In 2007, most companies declared bankruptcy in the production sector, and manufacturers of foodstuff and drinks, footwear and clothing represented the major share of bankrupt companies from this sector. As for industrial companies, it was excessive indebtednesses that led to bankruptcy. Loss of liquidity was ranked fourth in this hierarchy. Two reasons characteristic for

this group of enterprises, which, however, did not prove so significant for construction and trade companies, were inappropriate structure of assets financing and excessive production base compared with sales level. The majority of reasons were endogenous in the case of production companies.

Low production concentration is typical for the Polish meat sector, which makes it highly competitive. Competition may lower prices and profitability. Dispersion of the meat industry is mainly attributable to low concentration of hog and bovine livestock supply caused by dispersed agricultural structure and increasing number of entities in the meat industry, especially in slaughter business, characterised by low technical and sanitary standards. One should underline that hog livestock has decreased in Poland. Insufficient livestock supply rises costs of production for companies specialised in meat processing. Difficult situation of the meat sector is also the result of the transition period (ended in 2009), during which Polish enterprises were required to undertake measures to meet the EU standards. Adjustments led to substantial investment outlays. These factors make enterprises exposed to the risk of bankruptcy. The market is being cleaned up and ineffective enterprises disappear, which will contribute to consolidation and improve production capacity of the meat sector. Between January 2008 and January 2012, approximately 200 companies suspended or ceased production.

Polski Koncern Miesny Duda (abbreviated "PKM" in the paper) is a company founded by the Duda family in 1990. PKM Duda S.A. is the leading company of the PKM Duda Group operating in the broadly-defined agricultural and foodstuff field of the meat sector. The PKM Duda Group is a vertically integrated group of companies from the meat sector. Their activities range from livestock slaughter, meat cutting and distribution (beef, pork, wild game), and livestock breeding to growing cereals and other plant products, and manufacturing of processed meat products. The manufacturing plant is in Grabkow (Wielkopolskie voivodship). The Group has become one of the three largest entities in the Polish meat sector with FTE nearing 2,400 employees.

The year 2009 was the most difficult for the PKM Duda Group in terms of its functioning on the stock exchange market. Among the factors that mostly affected the company's operations were the situation on the Forex market, and trends showed by the prices and supply of hog livestock. In 2009, hog livestock production fell, which translated into a decrease of pig meat production and rising prices of livestock in the first quarter of 2009.

A company, which is a large-scale exporter, must hedge against FX risk. In 2005, PKM DUDA SA began using FX options for hedging purposes. In 2008, the Polish zloty suddenly depreciated. Between July and October, export sales totalled several million euros per month (more than 20% of the company's turnover). Consequently, the company recorded losses on FX transactions. At the end of 2008, the accounting loss on FX options equalled PLN 29 million and continued to soar. Investors started to sell the company's shares. The share price slumped by 40% within one week. In July 2009, the company's debts arising under the option transactions totalled approx. PLN 88 million. After the sudden fall of the prices of the company's shares, banks made their

demands for debt repayment, which put the company at risk of losing its liquidity and going bankrupt. Bankruptcy of PKM Duda S.A. would mean loss of employment for approx. 2.5 thousand people and pose a financial threat to farmers since the company is the main buyer of hog livestock (Sprawozdanie zarządu z działalności ..., 2009).

The Management Board planned to improve effectiveness in the years 2010-2014 and make savings at the level of PLN 80 million (cumulated result) by implementing the restructuring programme. The largest cost savings will be mainly achieved by "building a target procurement organisation – central procurement" – approx. PLN 27 million, coherent model and policy of distribution management – approx. PLN 31 million and optimisation of employment costs – approx. PLN 14 million (Sprawozdanie zarządu z działalności ..., 2009).

On 23 December 2009, the company and a syndicate of banks including Kredyt Bank S.A., Bank Polska Kasa Opieki S.A., Powszechna Kasa Oszczędności Bank Polski S.A., ING Bank Śląski S.A., Bank Zachodni WBK S.A., BRE Bank S.A., and Bank Handlowy, concluded a syndicated consolidation loan agreement under which the company obtained financing of PLN 102,908 million in total to repay the debts due to the bank lenders arising under loans and sureties that are subject to restructuring as stipulated by the recovery plan in force. In the fourth quarter of 2009, PKM Duda S.A. fulfilled its obligations related to closing of the rehabilitation procedure.

The company "Zakłady Miesne Herman SA" analysed in this paper is located in Hermanowa, Tyczyn municipality, Rzeszowski powiat, Podkarpackie voivodship. The company employs approx. 220 people and supplies more than 500 customers, including Makro, Real, Carrefour, Kaufland, and Auchan store chains. The financial situation of the company started to worsen in 2008. The following factors contributed to this worsening: growing costs of labour, power supply, fuel, transport, and animal stock. The Management Board of the company stressed that the results in 2008 were adversely affected by the chain of own stores and took the decision to sell nearly 50 retail stores. A recovery plan was formulated based on which the company was provided by its shareholders with a sale and lease back of PLN 1.5 million. These funds will be allocated for reduction of debt and current activity. The recovery plan assumes downsizing of operating costs, improvement of profitability of products, closing of approx. 10 unprofitable stores, which generate losses, and sale of non-core assets.

The company Mispol S.A. is a manufacturer and distributor of canned meat, pâtés and pre-cooked meals. The Mispol S.A. Group operates through its four production plants in Poland (two plants in Suwalki and two factories in Białystok), one plant in Grodno, and three plants in the Czech Republic. Mispol S.A. recorded a negative net working capital in the years 2007-2008 and in 2010. In 2010, the value of short-term liabilities rose by over 500% compared with 2006. Factors that could testify to a worsening financial condition included growth of the liabilities in total, low liquidity ratios, low profitability, and net loss incurred in the years 2008-2009, loss of the controlling interest and winding-up of one of the acquired companies, and high level of investment financed mainly by short-term liabilities.

Financial ratios used for calculation of the IES PAS models

Coefficients (variables)	Enterprises	Years						
		2004	2005	2006	2007	2008	2009	2010
rP	Polski Koncern Miesny Duda S.A.	0.63	0.63	0.20	0.27	0.10	0.08	-0.08
	Zaklady Miesne Herman S.A.	-	-0.02	-0.01	-0.13	-0.01	-0.03	-0.03
	Mispol S.A.	0.33	0.25	0.40	0.75	0.35	0.16	0.02
WO/A	Polski Koncern Miesny Duda S.A.	0.08	0.08	0.11	0.06	0.08	-0.31	0.07
	Zaklady Miesne Herman S.A.	-0.03	0.04	0.05	0.04	-0.10	-0.12	-0.07
	Mispol S.A.	0.02	0.16	0.12	0.06	0.03	0.02	0.03
WN/P	Polski Koncern Miesny Duda S.A.	0.04	0.03	0.05	0.03	-0.01	-0.21	0.02
	Zaklady Miesne Herman S.A.	-0.01	0.01	0.01	0.01	-0.06	-0.05	-0.04
	Mispol S.A.	-0.02	0.08	0.08	0.05	-0.01	-0.02	0.0004
WB(3)/A	Polski Koncern Miesny Duda S.A.	0.13	0.17	0.20	0.16	0.09	-0.42	-0.41
	Zaklady Miesne Herman S.A.	-0.04	-0.01	0.02	0.09	-0.04	-0.21	-0.33
	Mispol S.A.	-0.03	0.12	0.15	0.13	0.08	0.03	-0.01
KW/A	Polski Koncern Miesny Duda S.A.	0.45	0.44	0.45	0.51	0.35	0.30	0.39
	Zaklady Miesne Herman S.A.	0.66	0.68	0.45	0.47	0.52	0.47	0.39
	Mispol S.A.	0.25	0.37	0.74	0.44	0.39	0.43	0.45
(KW-KZ)/A	Polski Koncern Miesny Duda S.A.	0.33	0.34	0.37	0.40	0.26	0.0002	0.001
	Zaklady Miesne Herman S.A.	0.16	0.14	-0.01	0.01	-0.08	-0.22	-0.30
	Mispol S.A.	0.23	0.35	0.73	0.43	0.38	0.42	0.44
(WN+AM)/Z	Polski Koncern Miesny Duda S.A.	0.16	0.16	0.21	0.16	0.03	-0.56	0.14
	Zaklady Miesne Herman S.A.	0.13	0.35	0.14	0.16	-0.08	-0.07	-0.004
	Mispol S.A.	0.04	0.28	0.43	0.12	0.04	0.03	0.06
WO/KF	Polski Koncern Miesny Duda S.A.	4.28	2.86	6.73	3.16	0.80	-1.78	2.25
	Zaklady Miesne Herman S.A.	-2.40	4.85	5.01	2.25	-5.69	-16.57	-5.70
	Mispol S.A.	0.42	6.29	3.97	2.21	0.61	0.50	1.21
MO/ZKT	Polski Koncern Miesny Duda S.A.	1.15	1.42	1.39	1.05	0.72	0.53	1.00
	Zaklady Miesne Herman S.A.	0.97	1.30	1.31	1.23	0.83	0.66	0.88
	Mispol S.A.	1.23	1.16	2.56	0.80	0.75	1.09	0.77
KO/MT	Polski Koncern Miesny Duda S.A.	0.09	0.22	0.19	0.03	-0.20	-0.35	-0.0002
	Zaklady Miesne Herman S.A.	-0.01	0.07	0.08	0.08	-0.07	-0.15	-0.06
	Mispol S.A.	0.17	0.16	0.66	-0.17	-0.24	0.05	-0.18
P/A	Polski Koncern Miesny Duda S.A.	1.35	1.86	1.75	1.51	1.33	2.10	1.86
	Zaklady Miesne Herman S.A.	2.15	2.29	1.95	1.68	2.02	2.25	2.19
	Mispol S.A.	1.68	1.66	1.04	0.85	1.00	1.24	1.17
Log A	Polski Koncern Miesny Duda S.A.	5.60	5.67	5.78	5.94	6.04	5.87	5.89
	Zaklady Miesne Herman S.A.	4.45	4.41	4.48	4.48	4.40	4.34	4.34
	Mispol S.A.	4.53	4.64	4.99	5.32	5.38	5.35	5.38

Source: author's calculations based on the Financial Statements of researched companies

Table 4

Results of the models created by Maczynska and Zawadzki at the IES PAS

Coefficients (variables)	Enterprises	Years						
		2004	2005	2006	2007	2008	2009	2010
Model A	Polski Koncern Mięсны Duda S.A.	7.98	7.75	7.46	6.31	3.39	-1.05	2.90
	Zakłady Miesne Herman S.A.	-0.34	3.60	2.38	0.53	-3.43	-8.72	-3.98
	Mispol S.A.	1.86	5.60	7.88	6.95	3.67	2.78	2.41
Model B	Polski Koncern Mięсны Duda S.A.	7.55	6.97	6.69	5.04	1.89	-3.33	1.29
	Zakłady Miesne Herman S.A.	-0.05	4.42	3.34	1.39	-3.29	-9.25	-3.77
	Mispol S.A.	2.90	6.92	8.53	7.12	3.44	2.43	2.04
Model C	Polski Koncern Mięсны Duda S.A.	7.38	6.90	6.49	4.88	1.78	-3.43	1.32
	Zakłady Miesne Herman S.A.	-0.11	4.22	3.05	1.10	-3.42	-9.03	-3.77
	Mispol S.A.	2.93	6.82	8.48	6.96	3.32	2.38	1.96
Model D	Polski Koncern Mięсны Duda S.A.	6.07	6.25	4.06	3.93	1.94	-3.31	1.06
	Zakłady Miesne Herman S.A.	1.53	2.80	1.57	0.85	-0.39	-0.94	-0.52
	Mispol S.A.	3.06	4.69	7.52	6.42	3.36	2.43	1.66
Model E	Polski Koncern Mięсны Duda S.A.	2.01	2.56	2.95	2.10	1.08	-4.37	1.46
	Zakłady Miesne Herman S.A.	1.35	2.94	1.57	1.36	-0.74	-1.13	-0.64
	Mispol S.A.	0.97	3.30	4.88	1.29	0.70	1.09	1.09
Model F	Polski Koncern Mięсны Duda S.A.	2.03	2.53	2.91	2.14	1.04	-4.22	2.00
	Zakłady Miesne Herman S.A.	2.21	3.92	2.24	2.03	0.19	-0.04	0.41
	Mispol S.A.	0.65	3.14	4.73	1.12	0.49	0.85	0.92
Model G	Polski Koncern Mięсны Duda S.A.	1.85	1.94	2.39	1.83	0.92	-4.76	1.42
	Zakłady Miesne Herman S.A.	1.39	2.91	1.58	1.58	-0.45	-0.87	-0.39
	Mispol S.A.	0.26	2.68	4.69	1.35	0.63	0.81	0.91

Source: author's calculations based on the Financial Statements of researched companies

2. Study results

Table 3 presents the calculated coefficients with which discriminant functions will be filled in. When analysing the financing ratios, one should emphasise a negative return on sales noted by all the analysed entities in the years 2008 and 2009. Zakłady Miesne Herman showed a negative revenue growth rate and negative return on assets as well as lack of debt service coverage starting from the year 2008. In the years 2006-2009 (2006 to 2008 in Mispol S.A.), the current liquidity ratio fell

substantially below the threshold recommended by banks. ROE has decreased in the majority of the analysed companies since 2007.

Table 4 presents the results for the models created and developed by Maczynska and Zawadzki at the IES PAS (Maczynska E., Zawadzki M., 2006). It should be highlighted that the results of the traditional ratio analysis covering the examined entities are mainly consistent with the results of the analysis based on discriminant models. The study shows that despite a different set of coefficients

and level of weights used in the analysed models, they give comparable results. The majority of the models (except F) showed that Zakłady Miesne Herman had been at risk of bankruptcy since 2008; whereas, PKM Duda S.A. faced bankruptcy in 2009.

Based on the calculated models, only Mispol S.A. was not exposed to bankruptcy in the analysed period. It seems that the models reflect well the economic situation of enterprises operating during the financial crisis. The model results have been visibly worse since 2008 (beginning of the crisis marked by the decline of Lehman Brothers). The obtained results and the analysis of warning signs detectible in enterprises show that the models were well-selected to assess the bankruptcy risk and constitute a useful tool for company managers.

Conclusions, proposals, recommendations

The performed analysis leads to the following conclusions:

1. Models developed at the IES PAS by E. Maczynska and M. Zawadzki allow efficient assessing of bankruptcy risk. Despite the fact that the model-related writings state that models show the highest efficiency when used for a sample of enterprises based on which they are developed, they enable to assess the analysed enterprises from the meat sector and reflect financial difficulties faced by the companies.
2. The managers should use discriminant models to respond in advance to financial and non-financial signs of bankruptcy risk. Such approach would allow implementing a recovery plan and company restructuring. Most companies, however, choose liquidation since it is frequently too late for any remedy measures.
3. Factors pointing to the worsening financial condition of the analysed companies include, among others, systematic decrease of sales revenues, occurrence and further deepening of the net loss or net profit showing a significant decrease, lower liquidity

triggering excessive growth of liabilities, growing demand for loans and credit facilities (in general short-term financing) and defaulting on loan debts, sales of fixed assets, and long-lasting negative operating cash flows. One should underline the specific nature of the operations of the meat sector enterprises, which are characterised by very low concentration of production.

4. Discriminant models should be updated on an ongoing basis and cannot be the only tool used to predict bankruptcy.

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Cooperative Banks and a Problem of Adverse Selection in Agricultural Credit Market

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Abstract. The aim of the paper is to examine how the cooperative banks in Poland consider the role of the informal information and reputation of farmers in overcoming the problem of adverse selection on agricultural credit market. The information from the author's survey was used in the analysis. The examination showed that cooperative banks as agents, which operate in local societies, use informal information about the potential borrowers in the process of allowing credits. Moreover, the results of survey confirm the role of reputation in economic relations as managers of cooperative banks admitted that they considered it. The low level of impaired loans in cooperative banks can partly stem from application of these tools aimed at solving of the adverse selection problem.

Keywords: adverse selection, agricultural credit market, cooperative bank.

JEL code: G21

Introduction

Asymmetric information is often defined as the situation that occurs when at least one participant of contract has information advantage over other participants. This type of asymmetric information is better recognised compared with the second type, which takes place when each party of the transaction knows the full truth of what has occurred, but it is costly to disclose the facts to anyone other than an on-site observer (Williamson O., 1985). The credit market is especially sensitive to the problem of asymmetric information, and the first type of it is typical for this market.

Asymmetric information in the credit transactions refers to the situation when the borrowers have better information about their ability and willingness to repay loan than the lenders. Borrowers know their actual plans concerning the using of the money (the problem of credit fungibility occurs), real profitability of the project, and other important factors.

The asymmetric information is strictly connected with problems of adverse selection and moral hazard. The former is sometimes described as precontractual asymmetric information, while the latter - the post contractual asymmetric information. They are very important phenomena because, as the Furubotn and Richter (2003) noticed "*The better informed party is tempted to engage in precontractual opportunism² in the first case and post contractual opportunism in the second*".

The aim of the paper is to examine how the cooperative banks in Poland consider the role of the informal information and reputation of farmers in overcoming the problem of adverse selection on agricultural credit market.

The study concerns particularly the following problems: (i) advantage of the cooperative banks on commercial banks in granting credit to farmers due to

their embedment in local society; (ii) the role of informal information in overcoming the information problem on agricultural credit market; and (iii) the role of farmers' reputation in the process of granting credits to them by cooperative banks.

Materials and methods

The author's survey on the determinants of granting agricultural credits by cooperative banks is the main source of data. It encompassed all cooperative banks in Poland (the banks' chairmen). The investigation was carried out in two steps. In January of 2008, the cooperative banks belonging to one from three affiliations of cooperative banks were examined and in February of 2009, the banks affiliated in two others. As a result, totally 161 questionnaires were obtained (from about 28% of all cooperative banks in Poland). The assumption on embedment of cooperative banks in local societies was taken in the survey. The officers of cooperative banks are the members of the local community; they take part in its daily life, know people, and have access to different informal information about neighbours. Under such circumstances, the problem of influence of informal information and opinions of different character on the process of granting credit arise. It can be connected with the sources of advantages of cooperative banks over commercial banks in rural areas. The data of more general character were mainly taken from annual reports of the Polish Financial Supervision Authority, and the Central Statistical Office. They are for the years 2000-2009.

Some different methods were applied to achieve the aim of the analysis. The descriptive method is used in the part devoted to the theoretical aspects of asymmetric information in credit market. It is supplemented by comparative method when it comes to the characteristics

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² The term of "opportunism" is used in the paper as Williamson defined "some individuals are likely to be dishonest in the sense that they may disguise preferences, distort data, or deliberately confuse issues" (Williamson 1985).

Table 1

The characteristic of agricultural credit market

Year	Credits for agriculture/credits for nonfinancial sector (%)	Credits for individual farmers/agricultural credits (%)	Share of cooperative banks in agricultural credits (%)	Preferential credits for agriculture/ credits for agriculture (%)
2002	6.88	61.48	41.92	82.73
2003	6.60	66.90	47.00	60.91
2004	7.16	63.70	45.41	87.95
2005	5.13	83.01	60.60	78.92
2006	4.96	85.14	64.69	80.14
2007	4.26	87.83	66.11	81.87
2008	3.20	89.89	67.62	78.82
2009	3.10	90.78	68.65	76.44

Source: author's calculations based on the data from *Bilansowe wyniki finansowe bankow w 2002-2004, Monitoring of banks 2005 - 2010 GUS, Warsaw 2003, 2004, 2005, 2011*

of the agricultural credit market. Data were analysed with the use of the descriptive statistical method.

The problem of adverse selection in credit market

The adverse selection in the credit market occurs because the risky borrowers are those, who are most likely to gamble with both their own and other's funds, while conservative borrowers are less likely to suffer losses and need a loan (Knoop T. A., 2008). The agents with unfavourable characteristic are more active in the process of applying for the credit than honest, less risky agents. They can accept worse terms of credit if they do not plan to fulfil them in the future. Because the lenders are aware of this phenomenon, they use credit selection that entails externalities for honest and less risky potential borrowers in the form of longer procedure of lending, stricter assessment of creditworthiness, or shortages of credit. These activities generate the transaction costs for the borrowers as well as for the creditors. The resolving of the asymmetric information problem is in the interest of the creditors as well as the borrowers if they want to participate in credit market, because as Akerlof (1970) in his famous paper "*The Market for Lemons...*" showed, the adverse selection can lead to market breakdown.

The market participants on both sides of credit market have invented some devices, which help them resolve the problem of adverse selection. On the borrower's side, the signalling - mainly reputation is important. In the case of banks, they use appraisal in a form of evaluation of creditworthiness and credit application. During this process, the experiences from long-term relations between banks and applying client (the so-called credit history) are taken into account. The costs connected with these and other devices can be quite high. They are only a part of transaction costs connected with the credit transaction. Van Empel (2001) indicates that many farmers in transition countries have not access to credit because of high transaction costs related to the

value of credit. In the case of banks, as respond to high transaction costs, they can exclude groups of agents when the costs of their service compared with the value of transaction (credits) are relatively high. Farmers are often given as the example of such groups. According to Danilowska (2007), transaction costs of agricultural bank credits for individual farmers can be estimated at 3-5 per cent of bank credit values. The size of transaction costs did not discourage farmers from taking credits.

The characteristics of agricultural credit market in Poland

The agricultural credit market in Poland is a rather small segment of credit market for non-financial sector³ (Table 1). Their share in credits for non financial institutions was going down gradually in the course of 2002-2009 (except of 2004) and in 2009, the share was at 3%. This level corresponds to the role of agriculture in the Polish economy, where the share of agriculture in GDP in 2009 was at nearly the same level. However, the decrease stemmed from higher dynamics of credits for other kinds of credits, especially the real estate credits and lower dynamics of agricultural credits.

The data about the internal structure of agricultural credits shows that the credits for individual farmers prevailed and a noticeable increase of their share in total agricultural credits took place. At the end of the examined period it was at 90%.

Polish agriculture is supported by the government in the form of subsidised credits. These credits have been allowed since the beginning of the transition until now. On the EU membership conditions, they are granted in the frame of the so-called domestic support. The data reflected the scope and significance of this intervention for agricultural credit market. According to the data, this intervention was very important. In 2004, the share of preferential credits in total credits was close to 90%. In the following years, the level of this indicator decreased noticeably but it is still very high.

³ Non-financial sector consists of enterprises, households, non-profit institutions serving households

Table 2

The role of cooperative banks in rural credit market

Specification	2000	2003	2005	2007	2009
Share of cooperative banks in individual farmers' debt (%)	52.3	66.7	70.1	72.5	73.2
Share of cooperative banks in agricultural debt of enterprises (%)	x	7.0	15.4	20.8	24.20
Share of cooperative banks in individual farmers debt due to commercial credits (%)	49.7	89.3	94.6	93.3	90.9
Share of cooperative banks in farmers' bank debt due to preferential credits (%)	52.8	62.7	63.0	67.7	67.5

x - data not available

Source: author's calculations based on the data from *Bilansowe wyniki finansowe bankow w 2002-2004, Monitoring of banks 2005 - 2010 GUS, Warsaw 2003, 2004, 2005, 2011*

Table 3

The role of agricultural agents for the banks by the organisational form

Specification	2002	2003	2004	2005	2006	2007	2008	2009
Agricultural credits/credits for non-financial sector in: (%)								
-commercial banks	4.3	3.8	4.2	2.2	1.9	1.5	1.1	1.0
-cooperative banks	47.0	46.2	44.3	43.3	45.7	43.2	40.0	37.0
Credits for individual farmers/credits for non-financial sector in: (%)								
-commercial banks	1.58	1.58	1.60	1.37	1.26	1.10	0.83	0.80
-cooperative banks	44.7	43.8	41.9	41.5	43.5	41.7	38.7	35.8

Source: author's calculations based on the data from *Bilansowe wyniki finansowe bankow w 2002-2004, Monitoring of banks 2005 - 2010 GUS, Warsaw 2003, 2004, 2005, 2011*

The credits are allowed by cooperative and commercial banks. The role of cooperative banks was rising in agricultural credit market and at the end of 2009, their share in agricultural credit market reached 70%. Detailed data about the activity of cooperative banks in this market shows that cooperative banks were especially important for the individual farmers. At the end of the examined period, the share of these banks in individual farmers' debt reached 75%, in the case of commercial credits, the scope of their engagement was much higher and was over 90%. The share of cooperative banks in the debt of agricultural enterprises was rising gradually but at the end of 2009, it was three times lower than the share of commercial banks.

Granting credits for agriculture is a very important activity for cooperative banks, while for commercial banks it is rather marginal (Table 3). In commercial banks, in 2002, the share of credits for agriculture in credits for non-financial sector was 4%, while seven years later it was only 1%. In 2002, in cooperative banks nearly 47% of the credits for non-financial sector was due to agricultural credits. This share decreased noticeably during next seven years but remained still high – 37%. Because individual farmers are the main group of economic agents that conduct the agricultural activity, their share in debt was a little lower.

It is interesting to know how the cooperative banks consider the role of farmers among other groups of their

clients. In the survey, the banks were asked to indicate the importance of farmers among other groups of clients like individual entrepreneurs, enterprises, individuals, and local governments.

The survey showed that as many as 59% of the inquired cooperative banks indicated farmers as the main group of their clients. Much smaller group of banks (15.6%) declared that farmers were on the second place among their clients; and for nearly 7.5% of banks farmers were on the third place. It is interesting that one of the enquired bank declared that it did not service agriculture at all.

How cooperative banks sort out the problem of adverse selection in agricultural credit market

Cooperative banks face the problem of adverse selection in credit market. Because of the important role of farmers as their clients, it is interesting to know the scope of adverse selection problem connected to this group of clients and how the banks manage that problem.

The data about the problem of impaired loans in the banking sector showed that in general farmers are very credible borrowers. The proportion of impaired loans in loans granted to them is much lower compared with other groups of the borrowers. Worsening of the indicators for every group of clients is a negative phenomenon.

Table 4

The impaired loans by groups of clients and banking sectors

Specification	2009	2010	Specification	2008		2009		2010	
				CoB	CmB	CoB	CmB	CoB	CmB
Proportion of impaired loans in loans to:(%)			Proportion of impaired loans in loans to:(%)						
-individual farmers	3.0	3.3							
-individual entrepreneurs	8.7	10.4	-individual farmers and individual entrepreneurs	3.0	7.6	3.1	8.4	3.8	9.6
-enterprises	11.6	12.4	-enterprises	6.5	6.7	7.9	12.2	9.2	12.8

CoB – cooperative banks, CmB – commercial banks

Source: Report on the condition of Polish banks in 2010. The Polish Financial Supervision Authority, www.knf.gov.pl/en/about_the_market/Banking

Comparison of impaired loans between two sectors of banking demonstrates that the scope of the problem of repayment of debts is bigger in commercial sector of banking. The share of impaired loans in total loans of the different groups of clients was much lower in cooperative banks than commercial ones.

Banks have to deal with asymmetric information and adverse selection. As aforementioned, evaluation of the credit application is the most important way to overcome the problem of adverse selection used by banks. Cooperative banks exploit this tool, however, they do not use as formalised multidimensional ways of evaluation as commercial banks do because they are smaller and their organisational structure is much more flat. Generally, 47% of responding banks admitted that they had special procedure for assessing the farmers' application for credits.

The characteristic feature of cooperative banks is their local character. The bank officers live in the local society. They possess a very vast range of information about their clients regarding their economic and financial situation as well as other information like family network and social behaviours, character, reputation etc. Of course, employees of commercial banks are in the same situation, but the procedures of granting credits in their banks are generally very centralised and there is rather no possibility to use this "knowledge". Most chairmen of banks (82.5%) admitted that informal information about the applicant's economic situation or of other character influenced the final decision during the evaluation of credit application, 2% took them into account if the information was verifiable. Only 11% of respondents declared that the informal information did not play any role⁴ in their banks.

The other aspect, which can influence the evaluation of the credit application is the client's credit history. Nearly all chairmen admitted that they paid attention to it, however, significance of it differed among banks. For 91% of respondents, it is a considerable factor, whereas for 8% it is of rather low importance.

The signalling is indicated in overcoming the problem of adverse selection. The reputation of the better informed part of transaction can be treated as a form of it. The importance of this instrument depends on sensitivity of

creditor to this tool. The reputation is quite ambiguous term, so the differences between reputation and credit history were indicated in the review by this question. The data showed that in cooperative banks this factor was appreciated. Totally, 42% of respondents declared that the role of reputation was important, while 55% observed it but considered it as not very important.

It is interesting that cooperative banks evaluate very high the creditworthiness of farmers. According to the 89.3% of respondents, farmers are more credible than enterprises, 90.2% of them think that farmers are more credible than individual entrepreneurs are, and 85.3% - than individuals are. This positive opinion influences the interest rate on credits granted to farmers only in 45.9% banks.

Conclusions

1. Cooperative banks notice the problem of adverse selection and try to sort out this through the evaluation of creditworthiness of borrowers (farmers).
2. In spite of the fact that farmers were the most important group of borrowers for the majority of cooperative banks and that the agricultural activity is specific, more than 50% of cooperative banks did not have any special methods of evaluation of farmers' credit applications.
3. During the process of evaluation of farmers' credit applications banks, took into account different information. The credit history was an important factor but not crucial one.
4. Cooperative banks as organisations, which operate in local societies, use informal information about the potential borrowers in the process of allowing credits.
5. The results of survey confirm the role of reputation in economic relations. The local character of cooperative banks allows them to use this feature in allowing credit process.
6. The most general conclusion concerns the ability of cooperative banks to resolve the problem of adverse selection. It seems that although cooperative banks did not use very advanced techniques and methods of dealing with asymmetric information,

⁴ In the case of 3% respondents, there is lack of answer.

in particular adverse selection, they manage the problem of adverse selection better compared with the commercial banks. However, the low share of impaired credits can be a result not only of this management but of the set of different factors as well, for example, the sanctions for delays in repayment in the case of preferential credits.

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Regional Competitiveness, Social and Intellectual Capital

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Abstract. The article aims to shed light on competitiveness from a regional perspective and examines the contribution of social capital and intellectual capital to this phenomenon. Further, the concepts of competitiveness, social capital, and intellectual capital are operationalised and applied to Poland. In the paper, the authors evaluated the performance of competitiveness of 16 Polish regions and explored the relationship between social and intellectual capital on the one hand and competitiveness of the 16 Polish regions that correspond to the EU NUTS II level on the other hand.

Key words: regional competitiveness, Polish regions, social capital, intellectual capital.

JEL code: R11

Introduction

Competitiveness has an immense impact on regional development and growth. It is "a way of discussing the relative performance of economies in a benchmarking sense. It can help identify areas of the economy that are lagging behind but not the reason for those lags" (Dunning J., Bannerman E., Lundan S.M., 1998). The Global Competitiveness Report created by the World Economic Forum (WEF, 2004) ranks countries according to certain key features that affect and improve competitiveness. The WEF pointed out twelve pillars of components that made a country or region competitive. Three most important pillars of competitiveness have been constructed to provide a shorter and less complex version of the Global Competitiveness Index, namely, the Growth Competitiveness Index. This index consists of variables grouped together under Technology and Innovation, Institutions, and Macroeconomic structure. According to the representatives of the WEF, these are the most important factors of national economies that provide comprehensive picture of competitiveness. There are institutions like the World Economic Forum, which use, what one can call an ex-ante approach to observe the potential level of competitiveness of nations. There is also a second method, which relies on the revealed outcomes of competitiveness, an ex post approach. The competitiveness ranking used in this paper will apply both perspectives and combine them into one approach. Competitiveness is affected and described by many different factors. Social and intellectual capital are two forms of capital to which a lot of attention has been paid in recent literature on the economic development. Social capital is commonly thought as a fourth form of capital, along with financial, human, and physical one. Like the other forms, it is an important determinant of prosperity and its purpose is to make productive activity possible (Coleman J.S, 1998). Although, the definition of social capital has remained elusive and ambiguous, this notion is also considered as an important factor in explaining economic success. Hanifan has defined it as "those

tangible substances that count for most in the daily lives of people: namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit" (Hanifan L.J., 1916). Social capital is the opposite of physical capital, which comprises land, buildings, and all other forms of private or public owned physical capital. Much of the general literature concerning social capital is focused on using it to build human capital, in the sense of developing strong communities. However, in recent years, a research has grown up around social capital building for community development (Servan L., 1997) and for economic development. Relationships between individuals, norms, and trust, all help facilitate coordination and cooperation that enhance productivity (Routledge B.R., von Amsberg J., 2002). Putnam et. al (Putnam R.D., Leonardi R., Nanetti R.Y., 1993) emphasise that traditions of civic engagement, voter turnout, active community group, and other manifestations of social capital are necessary for both good government, and economic and financial development. Over the past few years, there has been increasing focus on the issue called knowledge paradigm. In the economy based on information and knowledge, these intangible assets have gained in importance and become perceived as the undeveloped source of future success and a key determinant of development and competitiveness. The concept of intellectual capital is a new way of thinking about new forms of economic value. Knowledge is considered as the key factor of success and foundation of competitive advantage (Bradley K., 1997, Bonits N., 2004; Daley J., 2001; Edvinsson L., 2002; Edvinsson L., and Stenfelt C., 1999; Malhotra Y., 2000; Pasher E., 1999). Intellectual capital is comprehended as a multidimensional concept that is reflected in a variety of definitions, different components, and features. One of the widely used definitions explains it as the difference between the market value and the book value of the firm (Brooking A., 1997; Daley J., 2001; Pasher E., 1999; Petrash G., 1996). According to Bontis (Bontis, 2004), IC is "hidden values

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Table 1

Potential weighting scenarios

	Business density	Knowledge based business	Economic participation	Productivity	Earnings	Unemployment
3-factor model	1	1	1	3	1.5	1.5
Equal weighting	1	1	1	1	1	1
Knowledge-intensive	1	3	1	1	1	1
Outcome-biased	1	1	1	3	1	1
Input-biased	3	3	3	1	1	1
Output-biased	1	1	1	1	3	3
Activity-led	1	1	3	1	1	1
Earnings-led	1	1	1	1	3	1
Business density-led	3	1	1	1	1	1

Source: Huggins, 2003

of individuals, enterprises, institutions, communities and regions that are the current and potential sources of value creation"; whereas, Andriessen and Stam (Andriessen D.G., Stam C.D., 2005) define it as "all intangible resources available to a country or a region that give relative advantage, and which in combination are able to produce future benefits". In the economy of knowledge, values created by countries, regions, organisations, and individuals are directly connected with their knowledge and intellectual capital (Edvinson L., 2002). Yet, the key point is to show that the intangible factors create value and determine the growth and competitiveness. The paper is structured as follows. The empirical part of this article starts with the establishment of competitiveness of the 16 Polish regions. The impact of social capital and intellectual capital on regional competitiveness in Poland is discussed thereafter. The final section contains the conclusions.

Research results and discussion

This part of the article aims at evaluating Poland's regional competitive performance by constructing an overall index, which is composed in accordance with the Huggins' Institute approach. The 16 voivodships, which correspond to the EU NUTS II level, will be ranked according to the competitive position they have in comparison with each other. Furthermore, the authors will compare different components of competitiveness. This allows for a more detailed overview of the indicators contributing to regional competitiveness. In order to measure the level of competitiveness of Polish regions, the authors followed the Huggins' approach (Huggins R., 2003).

The comparative analyses covered the evaluation of:

- GDP per capita;
- average earnings;
- business density: the number of patent application of business units per million inhabitants in machinery and equipment manufacturing, post and telecommunications, money spent in research and development, the number of entities newly registered in private and public sector;
- knowledge based business: the number of patent applications per million inhabitants in high-tech, ICT

and biotechnology, business units as a percentage of total employment in total knowledge intensive services, business unit as a percentage of total employment in high and medium tech manufacturing, expenditures on innovation activities, expenditures on research and development;

- economic participation: the number of upper secondary students of vocational education students, of tertiary students (academic and vocational), activity rate;
- unemployment;
- earnings.

The 16 Polish regions were ranked according to their scores on the indices. Then, there was assessed the importance of business density, knowledge based business, economic participation, productivity, earnings, and unemployment based on the scenarios created by Robert Huggins. Finally, it was possible to achieve robust results of competitiveness for the 16 Polish voivodships. In order to test the strength of the outcomes and to achieve the final index of competitiveness, the authors used a weighting system for the different components of competitiveness (Table 1).

The most competitive Polish region is undoubtedly the Mazowieckie voivodship. It takes the first position regardless of the scenarios taken into account. In the top head of ranking, the authors can find also Slaskie, Malopolskie, and Dolnoslaskie voivodships. These are the regions that have the ability to attract skilled, creative, and innovative people; to provide high quality cultural facilities; and to encourage the development of social networks and institutional arrangements that share a common commitment to regional prosperity. These are also regions that have the highest density of firms, the most knowledge-intensive firms, and the highest level of economic participation. In these regions, new firms stimulate competitiveness via market selection and competitive pressures by forcing less efficient incumbents to exit or to improve their productivity. In this way, both the creation and destruction of firms may improve competitiveness. The more middle-ranked regions show more fluidity in their rankings. The most economically disadvantaged regions in Poland are located in the Eastern periphery of the country, namely, Swietokrzyskie, Warminsko-Mazurskie,

The social capital index and competitive index of 16 Polish regions (voivodships)

Region	Index of social capital	Rank	Index of competitiveness	Rank	GDP per capita	Rank
pl11 Lodzkie	84.3122	8	88.6415	7	99.8993	7
pl12 Mazowieckie	207.4805	2	203.5300	1	164.2591	1
pl21 Malopolskie	121.9266	3	128.9457	3	92.6930	11
pl22 Slaskie	256.5813	1	140.2345	2	121.8801	2
pl31 Lubelskie	69.7999	11	81.1463	10	75.2354	16
pl32 Podkarpackie	95.1373	6	74.3508	13	75.7185	15
pl33 Swietokrzyskie	63.6111	14	62.7492	16	83.9329	13
pl34 Podlaskie	57.4167	15	83.2733	9	80.9953	14
pl41 Wielkopolskie	81.8520	9	110.2475	5	116.5884	3
pl42 Zachodniopomorskie	98.0425	5	78.0590	12	100.8944	6
pl43 Lubuskie	87.9542	7	85.9641	8	97.0740	8
pl51 Dolnoslaskie	111.3091	4	124.4999	4	110.4707	4
pl52 Opolskie	49.6967	16	71.9127	14	93.2258	10
pl61 Kujawsko-Pomorskie	79.9652	10	80.4059	11	96.9875	9
pl62 Warminsko-Mazurskie	68.7524	12	64.7615	15	84.1883	12
pl63 Pomorskie	66.1626	13	103.5250	6	105.9574	5

Source: authors' calculations based on the statistical data

and Podkarpackie voivodships. The poor economic performance of these regions may be caused by the predominance of agriculture in regional economy and due to the comparatively unfavourable geographical location of those regions. They border with less economically developed countries like Belarus, Ukraine, and Russia, which is detrimental to new economic initiatives and limits the opportunities for efficient trans-border cooperation (Sadowska-Snarska S., 2002). It is widely acknowledged that less developed regions particularly face challenges in promoting and developing the innovation potential (Boeckhout S., 2004). The problem of these regions in the absence of a basis innovative capacity in business what is especially significant in such areas as Podlaskie, Warminsko-Mazurskie, Podkarpackie, and Opolskie voivodships. Therefore, more emphasis should be put on mobile investment and on creating environments where high-quality business can start and succeed (Turok I., 2004).

The standard measure of regional success is the GDP per capita. The most affluent voivodship in Poland with the GDP per capita of 164% of the national average is Mazowieckie. Slaskie, Wielkopolskie, Dolnoslaskie, and Pomorskie voivodships are to be found among the other regions that have an above average GDP per capita. Furthermore, the GDP growth in Polish regions is characterised by high regional concentration, namely, Mazowieckie, Slaskie, and Wielkopolskie generate one fourth of the total Gross Domestic Product.

In order to present the performance of social capital in Polish regions, the authors created an index of social capital using variables from three different categories, which are often applied in empirical research to estimate the level of social capital. The three categories were knowledge, associational activity, and the local election

turnout. The comparative analyses covered the analysis of the following factors:

- knowledge: the number of upper secondary students, of vocational education students, tertiary students (academic), tertiary students (occupations);
- associational activity: the number of non-governmental organisations, of volunteers, the level of cultural activity, of sports and recreation activities, and of social welfare services;
- local election turnout.

The authors consider these factors as crucial determinants of social capital. They reflect both community engagement, community spirit, and territorial membership. The authors examined the relationship between the index of social capital and the index of competitiveness, and between the index of social capital and GDP per capita. Both correlations were significant, and the index of competitiveness had a slightly better outcome. The problem is the mutual influence of index of social capital and index of competitiveness on the GDP per capita. The correlation does not show the direction or causality of the relationship. It is very difficult to distinguish statistically the impact of social capital on competitiveness or the GDP per capita from the relation proceeded in the reverse direction (Herbst M., 2007). Therefore, it is at least theoretically possible that the regional prosperity and competitiveness create or foster regional social capital, or that cumulative causation can be observed in a dynamic perspective. Undoubtedly, the presence of a high level of social capital facilitates mutually beneficial collective actions that foster prosperity of that region. The research results lead to the conclusion that social capital can be regarded as the crucial determinant of regional development and competitiveness (Table 2).

In order to present the performance of intellectual capital in 16 Polish regions, the authors tried to design

Table 3

Intellectual capital, factor loadings and relative weights of its relevant variables*

Variable	Factor loading	Relative Weight**
R&D expenditure in business sector	0.954	0.067
R&D expenditure in the government sector	0.924	0.065
R&D expenditure in higher education sector	0.947	0.066
Employment in R&D -technicians and equivalent staff	0.994	0.069
Participants of doctoral studies (persons)	0.979	0.068
Participants of postgraduate studies (persons)	0.970	0.068
Academic teachers (persons)	0.946	0.066
Number of population (persons)	0.911	0.064
Employment In R&D-technicians and equivalent staff	0.982	0.069
Entities newly registered in private sector	0.945	0.066
Theatres and musical institutions (number)	0.960	0.067
Non-profit organisations (thousand)	0.949	0.066
Number of tertiary education students	0.982	0.069
Patents granted	0.952	0.066
Participation in local elections (%)	0.930	0.065

* Explained variance 91.238%

** The relative weights sum up to unity

Source: authors' calculations based on the Eurostat and the Polish Central Office of Statistics data

Table 4

Index of intellectual capital of the 16 Polish regions

Region	Code	Index of intellectual capital	Rank
Lodzkie	LD	93.36	7
Mazowieckie	MA	405.67	1
Malopolskie	MP	156.40	2
Slaskie	SL	145.48	3
Lubelskie	LU	80.52	8
Podkarpackie	PM	62.13	10
Podlaskie	PD	43.81	12
Swietokrzyskie	SW	39.51	14
Lubuskie	LB	32.27	15
Wielkopolskie	WP	132.68	4
Zachodniopomorskie	ZP	63.16	9
Dolnoslaskie	DS	123.48	5
Opolskie	OP	31.52	16
Kujawsko-Pomorskie	KP	61.94	11
Pomorskie	PM	95.62	6
Warminsko-Mazurskie	WM	43.41	13

Source: authors' calculations based on the statistical data of the Polish Central Office of Statistics

a framework that enables the investigation of intellectual capital. With the purpose of establishing the intellectual capital of a region, the authors used data for 43 variables that a priori might have some connection with the broad concept of intellectual capital (Table 3). A principal component analysis (PCA) was carried out in order to

investigate which of the 43 variables are related to the concept of intellectual capital. The usual criteria in PCA were applied - Eigen value larger than one, loadings on components eventually larger than 0.8, and theoretically sound labelling of at least the main component. The final result is given in Table 4. The component intellectual

capital could be discerned, which explains about 91% of the total variance. The 15 variables listed in this table have high loadings (weights) on the component, which can be clearly labelled as intellectual capital. The screen plot indicates once more that the 15 variables may be headed under one component. The component consists of various dimensions of intellectual capital. It shows the importance of technological development (e.g. R&D, patents granted), the university institute (students, teachers) but also the importance of social capital institutions as not for profits, participation in local elections, and the number of theatres and musical institutions.

The Mazowieckie region achieved the highest score in intellectual capital in Poland. In the top of the ranking with outcomes ranging from 156.40 to 123.48, the authors find Malopolskie, Slaskie, Wielkopolskie, and Dolnoslaskie. The middle-ranked regions are Pomorskie, Lodzkie, and Lubelskie. Finally, the lowest positions are taken by Opolskie, Lubuskie, and Swietokrzyskie. Undoubtedly, the absolute leader is Mazowieckie, the capital region where economic concentration goes together with the political centre of the country. Mazowieckie owes its high position to its very dynamic growth, both economically and socially. Combining the index of intellectual capital with the competitiveness performance shows a positive relationship between intellectual capital and competitiveness. Regions, which achieved high scores in the index of intellectual capital, are also highly classified in the index concerning regional competitiveness.

Conclusions

In the world of performance of indicators and rankings, it is apparent that regions are compared with each other in terms of their economic position. This article looked at competitiveness from a regional perspective and attempted to conceptualise regional competitiveness for Poland as well as to investigate the relationship between social and intellectual capital, and competitiveness for the 16 Polish regions. There is a strong correlation between the presence of social capital and regional competitiveness. The existence of social capital might be helpful to explain the economic progress of certain regions, because the use of regions' endogenous resources is the key factor of socio-economic development. Sometimes social capital can be insufficient for establishing endogenous sustainable development and economic prosperity, but at least it enhances development. Only regions with the ability to attract and keep intellectual capital can win in a globalised and strongly competitive world. The development of scientific research, technological progress, and innovation are crucial to attain high competitiveness. Knowledge and its quality, scientific research, technological progress, and quantity and quality of human capital are considered as crucial factors for the economic growth and high quality of life. Although, the ability of regions to adopt to fundamental changes in economic environment rests on a range issues including their socio-economic structure, level of initial development, and proximity to capital and innovation as well as the way in which they are affected by national policy decisions (Gorzela G., 2000). It is widely acknowledged that the development of regional

competitiveness depends mainly on endogenous factors. In this respect, one can expect that intellectual capital will be perceived as one of the most important factors for the economic growth.

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State Aid for Self-Employed Persons in Latvia and Other European Union Member States

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Abstract. National competitiveness is based on competitive operators whose successful operation is dependent on favourable business environment. Such an assurance is the mission of the public administration. Regulatory environment, in which an entrepreneur operates, is as important as a relevant infrastructure and possible support for the business start-ups. Self-employment is a form of employment associable with a person's greater freedom of choice as well as increased risk chance. Even though self-employment is usually considered a part of employment policy, in a diverse sense, it can be regarded to as a first step towards forming a business. There is a wide range of labour market policies and measures, which support self-employment in the countries covered by the European Employment Observatory (EEO), such as financial support, subsidies, loans or microfinance, and advice; measures to reduce administrative burdens etc. The aim of the research is to explore the Latvian government and other European Union (EU) Member States support measures for self-employed persons. The authors conclude that almost all EEO countries have policies to support self-employment. Public support plays a major role in each country's aid policy and it is important for self-employed persons.

Key words: self-employment, state aid, European Union Member States, business.

JEL code: G38

Introduction

The search of solution to the unemployment problem and economic growth problem at the present time is the major for governments around the world, particularly in Europe. One of the ways to improve the economic situation in the country is supporting the small business sector including self-employment with different types of aid instruments. The **aim of the research** is to explore support measures for self-employed persons applied in Latvia and other EU Member States. Tasks: 1) to find out national documents which prescribe the support for self-employed persons; and 2) to evaluate measures that exist for self-employment in Latvia and other EU Member States.

The study is based on the monographic method used to assess knowledge on self-employment, the development of a theoretical discussion on support measures and interpretation of the study results, graphical method as well as an abstract - logical method is used to separate the facts for drawing general conclusions.

Research results and discussion

Almost all countries have policies in place to support self-employment. Although, in some countries (e.g. Hungary, Turkey), it is not said to have been an important part of the political agenda (Self-employment in Europe, 2010).

One of the main long-term economic priorities of Latvia set as the government declaration is a favourable environment for business and investment. Latvia has made an important comprehensive document, which sets a target for the government of Latvia to ensure growth and outlines the main lines of action. This is the Latvian National Development Plan for 2007 - 2013. The

plan aims to promote balanced and sustainable national development and to improve the competitiveness of Latvia among other countries in the short-term period. Section 2 of the Plan refers to a company's technological excellence and flexibility, which includes subdivision "Creation of a New Competitive Company." The main challenges related to starting up a business plan are as follows: first, to promote public, particularly young people, interest to become entrepreneurs and set up their own business; to improve business prestige and reputation as well as to implement business start-up incentive programmes, training and advice; second, to provide a unified and effective support for business start-ups (mentor advice, financial support mechanisms etc.) (LR Reģionālas attīstības..., 2006).

The newly proposed Europe 2020 strategy calls on the Member States to remove measures that discourage self-employment but, at the same time, urges countries not to promote involuntary or precarious self-employment. It also refers to self-employment and business in terms of access to education systems and mobility programmes promoting business and innovation among young people.

There is a wide range of labour market policies and measures, which support self-employment in the countries covered by the European Employment Observatory (EEO). The measures are categorised in this executive summary according to the following headings and are described in more detail below:

- 1) financial support, such as subsidies, loans, or microfinance;
- 2) specific support services for people wishing to set up a business including one stop shops;
- 3) the provision of training, mentoring, and advice (including consultancy);

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- 4) measures to reduce bureaucracy/administrative burdens;
- 5) existing favourable conditions for the self-employed or changes to tax/social security regimes;
- 6) measures to increase motivation towards self-employment (Self-employment in Europe, 2010).

1. Measures offering financial support

The importance of providing start-up finance to enable people to access credit in order to set up a business has been recognised through the creation of the aforementioned European Progress Micro-finance Facility. This EUR 100 million fund is intended to support people at risk of losing or those who have already lost their jobs to obtain credit in order to set up a business.

In the **Czech Republic**, there are regular low-scale measures supporting business indirectly provided by the Czech-Moravian Guarantee and Development Bank, and the Export Guarantee and Insurance Corporation. Furthermore, retraining courses provided by labour offices enable start-up entrepreneurs to seek low interest rate loans from the START programme operated by the Enterprise and Innovation Operational Programme.

Enterprise **Estonia** offers start-up grants of approximately EUR 6 400 to those wishing to start a business in specific sectors, with a requirement of 20% own financing by the entrepreneur.

In **Spain**, it is possible to receive unemployment benefits as a lump sum payment, in order to start a new business. The unemployed may receive up to 60% of their total unemployment benefits in one single payment, in order to support them in their business creation process. Certain groups can get a higher proportion of the benefits: men under 30 years of age and women aged less than 35 years may receive 80% of the unemployment benefits that they are entitled to, in one lump sum payment.

In **Austria**, there are a number of measures to help with access to finance. One strand consists of state guarantees, through which companies can double their equity. For example, guarantees are granted by the Austrian Economic Service for 'innovative projects', which are no older than five years. In addition, the *Gründerbonus* (Start-up Bonus) consists of a one-off benefit for start-ups (Self-employment in Europe, 2010).

Among the measures to support self-employment and business in **Latvia**, businesses that are less than a year old will each be eligible for up to LVL 54 000 (EUR 76 205) in loans and up to LVL 5 000 (EUR 7 056) in grants for the starting of business and the repayment of loan. In Latvia, this task is committed to the state joint-stock company "Latvian Mortgage and Land Bank". These Regulations prescribe the procedure for start-ups, which use the support of the European Social Fund, the National Mortgage Bank from the amount of LVL 23 million (LVL 14 million financed by the ESF and the state, LVL 9 million - Mortgage Bank). These activities within the "Latvian Mortgage and Land Bank" are developed in six different support programmes, one of which supports a programme enhancing business start-ups. The Mortgage Bank offers new entrepreneurs a special support programme "Support for Self-employment and Business Start-up" or the Start programme. The programme aims to increase economic activity in the country, business start-ups developing knowledge and

skills as well as providing the necessary financial support for the economic activities. The programme is open to Latvian residents aged 18 years including the unemployed who have expressed a desire to start a business or self-employment as well as newly established businesses. It is also relevant to experienced entrepreneurs who want to start a new business activity (launch of an entirely new product or service) and consequently a new company. The programme supports projects up to LVL 60 000 with the client's participation in at least 10%. Participation is not required if the loan amount does not exceed LVL 5000.

Within the period from 1 September 2010 to 31 October 2011, the "Start programme" has provided financial support to 524 companies, of which 85% - Ltd, 11% - IC, and 4% - self-employed persons.

Most of the companies (all 524 of the project subjects), which participated in the "Start programme", represented the following industries: restaurants and catering services, tax consultancy, automotive maintenance and repair, clothing retail, and logging. On the contrary, IC and self-employed persons were registered in such sectors as hairdressing and beauty services, maintenance and repair, logging, retail sale of clothing and joiners, and leather goods.

2. Specific support services for people wishing to set up a business

Many of the national articles report that support services targeted at people who wish to start up a business have been or are in the process of being set up. These support services can take the form of one stop shops (as in Malta, Poland, Slovakia, the United Kingdom, or the Republic of Macedonia) or business incubators (for example, in Bulgaria, Latvia, Lithuania, Slovakia). In Ireland and Latvia, a regional approach has been used to provide support.

In **Bulgaria**, the Job Opportunities through Business Support project, which ran from 2000 to 2009, aimed to encourage employment by assisting the development of micro and medium-sized enterprises in small agricultural municipalities with high unemployment rates. One of the approaches used was to stimulate self-employment and small business development. All beneficiaries received direct services for facilitating the initial stages of their business development via a network of business centres and business incubators. The package of services provided included consultations, office and informational services, vocational training in small businesses, drafting a business plan and organising marketing surveys; leasing equipment to micro and mini companies; access to the Internet etc.

In **Ireland**, there are 35 County and City Enterprise Boards, located throughout the country. Their role is to develop indigenous enterprise potential and to stimulate economic activity on local level by assisting micro-enterprises (defined as having 10 or fewer employees). Each County and City Enterprise Board includes representatives from the social partners, state agencies, and local voluntary groups as well as elected local public representatives.

One-stop shops were introduced in **Slovakia** in 2007 to simplify access to the market for entrepreneurs by integrating all necessary administration related to

Table 1

Business incubators by region and area of activity in Latvia

Region	Name of incubator	Area of activity	Number of companies
Riga	General partnership "Rigas regiona attistibas inkubators"	Tukums, Limbazi, Ogre	53
	Creative industries business incubator Andrejsala	Andrejsala, Riga	69
Kurzeme	Foundation "Ventspils Augsto tehnologiju parks"	Ventspils, Talsi	49
	Ltd "Kurzemes biznesa inkubators"	Liepaja, Kuldiga, Saldus	52
Latgale	Society "Latgales aparatbuves tehnologiskais centrs"	Rezekne, Balvi, Daugavpils, Livani, Ludza	42
Vidzeme	Society "Biznesa inkubators Cesis"	Cesis, Madona, Aluksne	42
	"VBII" Ltd	Valmiera, Gulbene, Valka	40
Zemgale	General partnership "JIC Biznesa inkubators"	Jelgava, Dobeles, Jekabpils, Aizkraukle	82

Source: authors' calculations based on *Biznesa inkubatori, 2011*

business start-up and operation into one place in a time and cost-efficient manner. Apart from administering the registration in the trade and/or commercial register and issuing a trade licence, one stop shops enable persons at business start-up to complete income tax registration or registration for the purpose of compulsory health insurance, and provide for an electronic copy of a 'defaulter sheet'. Slovakia has also 16 entrepreneurial and technological incubators supporting new start-ups.

The **United Kingdom** has an established single service approach for providing support to new business start-ups, and the existing small and medium-sized businesses. Known as Business Link (in England), Business Gateway (in Scotland), and Flexible Support for Business (in Wales), these organisations offer an array of advice and guidance that includes help with developing a business plan (essential if start-up capital is required) and training courses for before and after a business is underway (Self-employment in Europe, 2010).

Eight business incubators are to be set up in **Latvia** in all regions with financial support from the European Regional Development Fund. These business incubators will provide discounted consulting and business services as well as the use of premises and facilities in the early years of business development (Table 1).

Activities are aimed at promoting the formation of new, viable and competitive businesses in the regions of Latvia, providing them with the necessary premises and advisory services. Business incubation is a unique and flexible business development process - a combination of infrastructure and personnel, designed to help develop new and small businesses by supporting the early stage of development with daily consultations based on business development issues.

According to the Appendix 2.3.2.1 Activity "Business Incubators" of the Cabinet Regulations No. 835 "Rules for the Operational Programme Entrepreneurship and Innovation" as well as the Ministry of Economics decision of 10 February 2009, Latvian Investment and Development Agency is the recipient of funding under this programme.

The project was launched on 27 February 2009 and it is scheduled to be completed by 31 December 2014. Total project costs are LVL 20,208,601, of which the European Regional Development Fund funding - LVL 17,179,419 or 85% of eligible costs and state budget financing - LVL 3,029,182 or 15% of eligible costs (*Biznesa inkubatori, 2011*). Eight business incubators were created in various regions of Latvia. Since January 2009, totally 429 companies have already used the Business Incubator services. Most companies are from Zemgale (Table 1).

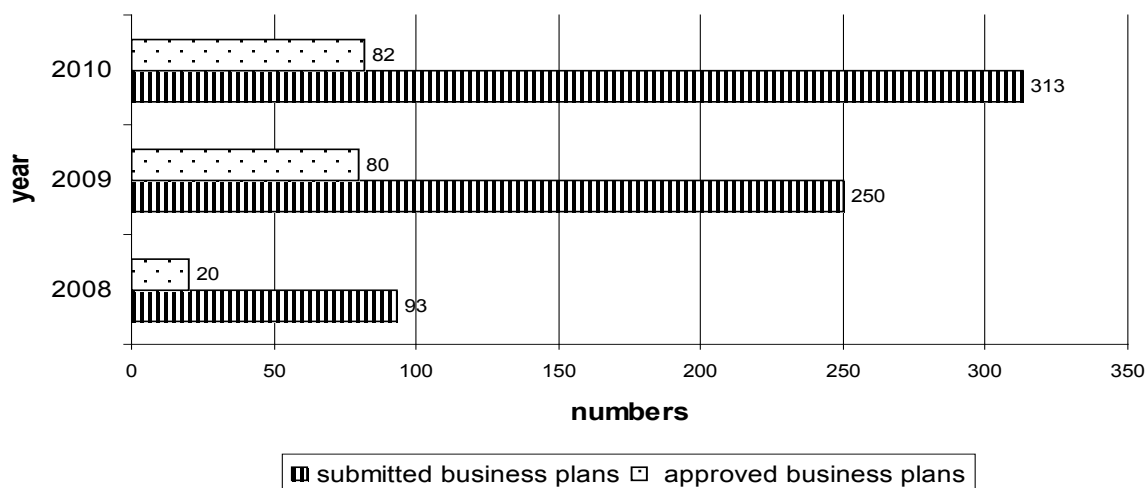
3. The provision of training, mentoring and advice

Several countries (Latvia, Lithuania, Luxembourg, Austria, Slovakia, Croatia, and Iceland) provide training, mentoring and/or advice services including consultancy support, either to people who have recently become self-employed or to those who might be thinking about setting up a business.

The **Lithuanian** Labour Exchange similarly provides information on the conditions for starting up a business, its development, the employment of employees, opportunities for pursuing activities under a business certificate; and organises basic business training for jobseekers.

In **Luxembourg** and **Croatia**, it is the social partners, which provide training and advice to the self-employed. In Luxembourg, self-employed workers need to be registered members of one of the sector-specific Professional associations (e.g. Chamber of Trade, Chamber of Agriculture). These associations offer guidance and expertise directly to members, and advise on the design and implementation of projects on self-employment. The Croatian Chamber of Trades and Crafts organises and helps with the education and improving the skills of new self-employed and the lifelong education and learning of the self-employed.

Austria and **Iceland** have introduced more targeted advice/training programmes. The Impra Unit of the Innovation Centre Iceland promotes innovation and new technology by assisting inventors and entrepreneurs with



Source: authors' calculations based on Pasakumi komercdarbibas vai..., 2011

Fig.1 Submitted to and approved business plans by the State Employment Agency in Latvia, 2008 - 2010

advice and support, while in Austria, the AplusB initiative supports the start-up of new businesses stemming from the academic sector. The support offered consists of professional consultancy services for these potential future entrepreneurs (Self-employment in Europe, 2010).

The search of solutions to the unemployment problem at the present time is the major issue for governments around the world, particularly in Europe. In that sense, much of the discussion on finding solutions to the unemployment problem has focused on the pivotal role to foster business as a way to reduce unemployment, i.e. as an instrument of active labour market policy (Pfeiffer, Reize, 2000).

In Latvia, the State Employment Agency and the Ministry of Welfare provide support in the form of consultancy and financing to a small number of unemployed people who wish to start their businesses or transition into employment, with the recipients of support being those with the best business plans. The objective of activity "Measures of Business or Self-employment" is to provide advisory and financial support measures to help the unemployed with prior training and guidance for conducting business and business start-ups or self-employment and function successfully in a selected area for not less than two years.

The State Employment Agency offers help to registered unemployed persons. The unemployed receive the necessary help and support for business or self-employment:

- consulting business plan preparation and development (20 consultations within 6 weeks);
- If the agency's designated expert has given a positive opinion on the viability of a business plan and required by the State Employment Agency:
- advice business plan of implementation in the first year (20 consultations);
- business grants for business plan implementation - not more than LVL 2000 according to the approved business plan estimates;
- monthly grant to support the implementation of activities at an early stage (the first six

months) - the minimum wage (Pasakumi komercdarbibas vai..., 2011).

This programme becomes more urgent with each year passing among Latvian unemployed. If 93 business plans were submitted in 2008, then in 2010, the number increased three times (Figure 1).

An often-applied labour market policy to combat unemployment is to stimulate unemployed individuals to start their own businesses. Such policy may at least, temporarily lead to increases in self-employment. These policies may be called successful when the formerly unemployed individuals remain in employment for a longer period either as self-employed or as paid-employed worker and also when they become employers they contribute to reduce unemployment not only by creating their own jobs but also by hiring new employees (Congregado, Golpe, 2010).

4. Measures to reduce administrative burdens

As indicated above, one of the key areas for action identified in the 2005 Commission Communication on a modern policy for growth and employment was "red tape". A number of the national articles (Greece, France, Latvia, Malta, Austria, Portugal, Slovakia) show that steps are being taken on the national level to reduce bureaucracy and/or the administrative burdens and costs encountered when setting up and running a business. Some examples are listed below.

Greece has put the reduction of administrative burdens high on the political agenda. This is manifested, inter alia, by the recent bill on the simplification of procedures for the establishment of enterprises, which was submitted to the Parliament for discussion on 17 May 2010. The proposed legislative act foresees great reductions in costs (Self-employment in Europe, 2010).

The **Latvian** Government's plan for the support of micro-enterprises aims to decrease the costs of starting micro-enterprises by reducing the minimum capital requirements and simplifying the bureaucratic

requirements. An entrepreneur can establish a limited liability company with reduced share-capital less than LVL 2 000. From 1 May 2010 to 1 May 2011 in Latvia, totally 15,240 new limited liability companies were registered, of which 9508 (62.4%) were with reduced share-capital. Most companies with reduced share-capital were registered with a LVL 1 large capital (47.5%), while 26.6% - with a capital ranging from LVL 2 to 10 (No gada laika registretajam SIA..., 2011).

In **Slovakia**, recovery measures have been introduced, which simplify and reduce administration related to business operation. These include a shortened period for VAT reclaim (from 60 to 30 days), simplified fuel records (introduction of lump sum expenditures in the sum of 80% of fuel costs), simplified tax records and bookkeeping for entrepreneurs with an annual turnover below EUR 170,000. Another important measure to reduce the administrative burden of doing business was the launching of electronic communication with the commercial register (registration, statements, changes, de-registration, 50% lower fees for electronic communication rather than paper etc.). These are mainly legal entities, which benefit from this policy; though, natural entities/self-employed conducting business based on the commercial code may also gain.

In **Portugal**, the SIMPLEX programme is thought to have contributed to business creation by reducing bureaucracy and simplifying procedures associated with setting up a business (Self-employment in Europe, 2010).

5. Favourable tax or social security conditions for the self-employed

A number of countries have favourable conditions for the self-employed in terms of tax or social security contributions, or changes have been, or will be made in this area, sometimes in response to the economic crisis (as in Romania, Sweden, and the United Kingdom).

Taxes play a major role in the business environment. Robson and Wren (1998) find a negative relationship between the self-employment rate and marginal tax rates but a positive relationship between the average tax rates and the self-employment rate. Blau (1987) and Paker (1996) find that higher marginal tax rates lead to increases in the self-employment rate.

In **Slovakia** also, the current setting of the tax and social security system favours the self-employed compared with salaried employees. Calculations show that in a situation of equal labour costs and expected retirement pensions, the net income of a sole trader is 39% higher than that of an employee. The self-employed pay contributions from a lower assessment base (half of income attained in the previous year). They can also lower their tax base by lump sum expenses at 40% (and in some cases 60%) of income. The tax and contributions scheme allows various speculative base adjustments, by which entrepreneurs can decrease their tax and non-wage burden. Although, this is by no means a business-promoting policy, it acts as a key motive in the decision to start a business.

In **Romania**, the most significant measure has been the favourable income tax rate applied to micro-enterprises since 2007. Set at 2% in 2007, the rate gradually increased to 2.5 and 3% in 2009 but has been wholly eliminated by the government in 2010 within its crisis budgetary consolidation plan.

In **Sweden**, in response to the economic crisis, employers were given a respite from paying social security contributions and preliminary taxes for their employees for two months during 2009. The recent emergency budget in the **United Kingdom** has also brought about more favourable conditions for business start-ups. This includes an extension of the 10% relief rate for entrepreneurial activities; enlargement of finance for start-ups with the extension of the Enterprise Finance Guarantee; a reduction in corporate tax for small businesses; and exemptions from National Insurance contributions for new employees in areas outside the South East England (Self-employment in Europe, 2010).

From 1 January 2010 in **Latvia**, a natural entity performing economic activities in certain professions or activities may choose to pay patent fees. Patent fee is a fixed tax, covering income tax and state social insurance contributions for individuals of economic activities in the profession. Within 10 months (January 2011 – October 2011), the State Revenue Service has recorded 267 persons who wanted to pay patent fees: in Riga - 129, in Vidzeme - 75, in Zemgale - 28, in Kurzeme - 24, and in Latgale - 11. Most patents are issued to persons who collect the bounty of forests and meadows (Informativais ziņojums ..., 2011).

The Micro-enterprise Tax Law was adopted on 1 September 2010. Micro-enterprise - an individual merchant, an individual undertaking, a farm or fishing enterprise as well as a natural entity is registered as a performer of economic activity by the State Revenue Service. The micro-enterprise tax rate shall be 9%. Micro-enterprise tax includes mandatory state social insurance contributions, personal income tax, state fee of the business risk for micro-enterprise employees, and corporate income tax (Micro-enterprise Tax Law, 2010). On 1 July 2011, totally 12,575 micro-enterprise taxpayers were registered, while by 31 July this number had risen to 13,354 taxpayers.

6. Measures to increase motivation towards self-employment

Some people may argue that trying to become self-employed is not the most interesting entrepreneurial behaviour. Business is ultimately about wealth creation, not about the creation of a job for the founder. However, starting a business and entering into self-employment is in most cases the first step of an entrepreneurial career. To learn really about business, it is not sufficient to study success stories, one also needs knowledge on the process entrepreneurs go through on their way to success or failure. To demonstrate that a specific competence is central for entrepreneurial progress, the authors should incorporate them in business education and training programmes (Kolvereid, L, Isaksen, E. 2006).

In **Germany**, the Foundation Country Germany initiative, introduced by the Federal Ministry of Economics and Technology, focuses on young people, as it attempts to build motivation for self-employment through better information and promotion work at schools and universities.

In **Latvia**, the scope is broader; The Motivation programme was approved in December 2008 aiming to encourage as many people as possible to start their own businesses, to raise the overall prestige of business, and

to inform the society about the potential of innovation. It was introduced to support activities that improve the capacity of teaching personnel to motivate young people, activities that spread the best practices in starting businesses and developing innovation and marketing activities for innovation and businesses. More than LVL 2 million (EUR 2.8 million) of financing has been allocated to this activity, of which 85% is provided by the European Regional Development Fund. Finally, in **Luxembourg**, the Ministry of the Economy and Foreign Trade and the Ministry of Medium-sized Companies ran the *Trau dech — maach dech selbststänneg* (Have the heart to take part — become self-employed) campaign in 2004 to encourage the population to create new companies (Self-employment in Europe, 2010).

Conclusions, proposals, recommendations

1. Self-employment is an important driver in business and job creation, and thus, contributes to the European Union's goals of more growth and better jobs.
2. Almost all European Employment Observatory countries have policies in place to support self-employment. Exploring the European Employment Observatory public support for self-employment, the authors conclude that it has a major role in each country's aid policy, and it is important for self-employed persons. Improving the business environment is a focus of policy in some countries (Austria). Some countries have implemented education and awareness-raising activities to increase understanding of the opportunities offered by self-employment (Sweden), while other countries focus on supporting businesses to grow, or develop (Finland).
3. There is a wide range of labour market policies and measures, which support self-employment. The measures are categorised in this executive summary according to the following headings: Measures offering financial support; Specific support services for people wishing to set up a business, including one stop shops; Provision of training, mentoring and advice; Measures to reduce administrative burdens; Favourable tax or social security conditions for the self-employed; and Measures to increase motivation towards self-employment.
4. Turning unemployment into self-employment has become a major focus of the EU countries active labour market policy. In Latvia, the State Employment Agency and the Ministry of Welfare provide support in the form of consultancy and financing to a small number of unemployed people who wish to start their businesses or transition into unemployment. Policy makers should be careful about what to do with their stimuli, since in the context of a highly regulated labour market, these types of incentives could not generate desired effects on paid-employees who switch to dependent self-employment.
5. Recommendation for future research: it should investigate effectiveness of each support measure to find out if the national support programme

objectives have been achieved and what their results are. Future research should investigate the support for the unemployed people to start businesses and engage in self-employment, which could be a good tool in the fight against the unemployment. One of the solutions how to generate jobs and reduce unemployment would be focusing public opinion more on innovative and high-growth businesses than forcing the unemployed into engaging into self-employment.

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Problematic Aspects of Financial Reporting in Latvia

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Abstract. The article outlines the changes of accounting policy in financial reporting having occurred in Latvia within the past decade. This period is significant, since the Latvian system of financial accounting and reporting was integrated into the European accounting system. The legal regulation of accounting has been developed and improved in the mentioned period. The article focuses on the legal and regulatory enactments defining significant changes in Latvian system of financial accounting, and development tendencies for the regulation of accounting in Latvia within the recent years. The research hypothesis: adjustment of the regulatory enactments on accounting assumes their harmonisation with the requirements of international standards.

Key words: accounting policy, significant information, financial reporting, standards, the development of financial accounting in Latvia.

JEL code: M40, M41

Introduction

Market relations imply an appropriate economic area, which encompasses a wide range of different objects and subjects, and where each of them independently, without any mediation, decides on the mutually beneficial economic relations with business partners. This informational connection is provided by financial reporting, which is a link between an enterprise and the society, and one of the tools for its management. Data of the financial statements are interesting for a wide range of individuals and legal entities, which are connected with the activity of reporting enterprise. Financial reporting is a means of interaction between an enterprise and the market. For better efficiency, the market as external user shall have appropriate information on the activities of a business entity. Information may be insufficient or excessive for the user; thus, urging for the introduction of the notion "material information".

Reforming of accounting implies its progressive and harmonious development consistent with the acknowledged principles, assumptions and rules, which are formulated in the International Financial Reporting Standards. Considerable changes have occurred in this direction within the past decade; hence, Latvian Accounting Standards (LAS) becoming the initial basis for the changes (Jesemcika A., 2008). The course of reforms is supported by the Cabinet Regulations No. 427 of 5 August 2003. The Cabinet Regulations No. 488 of 21 June 2011 prescribe the procedure for outlining events after the balance sheet date, change of the accounting policy, and changes of accounting calculations and adjustment of errors in the financial statements.

The usefulness of accounting and the information of financial reporting are achieved by the direct use of the LAS. The IFRS have served as the basis for developing of Latvian financial accounting and reporting system. Therefore, issues on the practical application of the LAS No. 4 "Change of Accounting Policy, Changes of Accounting Calculations and Errors over Previous Reporting Periods" (hereinafter – standard) in financial

accounting for making scientifically reasonable economic decisions in strategy of the development of enterprises' activity are especially important for Latvian enterprises (Latvijas gramatvedības standarti, 2005). The standard is adopted by the decision of the Accounting Board on 9 February 2005. Article 15.2 of the law "On Accounting" determines the meaning of Latvian accounting standards in the preparation of financial statements as common and reusable guidance for recognition, estimation of items in financial statements, and provision of their explanation.

Here, one should note the practical importance of Principle 4 of the LAS principle on the definition of criteria of choice and changes in the accounting policy. Currently, the standard is the cornerstone of the whole reporting preparation system.

The aim of the research – to ascertain the tendencies of changes having occurred in the system of financial accounting and reporting in Latvia within the past decade.

Tasks of the research – to study the criteria of choice and changes in the accounting policy as well as accounting and representation of the changes of the accounting policy in financial statements and changes in accounting calculations.

Methods of the research. Legal and regulatory enactments were analysed for the research purpose. The method of analysis and synthesis, a logically constructive method, and a monographic method were used in the research.

Research results and discussion Analysis

Reforming of accounting in Latvia, its adaptation to the market demands and international standards will require clarification of the existing provisions of accounting both in the title and the content and more precise classification. In international practice, the mentioned provisions are known as the principles of accounting, and so they are disclosed in international and Latvian accounting standards (Resina G., 2008).

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The presence of single principles of accounting is explained by the very purpose of financial accounting in the market economy, which is intended to generate complete and authentic data on the property and financial situation of enterprises, act as a method of communication among entrepreneurs, and to be a part of the general government system forming macroeconomic and microeconomic indicators. The accounting policy of an enterprise should meet the requirements of completeness, accuracy, priority of materiality over form, continuity, and rationality (Starptautiskie finansu parskatu..., 2008).

Latvian accounting system does not contradict the world acknowledged approaches to the accounting. The presence of fundamental principles of accounting (assumptions, requirements, and provisions) suggests its unconditional performance (Gada parskatu likums, 1992; Konsolideto gada parskatu..., 2006). Essentially, they are explained by the very purpose of accounting in the market economy, which forms complete and authentic data on the property and financial situation of enterprises. Notions of "assumption" and "requirement" are also the provisions of accounting.

The accounting policy is changed only if:

- there is a need for any explanation;
- financial statements result in containing reliable and more relevant information on the influence of operations, other events or conditions influencing the financial situation of the enterprise, its financial results of activity, and,
- the cash flow.

The users of financial statements shall have the opportunity to compare financial reports of an enterprise for several reporting periods to determine the tendencies of financial situation, operational, and cash flow results. The approved accounting policy shall be applied consistently from period to period to provide comparability of reporting. Therefore, the same accounting policy, excluding the abovementioned cases, is usually applied in financial statements.

The accounting policy is not changed if it is:

- approved for operations, other events, and services, which essentially differ from the earlier operations, events, and services;
- applied to such operations, other events, or services, which did not happen earlier or were insignificant.

The management of an enterprise may apply the accounting policy, which is approved by the new documents issued by other standard-setting authorities. Enterprises may voluntarily make a decision to change their accounting policy based on the later-made changes in the mentioned documents.

The change of accounting policy with the retroactive effect means that the enterprise corrects the balance of each equity item, which has been influenced in all the previous reporting periods. The enterprise also adjusts other comparative indicators for all the reporting periods as if the new accounting policy has always been applied. Application of the new accounting policy retrospectively means the comparison of information of the previous reporting periods as long as it is practically possible. Exceptions are allowed in case it is practically impossible to determine the influence of this accounting policy on each previous reporting period or its general influence (Latvijas gramatvedības standarti, 2005).

It is not practically possible to apply the accounting policy with retrospective effect in a certain previous period if it is impossible to determine its general influence on the rest of balance sheet items at the end and the beginning of the reporting period. The sum of adjustments, which relates to the periods prior to the specified ones in the report, is attributed to the balance of each equity item at the beginning of the oldest specified period. Usually, the adjustment is attributed to the retained earnings but it may also be attributed to another equity item. Any other information on the previous reporting periods, for example, disclosure of financial data, is also being adjusted as long as it is practically possible.

In case of practical impossibility to determine the influence of accounting policy on comparative indicators for one or few previous specified periods, the enterprise applies the new accounting policy for the book value of assets and liabilities at the beginning of the period, starting from the oldest period it is practically possible. In case of the reporting period, the remaining equity items of this period influenced at the beginning of the period are respectively adjusted. Hence, in such situation, the enterprise adjusts comparative information prospectively; starting from the date such adjustment is practically possible.

The change of accounting policy is allowed also if its perspective application is impossible in none of the previous periods. The enterprise indicates in the notes to the financial statements the sum of adjustments occurred due to the application of requirements prescribed by the new external regulatory enactments and Latvian Accounting Standards. The sum is attributed to periods before the specified period, as long as it is practically possible to determine it.

The annual report ensures the evaluation of the financial results of business, the state of settlements with the budget, creditors, lenders of money, and the economic conjuncture (Zarina V., 2004). The violation of individual accounting principles and requirements without sufficient reasons may distort the property and financial situation of an enterprise and its business results. On certain conditions, it may be interpreted as incorrect accounting.

However, it does not mean that the enterprise in any case has no right to neglect the mentioned assumptions. In reality, especially on conditions of the economic crisis, there may be cases when the enterprise has to neglect some assumptions. For example, the assumption of going concern business is not applicable in the accounting policy in case of liquidation of an enterprise. These situations are exceptions from the general rule (Gada parskatu likums, 1992; Konsolideto gada parskatu..., 2006).

The choice of accounting methods may be linked with the choice of preference for one or another requirement. For example, completeness of the accounting of economic activity may not completely meet the requirement of rationality and vice versa. In this situation, the enterprise management has to evaluate the influence level of chosen method on the usefulness of financial information, and to decide on the requirement to be preferred. Hence, the establishment of accounting policy is the process of balance achievement between the mentioned principles and requirements.

The Annual Accounts Law specifies general requirements for the preparation of financial statements and content of financial statements, provides the

Table 1

Criteria for setting the principle of materiality

No.	Criteria	Indicators of financial statements, LVL	Materiality, %
1.	Earnings before taxes	0 – 1 000 000 1 000 000 – 3 000 000 3 000 000 -	10 7 5
2.	Net turnover - 3 000 000 3 000 000 -	1 0.5
3.	Total assets - 1 000 000 1 000 000 – 10 000 000 10 000 000 -	2 1 0.5

Source: author's construction based on legal enactments of the Republic of Latvia

Table 2

The example outlining the influence of application of the new accounting policy with retroactive effect

No.		Sum of influence		
		Balance sheet	Profit or loss account	Statement of changes in equity
<i>Influence on the previous reporting period</i>				
1.	Increase in interest payments and decrease in the value of objects under construction	(x)		
2.	Reduction of corporate income tax payments and related liabilities	x		
3.	Reduction of net profit		(x)	
4.	Adjusted balance on 31 December of the previous reporting period			(x)
<i>Influence on the periods from two to more previous years</i>				
1.	Increase in interest payments and decrease in the value of objects under construction	(x)		
2.	Reduction of corporate income tax payments and related liabilities	x		
3.	Reduction of net profit		(x)	
4.	Adjusted balance on 31 December 20XX			(x)
5.	Net influence of change of the accounting policy on 31 December of the previous period		(x)	(x)

Source: author's construction based on legal enactments of the Republic of Latvia

characteristics of statements, the procedure for their submission, terms for storage, and the responsibility (Gada parskatu likums, 1992). The principle of materiality prescribes the disclosure of all the material information related to the basic indicators of the enterprise in accounting and financial reporting. It is recommended to set the materiality in the accounting policy of an enterprise expressing its size as a share (Table 1).

Errors may appear in the recognition, estimation, statement, or indication of items in the financial statements. Financial statements are considered not prepared consistent with the external regulatory enactments and Latvian Accounting Standards if they contain material errors or deliberate trivial errors made to create a definite opinion on the financial situation, business results, and cash flow of the enterprise. Errors of the reporting period disclosed in the period or at the end of the period are adjusted before the approval of financial statements for publication (Butinjec F., 2008). However, sometimes material errors are not disclosed till

the next periods; and then the adjustment of these errors is indicated in the notes to the financial statements of the appropriate next reporting period.

Cases of unidentified or incorrectly identified information are material if they individually or commonly may affect the business decisions of users made on the basis of the financial statements. The materiality depends on the amount of unidentified or incorrectly identified information and the estimation of the essence in the context of specific circumstances. The amount or the essence, or both of them may be the decisive factor.

If the accounting policy has been changed in the annual report, then it is necessary to adjust the respective indicator of the previous period's item. Each case containing incomparable data or adjustments in data of the previous reporting periods is disclosed in the notes to the annual report.

The author provides an example of changes in the accounting policy and impact of changes on the financial statements. In the reporting period, the enterprise has

voluntarily changed the accounting policy regarding the capitalisation of payments on loans. Before the reporting period inclusively, the historic value of objects under construction increases in payments on loans used for formation of fixed assets. From the reporting period, these payments include the business results of the reporting period – the profit or loss account. The accounting policy is changed to ensure more transparent financing consistent with the needs of the main funding entities of the enterprise. The application of the new accounting policy with retroactive effect has the following influence:

The accounting policy has been changed with respect to the capitalisation of loan expenses and other expenses. The new accounting policy implies that the initial costs of objects under construction include the direct costs incurred in respect of the constructed object before its commissioning, excluding payments on loans that are included in the profit or loss account of the period they have incurred. Thus, it was required to adjust the financial statements retrospectively.

Problems

In Latvia, the "liquidation value" is not being applied in the development process of accounting policy and calculating the depreciation of fixed assets (Starptautiskie gramatvedības standarti, 2008; Zarina V., 2004). The depreciation of fixed assets is admissible up to a hundred percent. Expenses related to the liquidation of fixed assets are not being considered in the calculation. Therefore, the residual value of fixed assets equals zero after the end of their useful life determined by each entrepreneur independently. Frequently, such fixed assets are still being used in business activity without their revaluation at fair value. According to the materiality principle, enterprises shall determine the liquidation value, for example, 5-7% of the initial costs of fixed assets. This will help avoid errors in the accounting of fixed assets with zero value.

Issues related to the application of fair value in accounting and reporting, are not completely studied and methodologically developed in Latvia (Kuzmina I., 2006). Hence, assets in the balance sheet are reflected by different evaluations:

- foreign currency is disclosed by the real value (according to the exchange rate of the Bank of Latvia);
- fixed assets - mostly by the revaluated value (applying very average coefficients), which frequently does not correspond to the actual value of concrete objects;
- accounts receivable and accounts payable - usually by the historic value;
- material reserves – by mixed value, i.e. one part is reflected by the historic value and the other part - by the possible sales value;
- finished goods, in cases when the account "production output" is used in the accounting policy - by the standard (planned) cost etc.

The author believes that such a mix of different evaluations of assets and liabilities in the balance sheet as one of the basic forms of financial statements evidences not only the absence of a single concept in financial reporting but also forces the users of financial statements encounter unreasonable difficulties. In addition, the balance sheet as the main source of information thereto, greatly decreases in its value, since it contains only

approximate to reality evaluations of the enterprise's resources and not the real ones.

Accountants do not apply the principle of fair value due to the following reasons:

- they are afraid to exceed their competence and to break the law;
- determination of "fair" value is perceived as the function of an evaluator and not of an accountant;
- the sphere of the fair value is quite new for the legal system of Latvia.

The accounting by fair value and the disclosure of information on fair value are the different ways of disclosure of information on fair value, which have different consequences both from the point of view of reflection of financial data in the financial statements and the analysis of these data by the users of financial statements.

The disclosure of assets by fair value leads to the changes not only in the balance sheet data, but also in financial results of the enterprise's business that are included in the profit or loss account and in the statement of changes on equity. At the same time, the disclosure of information on fair value provides the user with additional data that could be used for the analysis of the enterprise activity without changing of the reporting data. Evaluation of fixed assets by their fair value would allow enterprises disclosing their potential and future opportunities in the reporting as well as providing the opportunity to evaluate business activity of the enterprise. Therefore, the author primarily focuses on the reforming of financial accounting, since currently, the problem of investment attraction for the sectors of economics remains topical and acute.

The following question immediately arises with respect to changes of the accounting policy: for how many years is it necessary to recalculate the reporting data if an enterprise is operating, for example, 20 years. From a purely theoretical point of view, the answer is obvious – for the entire 20 years. However, the opportunity to apply this approach in practice is doubtful and the opinions on this fundamental recalculation will hardly cover its costs.

Conclusions, proposals, recommendations

1. The paper analyses the criteria of choice and change of the accounting policy in the financial reporting of Latvia. Significant changes in this sphere have occurred within the past decade, Latvian Accounting Standards (LAS) becoming their initial basis. This sphere is regulated by the Cabinet Regulations No. 427 of 5 August 2003 and No. 488 of 21 June 2011.
2. Accounting policies should not be applied when their influence is insignificant. However, even insignificant deviations from the standard, which are committed to present a certain opinion on the financial situation shall not be allowed or ignored.
3. The biggest problem of the standard No. 4 is the retrospective recalculation of indicators for the past years related to the change of the accounting policy or to the detection of serious misstatements related to the previous reporting periods, and the provision of comparability.

4. Issues related to the application of fair value in accounting and reporting are not completely studied and methodologically developed in Latvia.
5. Latvian Accounting Standards, particularly LAS No. 4, are an important step in the reforming of financial accounting, since currently, the problem of investment attraction for the sectors of economics remains topical and acute.

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Improvement of Internal Control System of Agricultural Enterprises

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Abstract. Tendencies observed in the development of agricultural sector in Latvia indicate not only to the economic growth but require also a detailed analysis and control that would ensure real prerequisites for the improvement of financial situation of an enterprise. The economic activity of agricultural sector enterprises is not a topical object in the research field. This leads to the lack of information in every enterprise in different aspects: accounting, asset management, documentation etc. The lack of information in its turn negatively affects flows of information in the enterprise; thus, leading to serious restrictions in internal control and consequently causing inefficient work of the system.

The aim of the research is to study the problems of internal control in agricultural production process and to explore the possibilities for improvement of internal control in Latvia.

The authors have advanced the following **tasks** to achieve the set research aim:

- to analyse opinions of different authors on the possibilities to improve the internal control;
- to study the objects of internal control and applied methods within a production cycle of an agricultural enterprise;
- to determine the objects and methods of internal control in crop and livestock production;
- to explore the problems of internal control related to the prime cost of agricultural produce;
- to determine the possibilities for improvement of internal control related to the use of material resources.

The authors identify the necessity for the analysis and internal control of agricultural production process. Therefore, the problem of understanding related to internal control is analysed in the research. Conclusions provide the insight into the application of internal control models from the practical point of view as well as they substantiate the necessity for the improvement of internal control models in agricultural sector enterprises.

Key words: internal control, risk-based internal control, control of the production cycle.

JEL code: M49

Introduction

Efficiency of internal control system is affected not only by the applied methods and procedures but also by the extent to which enterprises understand the specification of their business activities. The research will outline possibilities for the improvement of internal control through the general analysis of enterprise activities. Risk factors having negative effect on the objects of control were determined summarising the data. The objects of control and risks affecting them are linked over time and space; hence, it may be concluded that they would depend on the specifics of an enterprise's activity. The research authors search for opportunities to improve the internal control in agricultural enterprises.

The authors believe that the control science should be exactly developed for certain groups of enterprises. It is necessary to distinguish areas or zones where the question of internal control requires advanced research. Such grouping will help determine general characteristics of industry and opportunity to prepare information applicable for industrial enterprises. It is possible to make grouping by types of business activity. Peculiarities of internal control are marked with peculiarities of business process. Therefore, enterprises that are engaged in only one type of business activity will have many contact points, which indicate features for the research scope of internal control. Discussions could lead to the opportunity to outline other features of classification that according

to the authors provide preconditions for the development of science.

The paper **aims** to study the problems of internal control of agricultural production process and to explore the possibilities for improvement of internal control in Latvia.

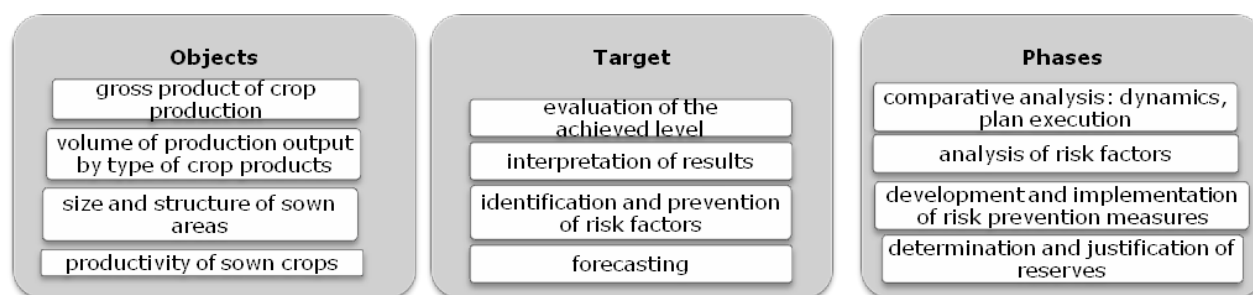
To achieve the research aim, the authors have used the following theoretical research methods as the analysis of literature and methods of data processing: methods of statistical analysis, methods of economic analysis, and economic-mathematical methods. The method of analysis and synthesis, a logically constructive method, and a monographic method were also used in the research.

The performed analysis and research are based on international standards, statistical data, foreign and Latvian research papers, data of Latvian and foreign periodicals, Internet sources, and unpublished data of enterprises.

The authors think that the main object of internal control in agricultural enterprises is exactly the cycle of production. The cycle of production joins all the processes with the common aim to produce finished goods or agricultural produce. The following procedure of control is recommended with regard to the production cycle:

- 1) to determine the validity of planning regarding primary production (crop and livestock). The possibility for the performance of planned tasks and

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Source: authors' construction based on Savickaja G., 2006

Fig. 1. Scheme for the analysis and internal control of crop products

Volume of crop production output		
Size and structure of sown areas: •specialisation of a farm •signed agreements on delivery •state aid •conjuncture of the market •availability of land and labour resources •internal needs	Loss of crop •climatic conditions •due to the fault of an enterprise •force majeure circumstances	Crop productivity •quality of soil •climatic conditions •fertilisation of soil •quality and type of seeds •times and techniques for sowing and harvesting •quality of soil cultivation •methods restricting diseases and malicious worms

Source: authors' construction based on Savickaja G., 2006

Fig. 2. Factors influencing the total volume of crop production output

- an increase in reserves of unaccounted agricultural produce are analysed during the control;
- 2) to check the use of land and animal resources to increase their productivity;
 - 3) to check the execution of developed plans in relation to cultivated areas, productivity of crops, improvement of animal breed characteristics and productivity, output, and prime cost of crop and livestock produce (Belov N., 2006).

The research dwells upon two directions of production – crop and livestock production. Methods of internal control and flow of information will differ by sectors mainly due to biological and technological processes. Hence, internal control of production process of crop and livestock production is analysed separately.

The following tasks are solved in the process of analysis:

- justification and adjustment of production plans;
- systematic control on the execution of plans;
- identification of factors influencing the production output and degree of their significance;
- determination of internal reserves;
- evaluation of the enterprise's activity related to the increase of production based on biased and unbiased factors;
- drafting of measures ensuring the use of defined reserves (Savickaja G., 2006).

Research results and discussion

Internal control of crop production output

The analysis of crop production process in agricultural enterprises is aimed to control the volume of production

output, to determine key risk factors and reserves of an enterprise as well as the most important is to increase their profitability. In general, the process of analysis and control is shown in Figure 1.

The data of Figure 1 lead to the conclusion that the implementation of control is started from the identification of control objects. The common objects of internal control are indicated in Figure 1; however, they may differ by enterprises based on their production specifics and management policy related to the production process. The subjects of control may be determined according to the data of Figure 1 or individually in each enterprise; thus, they are not particularly analysed within this subchapter.

The task of internal control is not only to determine the factors affecting the volume of crop production output and quality but also to analyse the level of influence resulting in identification of the main risk factors that require development of the preventive measures. G. Savickaja (2006) offers to apply statistic methods for such analysis.

According to the authors, statistical analyses are more effective to analyse factors. Expert analysis is also useful. It is preferable to use the opinions of several experts to oppose them and identify common and contradictory points. The mentioned methods for the analysis and control of factors influencing crop productivity are not the only possible methods. The choice depends on the management policy of an enterprise and the qualification of employed experts.

The analysis on the determination of the enterprise's reserves shall be done consistent with the following aspects: enlargement of sown areas, improvement

Sources of reserves for the increase of the volume of crop production output		
Enlargement of sown areas •felling of forests and bushes •plowing of grassland •permit for the use of the state land etc.	Improvement of the structure of sown areas	Increase of the yield of sown crops •more efficient use of fertilisers •introduction of more productive and more intensive crops •reduction of production natural loss •use of agronomic technical innovations • enclosing of sown areas from animals and insects •elimination of employees' fraud activity etc.

Source: authors' construction based on Savickaja G., 2006

Fig. 3. Directions of reserves for the increase of the volume of crop productivity

Volume of livestock production output	
Number of animals •specialisation of a farm •rates of natural increase of the herd •supply of animals with feed •existence of specialised premises •diseases and infections •market demand •purchasing prices of products •geographic location of the plant etc.	Productivity of animals •level of animal feeding •feeding quality •farm-produced feed level •structure of ration •indicators of animal breed •animal-keeping conditions •climatic conditions •qualification level of serving professionals etc.

Source: authors' construction based on Savickaja G., 2006

Fig. 4. Factors influencing the total volume of livestock production output

of their structure, and increase of crop productivity (Figure 3).

If an enterprise implements the policy of reserve determination, then the main task of internal control is to analyse the policy advantages, factors influencing its application, and the efficiency of its economic use. The enterprises not implementing this policy are recommended to analyse the efficiency of the use of enterprise's assets within the internal control. The analysis may be done according to the directions shown in Figure 3. The obtained results will allow identifying the unused reserves that in turn improve the efficiency of use of the enterprise's assets and the volume of production output.

The range of internal control issues offered by the authors enables the establishment of a logical and successive mechanism of control, which covers the entire production and the main values characterising its efficiency. The control of crop production volume is based on planned and existing agro-technical data that enable opportunity to control the compliance of production process with the accepted standards and to identify deviations and their causes; thus, generally improving the productivity of production process.

Internal control of livestock production

The initial stages of livestock production and crop production internal control are similar. Purposes and stages of control are identical with the purposes and stages of crop production control.

Enterprises, which apply the performance scheme of internal control offered by the authors, may establish a suitable internal control model. However, the content of information and sources for its accumulation will be such elements of internal control system that have to be individually defined based on the specifics and experience of an enterprise activity.

Denoting the main risk factors, it is necessary to establish a set of measures that would prevent risk factors or reduce their negative effect on the livestock production volumes similar as for crop production. Besides, enterprises have to identify the degree of influence of each factor on the volume of production output. It is possible to apply statistic methods and experts' evaluation etc.

The mentioned factors of influence have already been largely indicated by the area of control's activity. It is very important to nominate the responsible persons, to draft technological procedure and to follow constantly the execution of the plan. From the part of management, it is hard to control completely the activities of specialists, since it requires special knowledge, which possibly the management does not possess. The evaluation of other experts should be considered in this case.

The analysis of current reserves in livestock production enterprises and evaluation of their application possibilities will have a positive impact on the volume of production output. The main directions for determination of reserves are outlined in Figure 5.

Sources of reserves for the increase of the volume of livestock production output		
Increase in the number of animals • Increase in the share of milking cows in the herd • Reduction of animal death rate • Improvement of zootechnical policy	Efficiency of used feed Improvement of measures controlling diseases and infections	Increase of animal productivity • Improvement of animal structure • Improvement of animal age structure • Improvement of keeping conditions

Source: authors' construction based on Savickaja G., 2006

Fig. 5. Directions of reserves for the increase of the volume of livestock productivity



Source: authors' construction based on Savickaja G., 2006

Fig. 6. Scheme for the analysis and control of agricultural production prime cost

The main directions for the analysis of reserves are determined when analysing the degree of impact of each factor on the total volume of production. If the analysis outlines a factor whose increase or reduction of the characteristics would have a positive impact on the volume of production, it is useful to analyse the possibilities of an enterprise to influence this characteristic feature. It is economically reasonable to search for other ways to increase the production volume, only having knowledge on the enterprise's reserves.

The abovementioned leads to the conclusion that the control of livestock production volume requires a lot of knowledge related exactly to technological process. To reduce the impact of this factor on the efficiency of internal control, it is useful to develop technological procedure in enterprises, and to use the opinions of experts who are not employed by the enterprise. Based on the offered method, livestock production enterprises may develop or improve the mechanisms of internal control system and increase the results of their economic performance.

Internal control of agricultural products prime cost

Reduction of costs is the target, which all enterprises are eager to achieve, since there is a direct link between the enterprise costs and its profit. The level of prime cost characterises the efficiency of production process and serves as one of its control indicators.

The authors believe that the analysis and control of prime cost provides feasible preconditions for the improvement of business efficiency.

The authors agree with the opinion of G.Savickaja that the control and analysis of prime cost have the following aims:

- control on the execution of the plan for the reduction of prime cost;
- analysis of factors influencing the prime cost;
- determination of reserves for the reduction of prime cost;
- probability analysis for the use of determined reserves and control on the application of measures for the use of introduced reserves.

It is useful to start the introduction or improvement of control measures from the definition of a control object (Figure 6). All the expenses analysed by different breakdowns will serve as control objects for the internal control of prime cost.

The process of prime cost internal control and analysis offers the application of phases that are similar to the analysis of crop and livestock production. In the opinion of authors, the mentioned phases allow achieving targets, and they are logical and practically applicable in agricultural enterprises.

V. Ovsijcuk and G. Savickaja in their research believe that the breakdown of costs by responsibility centres plays a significant role in the control of prime cost development. The authors agree with this opinion, since the establishment of responsibility centres enables provision of not only qualitative information or the breakdown principle of undertaken responsibilities but also increases the management activity in the process of cost control. The responsible persons administer their cost items and take full responsibility for the

sums included into these items. It means that the breakdown of cost accounting by responsibility centres includes not only the identified methods and techniques of internal control but also ensures creation of control environment and influences the self-confidence of employees.

The opinion of the research authors on the mentioned question coincides with the group of scientists who identify the concepts of "responsibility centre" and "place of cost formation". Identifying these two concepts, it is possible to implement internal control efficiently and create a logical scheme of internal control. Primarily, the place where costs are incurred is determined. It may be a department or a concrete object. Only after that, the persons who are in direct relation with the object of control are determined. Responsibility centres, i.e. persons which are responsible for the changes in the amount of costs, are determined within the analysis. Therefore, in the range of this research, the concept "responsibility centre" means specialists who control accounting of costs.

The control of costs may positively influence the level of agricultural production prime cost; however, it is not considered as one of the methods for its reduction. The control and analysis of reserves to reduce the prime cost of production are one of the methods.

Sources of reserves for reduction of prime costs may be as follows:

- reduction of the volume of production output;
- reduction of the level of eligible costs.

The mentioned sources allow concluding that the discussed processes (production, control of costs) contribute to the reduction of prime cost. G. Savickaja in her research has outlined this correlation in the following formula:

$$R \downarrow P = P_i - P_f = \frac{I_f - R \downarrow I + I_p}{VKP_f + R \uparrow VKP} - \frac{I_f}{VKP_f'} \quad (1)$$

where:

P_f – actual level of production prime cost;

P_i – possible level of production prime cost;

I_f – actual costs of production;

$R \downarrow I$ – reserve for reduction of production costs;

I_p – additional costs necessary for the use of resources;

VKP_f – actual volume of production;

$R \uparrow VKP$ – reserve for the increase of production volume (Savickaja G., 2006).

According to the authors, the offered model precisely outlines the correlation occurred in the production process of agricultural produce. It is possible to determine objects of internal control and to develop efficient control mechanisms based on this model. Values of two indicators: reserve for the reduction of production costs and reserve for the increase of production volume

restrict the application of this model. Calculations are based on statistical methods and principles of the economic analysis. Studies of the research papers of several authors lead to the conclusion that algorithms of calculations are complex; it means that not all enterprises would be able to make analysis consistent with the theoretical guidelines. Agricultural enterprises have to assess the necessity for the control of prime cost level and they have to choose a suitable model of analysis and control that could be practically applied in a particular enterprise.

Internal control of the use of material resources

Indicators of the production quality affect not only its sales price but the sales possibility in general. For example, several values of grain quality – humidity, diseases, maturity etc. are checked prior to selling grain. If an enterprise does not control materials used in the production process, then it increases the risk of impossibility to sell finished produce on the market. Hence, an enterprise may suffer losses from its business activity.

The process of analysis and control of material resources in agricultural enterprises does not differ from the implementation measures of control in enterprises of other industries. The items related to agriculture and agricultural process may not be disclosed through the balance sheet; hence, it may not be applied for the purpose of analysis. Therefore, it is necessary for agricultural enterprises to follow the theoretical standards and experience to be able to develop an efficient system for internal control of materials.

The analysis and control of material resources are implemented in the following directions:

- analysis and control of material resources support;
- analysis and control of material situation necessary for the production process;
- analysis and control of the use of materials;
- factorial analysis of materials capacity;
- analysis and control of the level of production deficiencies (Belov, N., 2006).

The research authors agree with the opinion of V. Jermolajeva who believes that exactly the economic analysis having the following targets plays an important role in the economy of material resources and the analysis and control of effective use:

- necessary volume of material resources for an enterprise;
- interpretation of indicators on the dynamics of fulfilment of plans;
- determination of factors influencing the deviations of the actual indicators from the planned ones;
- quantitative evaluation of influenced factors and evaluation of internal reserves.

Based on the determination principles of internal control, it is advisable for agricultural enterprises to identify the main materials that have the largest impact on the production process. It allows narrowing the time of control and to control clearly materials based on the nomenclature. Thus, the authors suggest applying the coefficient (K_n, K_n) for the provision of material resources:

$$K_n = \frac{\text{obtained materials}}{\text{amount of required materials according to the standard}} \quad (\text{Savickaja G., 2006}). \quad (2)$$

If the coefficient is over 1, then there is an excess in stock, if the coefficient is below 1 – there is a risk of ceasing production (Analiz materialjnih ..., s.y.). According to the authors, the use of this equation is very practical for agricultural enterprises. Naturally, it does not include complex calculations; however, the achieved result reflects actual provision of materials and raw materials for the production process.

Conclusions, proposals, recommendations

1. Summarising the analysed problems, it can be concluded that the economic analysis, which includes also the statistical methods, plays a significant role in the implementation of internal control process in agricultural enterprises.
2. Objects of the production process in crop and livestock production differ due to the used resources, types of agricultural produce, and other factors.
3. Internal control and analyses of the agricultural production process have common aims and implementation phases.
4. For the implementation of internal control of agricultural produce, it is important to create and control production plans in enterprises. It is useful to develop technological procedure and to use the analysis of expert evaluation in enterprises.
5. In the range of internal control, special attention should be paid to the analysis of factors influencing the volume of agricultural production output that would enable enterprises to determine the main risks and to undertake preventive measures for risk elimination.
6. It is necessary to analyse and control reserves belonging to the enterprise in the scope of internal control to increase the volumes of agricultural production output.
7. Agricultural enterprises have to evaluate the necessity for the algorithm of calculations according to the level of prime cost control, and they have to choose a suitable model of analysis and control that is possible to apply in practice.

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Mortgage Lending Market Development Tendencies Within the Context of Global Financial Crisis

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Abstract. Recovery from the global financial crisis remains fragile. Persistent risks to economic health include high unemployment, debt, and low growth in developed countries, and access to financing for developing countries. Though, Latvia has started to recover from deep recession and its recovery has been recognised internationally. Crediting and especially mortgage lending is one of the aspects characterising economic and financial recovery and viability of any state. Mortgage lending is the primary mechanism used in many countries to finance private ownership of residential and commercial property. The aim of the particular research is to analyse the development of mortgage lending market in individual world countries within the context of global financial crisis. The research allowed concluding that the world financial decline of 2008 and 2009 has affected the economies of the Baltic States including Latvia more severely than the rest of the EU Member States and even the USA. The economic recession stopped in 2010, since real GDP recorded a moderate decrease (of 0.3%) after the tremendous decline of 2009 (-18%). Nevertheless, the world is still circumspect regarding borrowing and almost the same may be said about the commercial banks and their attitude towards lending.

Key words: mortgage, financial crisis, lending, interest rates, households.

JEL code: G01, G15, G21

Introduction

Mortgage lending is a special system of crediting with methods and approaches different from other types of crediting. Attraction and use of long-term resources in mortgage lending as well as trading with mortgage bonds on capital market using sales revenues to cover the necessity for long-term loans serves as the economic basis for mortgage lending system. Mortgage market development is likely to be a key factor in overall financial market development. Dwight M. Jaffee and Bertrand Renaud (1997) argue that an efficient mortgage market acts as a positive externality for the other capital markets, creating pressure for higher efficiency in these markets, while a poorly functioning mortgage market is likely to "pollute" other financial markets with its inefficiency.

In Latvia, mortgage loans became outstanding during the past decade, which may be explained by the revival of banking sector and increase of population welfare. However, the financial situation has altered for the period of 2008-2010, thus, simultaneously bringing changes in the sector of banking and crediting.

The financial crisis starting in 2008, and the important role of mortgage loans not only in the subprime crisis in the United States but also in some EU markets, has acted recently as a catalysing factor to change the traditional perspective. Mortgages and related asset classes, such as developer loans, are so large in proportion to bank assets that, as the crisis developed, the problems on some EU mortgage markets no longer remained confined to national boundaries (Dübel H.J., Rothmund M., 2011).

Mortgage lending has been analysed and discussed by different researchers (Dübel H.J., Rothmund M. 2011; Novoselova A., 2001; Jaffee D.M., Renaud B., 1997; Wyman M.O., 2005; Franke, A., Gyntelberg J.,

Kjeldsen K., Person M., 2004; Boyce A., 2009; Campbell J.Y., Cocco J.F., 2002; Capozza D.R., Kazarian D., Thomson T.A., 1998; Jaffee D. et al., 2003; Schwartz E.S., Torous W.N., 1992; Andrejeva V., 2005; Tirole J., 2002; Korsaks U., Adamson, A., 2001; Chiquier L., Hassler O., Lea M., 2004; Retsinas N. P., Belsky E.S., 2008; Buch J., Rhoda K.L., James Talaga J., 2002; Ijevleva K., 2011 etc.); though all of them have basically analysed mortgage lending in particular countries or mortgage lending in relation to real estate or housing aspects.

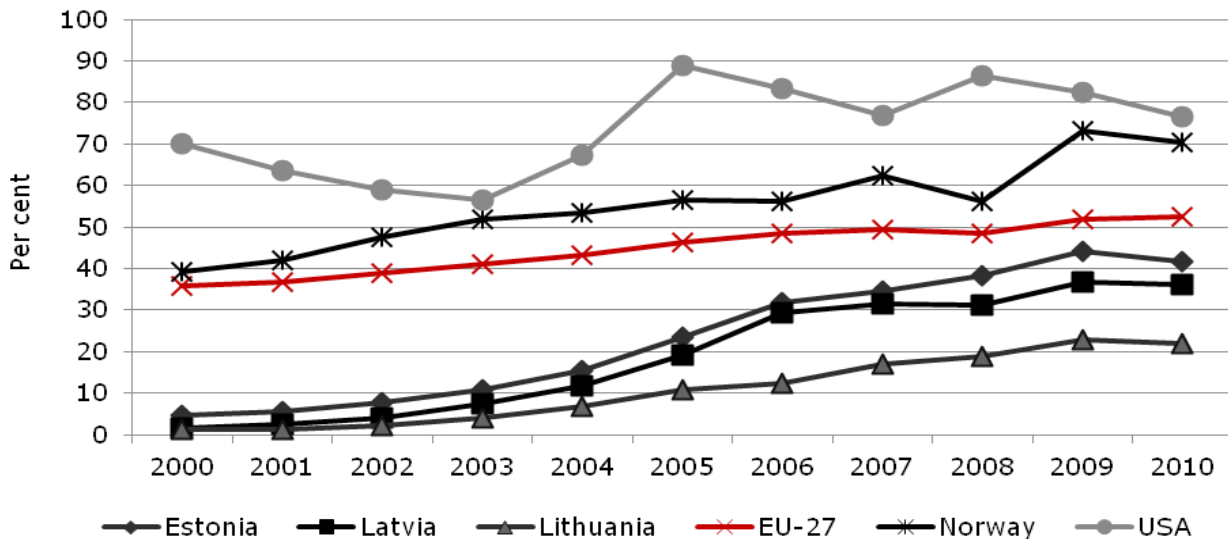
The changing situation in financial world has promoted the research on mortgage lending market and recent financial crisis. Therefore, the **research hypothesis** is that the global financial crisis has left marked traces for the expansion of mortgage lending market. The **aim of the research** is to analyse the development of mortgage lending market in individual world countries within the context of global financial crisis. The following **research tasks** have been advanced to achieve the set aim:

- 1) to analyse residential mortgage debt in selected world countries in relation to the changes of interest rates on mortgage loans;
- 2) to analyse the dynamics of mortgage lending on Latvia mortgage lending market.

The research period covers the years 2000-2010, while in case of Latvia, the period is shortened for the years 2004-2010.

The information compiled by the European Mortgage Federation, Hypostat, information compiled by the Bank of Latvia and Central Statistical Bureau of the Republic of Latvia, scientific publications of foreign and local researchers, and other materials have been used for the purpose of the study.

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Source: author's construction based on Hypostat, 2011

Fig. 1. Residential mortgage debt to GDP ratio in selected countries of the world for 2000-2010, %

The research is mainly based on the monographic descriptive method as well as the methods of analysis and synthesis are used to study the problem elements and synthesise coherencies or formulate regularities.

Research results and discussion

Analysis of residential mortgage debt to GDP ratio in selected world countries in relation to the changes of interest rates on mortgage loans

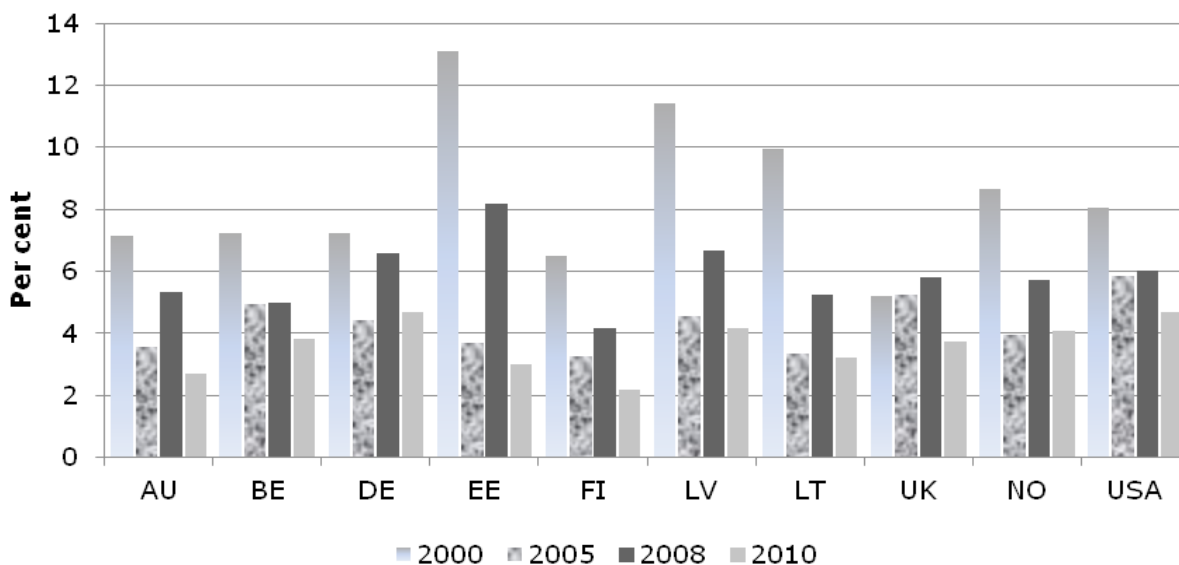
The financial crisis of 2007-2008 has been called by leading economists the worst financial crisis since the one related to the Great Depression and it is contributed to the failure of key businesses declines in consumer wealth estimated in the US dollars, substantial financial commitments incurred by governments, and a significant decline in economic activity. Many causes have been proposed, with varying weight assigned by experts. Both market based and regulatory solutions have been implemented or are under consideration, while significant risks remain for the world economy (Global Financial Crisis..., s.y.).

The global economic downturn of 2008 and 2009 affected the Baltic economies more severely than the rest of the EU in 2009, with no clear signs of recovery in 2010. Latvia followed this trend, although the economic recession stopped in 2010 as real GDP recorded a moderate fall (of 0.3%) after the tremendous plunge of 2009 (-18%). The huge process of deleveraging from excess households' borrowing and the prolonged downturn in the housing market after the crash of 2008 and 2009 continued to impact the Latvian economy during 2010. Government consumption dramatically fell by 11%, as did gross fixed capital formation (19.5%). As a result, domestic demand contribution was again negative, even much less than in the previous year (0.9% in 2010 against 32.2% in 2009). The economic downturn placed public finances under serious pressure, as government debt to GDP ratio went up from 9% in 2007 to 44.2% in 2010; yet, the

government deficit remained above the 3% Maastricht ceiling in 2010 (7.7% of GDP) but decreased compared with 2009 (9.7%) (Hypostat, 2011). Residential mortgage debt to GDP ratio in the Baltic States, Norway, and the USA for the period of 2000-2010 is outlined in Figure 1.

The analysis of residential mortgage debt to GDP shows that the USA has been the most active borrower on the mortgage market. In 2005, the USA has reached the peak of residential mortgage debt equalling to 88.9% of GDP or showing a 32.5 percentage points increase compared with 2003. Generally, the USA shows a fluctuating trend with an increase in 2004-2005 and a decrease in 2007 and 2009-2010. Interesting that an increase of 9.5 percentage points was observed in 2008 compared with the previous year. However, the decline of the GDP amount may explain the increase of residential mortgage debt to GDP ratio. In 2010, the average residential mortgage debts of the EU-27 were about one-third that of the USA, or 52.4% of GDP against 76.5%.

Dübel H.J. and Rothmund M. (2011) have concluded that it is impossible to speak of a European model. They argue that three main categories can be distinguished within the EU, where transition countries generally feature the lowest debt ratios between 20% and 30% of GDP, with the notable exception of the Baltics (Estonia 54% of GDP, even higher than Latvia's 46%). These countries are followed by a range of 'conservative' established markets in the Central Europe with ratios between 40% and 60% of GDP. Finally, most peripheral and Northern European retail finance markets are highly leveraged with ratios between 80% and 140% (Ireland - 79%, Spain - 83%, Portugal - 84%, the Netherlands - 102%, the UK - 108%, and Denmark - 139%). In both, the first and the third category - transition countries and periphery - household debt levels have been strongly rising in the past 15 years (European Credit Research Institute statistical package 2010, see in Dübel H.J. and Rothmund M. 2011). The basic determinant of USA and European household debt



Source: author's construction based on Hypostat, 2011

Fig. 2. Representative interest rates on new mortgage loans for the selected years, %

levels has been a low interest rate environment, with low personal savings rates in the USA and a more varied picture in the EU.

Notably different figures, however, the same trend, are seen when analysing the data of Hypostat, which has collected information from the European Mortgage Federation National Experts, European Central Bank, Eurostat, national central banks, Bureau of Economic Analysis, Federal Reserve, and International Monetary Fund. According to Hypostat (selected data included in Figure 1), mortgage debt of Estonia was 41.7% of GDP, while it was 36.2% and 21.8% for Latvia and Lithuania respectively in 2010. The lowest ratio was for Romania – 5.6% of GDP. The highest ratio was for the Netherlands – 107.1%, Denmark – 101.4%, the USA – 76.55, and Norway – 70.3% of GDP.

In Latvia, the slowdown in lending started in early 2007, driven by concerns among foreign banks on their overexposure to the Baltic States, and at the end of 2007, growth rate in mortgage lending halved compared to what was recorded in 2006 (42.1% vs. 88.1%). As a result of the crisis, mortgage lending in 2008 grew by only 7.3%, while it went into recession for the first time in 2009, having fallen on the previous year by 4.6%. Recession in mortgage lending continued in 2010 and the same rate of decline as in 2009. Total mortgage debt as a percentage of GDP grew extremely rapidly and went from 0.7% in 1999 to the peak of 36.8% in 2009, after moving around 30% in the three previous years (Hypostat, 2011).

Interest rate developments on new mortgage loans

After the onset of the financial crisis, which followed the Lehman Brothers crash in September 2008, and also in order to contain the sharp deterioration in the macroeconomic environment, central banks made several consecutive cuts in their respective policy rates between Q4 of 2008 and Q2 of 2009 down to historical lows (Hypostat, 2011). Figure 2 shows representative

interest rates on new mortgage loans for several world countries, where interest rates were available for the selected years.

In 2000, the highest interest rates on new mortgage loans were observed in the Baltic States: Estonia (13.1%), Latvia (11.4%), and Lithuania (9.93%). This is the period characteristic with high interest rates in commercial banking sector, in general. The next period or the year 2005, which is marked as the beginning of economic growth shows a sharp decrease in interest rates. In Estonia, the decline equalled to 9.4 percentage points, while Latvia and Lithuania experienced a reduction by 6.85 and 6.57 percentage points respectively. On the contrary, the interest rates grew in 2008 after the beginning of the financial crisis. Irrespective of the fact that central banks lowered the rate of refinancing, commercial banks were circumspect and increased lending rates to secure against the possible losses. In 2010, the highest interest rates on new mortgage loans stood for Latvia (4.15%) and the USA (4.69%), while the lowest rates among the analysed countries were observed in Finland (2.17%) and Austria (2.71%). Certainly, the remarkably low interest rates in Finland have boosted the development of housing market. Low interest rates, especially, on short-term loans, are based on strong consumer confidence in the economy. Interest rates in the USA, however, have not fluctuated so extremely as in the Baltic States and Norway. Thus, interest rates in the USA have stayed almost unchanged for 2006 and 2007 and showed a slight 1-percentage point decline in 2009 and a 0.35-percentage points increase in 2010 compared with the respective previous periods. The relatively stable situation for interest rates is mainly explained by the financial policy implemented in the USA. In 2010, the USA ended the worst recession since the Great Depression and most macroeconomic indicators started to indicate recovery. It is noted that interest rates on mortgage loans were on historically low levels.

Table 1

Amount of disbursed mortgage loans in Latvia for the period of 2004-2010

Year	Mortgage loans mln. LVL	% vs. the previous year	% vs. the base year (2004)	Average per one resident, LVL	% vs. the previous year	Average per one household, LVL	% vs. the previous year
2004	1392.2	100	-	602.7	100	1529.0	100
2005	2806.7	101.6	101.6	1220.3	102.5	3099.3	102.7
2006	5311.0	89.2	281.5	2319.2	90.1	5871.1	89.4
2007	7359.9	38.6	428.7	3228.0	39.2	8183.1	39.4
2008	8287.2	12.6	495.3	3650.7	13.1	9216.2	12.6
2009	7899.8	-4.7	467.4	3495.5	-4.3	8791.2	-4.6
2010	7180.7	-9.1	415.8	3191.4	-8.7	8080.9	-8.1

Source: author's calculations based on the Bank of Latvia and CSB data (2004-2010)

Development dynamics of mortgage lending market in Latvia

The assessment of mortgage lending comprises several factors influencing the growth of mortgage lending. These factors relate to various spheres of activities and differently affect the development of mortgage lending. Therefore, they may be classified into four groups consistent with the improvement of mortgage lending system:

- factors related with development of the national economy - GDP growth, development of construction and housing, real estate market, and increase of real estate prices;
- factors related with banking activities - interest rates on mortgage loans, repayment terms, availability and sufficiency of credit resources, amount of loan against the value of collateral, competitiveness among banks;
- factors related with the population welfare level – increase of population income, quantity and quality of housing, willingness of population for larger living areas and more qualitative housing;
- factors related with legislation and regulating standards - standards of Mortgage Bonds Law and other legislative and regulatory enactments, aspects of taxes and tax system, state aid programmes (Andrejeva V., 2005).

The analysis on the development of mortgage lending market in Latvia shows a rapid increase for the period of 1997-2008. The most expressive growth in mortgage lending or a twofold increase was observed in 2005 compared with 2004. Fast increase in mortgage lending was at the end of 2006 and the beginning of 2007, when the increase of mortgage loans was very high. The financial crisis of 2008 affected mortgage lending market in Latvia. Nevertheless, the situation on mortgage market was tense; it was not critical, since the demand for housing and qualitative living areas did not decrease dramatically. Thus, mortgage lending market did not ceased its operation and even starting to show the signs of recovery in 2010 and 2011. Certainly, crediting has turned to be less profitable due to the negative aspects caused by the global financial crisis and this explains also the decline of borrowings and lendings in the banking sector. Several commercial banks have stopped mortgage

lending to avoid risks related with still quite unstable situation on the real estate market. These banks are occupied with the keeping of the credit portfolio quality, while other commercial banks have resumed active crediting and try to involve new clients on mortgage lending market. It shall be mentioned that the prices of housing have dropped drastically compared with the housing boom of 2007-2008 and this aspect prevents the potential borrowers from active involvement in lending market.

Table 1 includes the data on mortgage loans for the period of 2004-2010 and their comparative analysis in relation with mortgage loan amount per one resident and one household for the same period.

At the end of 2005, the amount of disbursed mortgage loans reached LVL 2806.7 million. This amount included new mortgage loans equalling to LVL 1922 million of which LVL 1207 million were aimed for the purchase of housing. Large increase of crediting was also seen in 2006, when the amount of mortgage loans grew by 89.2% compared with the previous year. Increase, though, at a lower rate, continued in 2007 and 2008; thus, reaching the amount of LVL 8287.2 million in 2008. This year is considered as a peak year for mortgage lending, since decline in crediting started from 2009 due to the financial crisis. However, for the two years of crisis, the decrease in lending is not so rapid as the increase experienced within the years of economic growth. In 2007, the speed of crediting was hindered by the government of Latvia, which undertook several measures stepping out of the anti-inflationary policy. Therefore, the amount of loans disbursed in the second half of 2007 declined by 25% compared with the first half of 2007. The growth rate related with the amount of disbursed loans continued to slow down also in 2008, when the banks implemented more secure policy of crediting and started to experience problems with attraction of financial resources. Hence, the increase was only 12.6%. An expressed decrease started in 2009 and 2010, when the amount of disbursed mortgage loans decreased by 4.7% and 9.1% compared with the respective previous periods.

The amount of disbursed mortgage loans was compared with the number of population and households. Here, the analysis showed that in 2010, the mortgage

loans disbursed per one resident averaged to LVL 3191.4, meaning that every inhabitant of Latvia including small children has a mortgage debt of almost LVL 3200 on average. At the same time, each household has a debt of more than LVL 8000 on average. The figures are tremendous. Certainly, the figures are smaller by 12.6% and 12.3% compared with the peak year 2008. Unfortunately, the decline in the amounts results not only from the smaller amounts of loans but mainly to the decreasing number of population and even households.

Assuming that one household has received one mortgage loan for the purchase, reconstruction, or repair of housing, then 10.9% and 12.4% of all households had received mortgage loans in 2008 and 2010 respectively. The average loan per household equalled to LVL 8286 in 2008 and LVL 7179 in 2010. Speculative transactions were one of the reasons for such high amount of mortgage loans, while the decrease in wages affected the possibility to repay loans. In 2010, the recovery of housing market was observed in Latvia, when construction and reconstruction of housing started to overcome the collapse of 2008 and 2009. This means that different trends in mortgage lending could be noticed in the coming years.

Conclusions, proposals, recommendations

1. Mortgage lending is a special system of crediting with methods and approaches different from other types of crediting. Attraction and use of long-term resources in mortgage lending as well as trading with mortgage bonds on capital market using sales revenues to cover the necessity for long-term loans serves as the economic basis for mortgage lending system.
2. The world financial downturn of 2008 and 2009 affected the economies of the Baltic States including Latvia more severely than the rest of the EU Member States and even the USA. The economic recession stopped in 2010, since real GDP recorded a moderate decrease (of 0.3%) after the tremendous decline of 2009 (-18%). Nevertheless, the world is still circumspect regarding borrowing and almost the same may be said about the commercial banks and their attitude towards lending.
3. In Latvia, the slowdown in lending started in early 2007, driven by concerns among foreign banks about their overexposure to the Baltic States, and at the end of 2007, the growth rate in mortgage lending halved compared with what was recorded in 2006.
4. In Latvia, total mortgage debt as a percentage of GDP grew extremely rapidly and went from 1.6% in 2000 to the peak of 36.8% in 2009, after moving around 30% in the three previous years. In 2010, it decreased slightly to 36.2%. In the EU-27 Member States, the peak is still observed in 2010 amounting to 52.4% of GDP.
5. Speculative transactions and decrease in wages being one of the reasons for high amount of mortgage loans in 2008 and inability to repay loans in the following years have affected the mortgage market most severely. Though, in 2010, the recovery

of housing market was observed in Latvia, when construction and reconstruction of housing started to overcome the collapse of 2008 and 2009. This means that different trends in mortgage lending could be noticed in the coming years.

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Elements of the System of Financing Social Transfers and Assessment of Factors Affecting Them in Latvia

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Abstract. The aim of the present research paper is to investigate the elements forming the system of financing social transfers and the factors affecting them.

The system of financing social transfers was investigated, the socio-economic factors affecting the state social insurance special budget were analysed, and the changes in revenues and expenditures of the state social insurance special budget were assessed in the present paper.

The key element of the system of financing social transfers is the state social insurance special budget.

The research showed that there was a strong causal relationship between the state social insurance special budget's revenues and the number of socially insured persons as well as the average wage subject to insurance contributions of socially insured persons.

The number of socially insured persons is significantly affected by employment – the number of socially insured persons grows at a greater rate, with the increase in the number of employed individuals.

An annual deficit has emerged in the state social insurance special budget since 2009, thus, decreasing the amount of accrued funds in this budget. If such a trend continues, a situation might emerge that the special budget lacks funds to pay out social transfers.

Key words: social transfers, socially insured person, wage subject to insurance contributions of socially insured persons, system of financing.

JEL code: G22, G29, I39

Introduction

Social transfers consist of state pensions and government benefits. Social transfers play a significant role in the system of social security, as they ensure the social protection of residents and affect their welfare in situations of social risk. The majority of social transfers are financed from the state social insurance special budget (Mistre B., 2009).

Economic development and employment are prerequisites for a social security system of high level. The aging of population, a low birth rate, an increase in the average lifespan, and emigration affect the life of residents in Latvia. Due to these factors, the number of retired persons continues increasing, while the number of employees and payers of social contributions decreases, thus, significantly increasing the burden on social insurance system in the country.

To ensure a balanced budget, it is important to assess the changes in revenues and expenditures of the state social insurance special budget.

Hypothesis: various socio-economic factors affect the state social insurance special budget.

The **research aim** is to investigate the elements forming the system of financing social transfers and the factors affecting them.

The following **tasks** were set to achieve the research aim:

- to investigate the system of financing social transfers;
- to assess the changes in the state social insurance special budget;
- to analyse the socio-economic factors affecting the state social insurance special budget.

The monographic method, analysis and synthesis, deduction and induction, and statistical analysis methods as well as the graphical method were employed in the present research.

Legal enactments of the Republic of Latvia, data of the Central Statistical Bureau (CSB) and the State Social Insurance Agency (SSIA), and studies in the field of social insurance in Latvia were used in the present research.

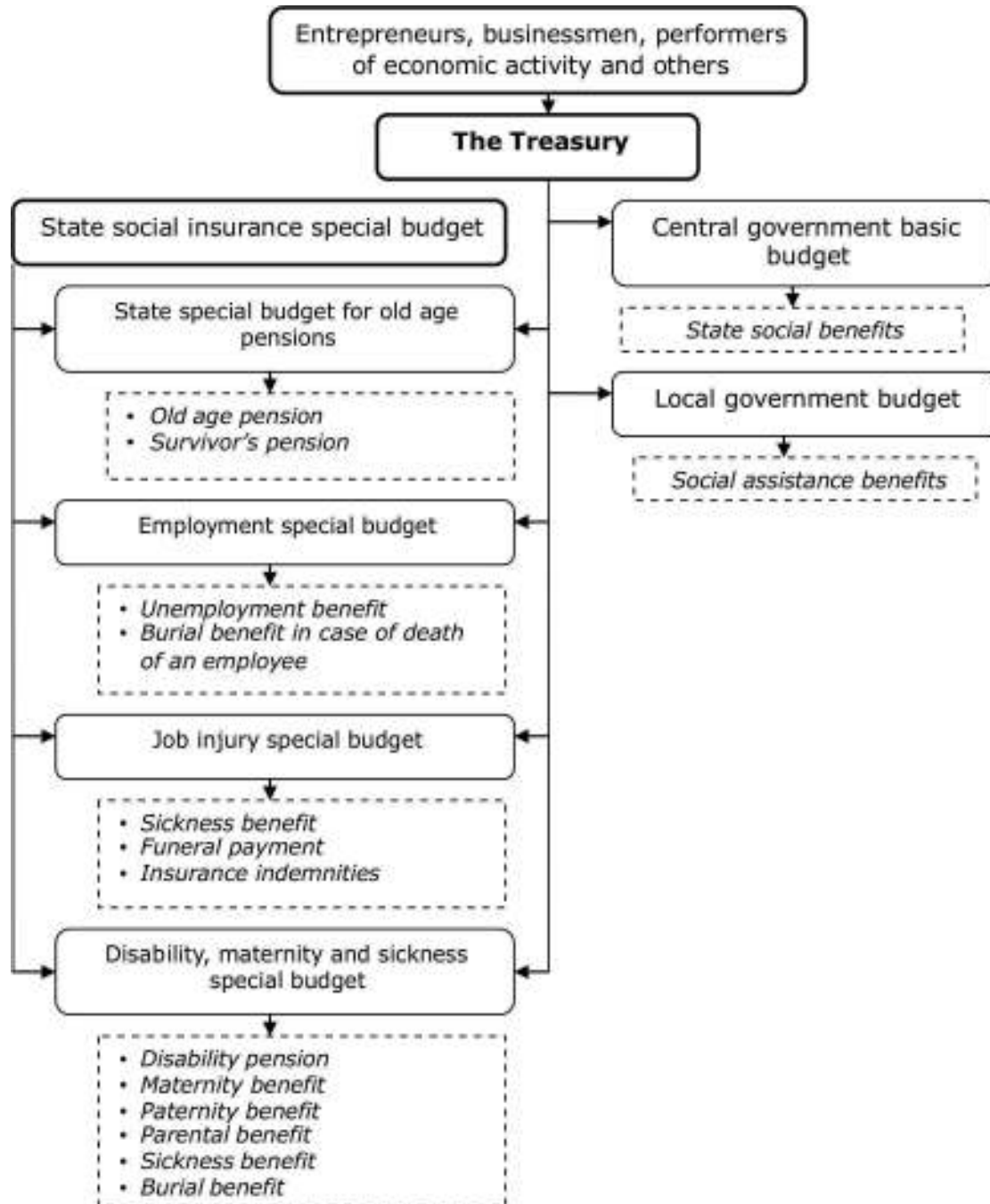
Research results and discussion

1. System of financing social transfers

In Latvia, state social insurance pensions and benefits are financed from the state social insurance special budget, while state social benefits are financed from the central government basic budget and social assistance benefits are paid out from the respective local government budget.

The consolidated budget is divided into the central government budget and local government budgets in Latvia. The central government budget, in its turn, is divided into the basic budget and the state social insurance special budget.

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Source: authors' construction based on laws of the Republic of Latvia

Fig. 1. System of financing social transfers in Latvia

The state social insurance special budget is divided into the state special budget for old age pensions, the employment special budget, the job injury special budget, and the disability, maternity, and sickness special budget (Figure 1).

Tax payers – entrepreneurs, businessmen, performers of economic activity (employers), and other persons – pay taxes, duties, and other fees, assessed in accordance with the procedure stipulated in legal acts, to the Treasury.

In accordance with the law "On State Social Insurance" (1997), an employer shall calculate a

mandatory contribution to be made for each employee from the object of contributions and pay it to a special budget account.

The object of mandatory contributions of an employer and employee is all calculated employment income from which personal income tax has to be deducted without deducting the non-taxable income, tax concessions, and eligible expenses for which the taxpayer has the right to reduce the taxable income. The object of mandatory contributions of a self-employed person is the freely selected income from the production of goods,

Table 1

Rates of state mandatory social insurance contributions for certain categories of taxpayers in Latvia in 2001-2011, %

Status of socially insured person	2001	2003	2009	2010	2011
Employees as well as domestic employees employed by a foreign employer who are insured for all types of social insurance. <i>Total rate</i>	35.09	33.09	33.09	33.09	35.09
	<i>Rate for employers</i>	26.09	24.09	24.09	24.09
	<i>Rate for employees</i>	9.00	9.00	9.00	9.00
Employees as well as domestic employees employed by a foreign employer who has reached the age of retirement. <i>Total rate</i>	28.26	27.01	28.30	25.94	29.36
	<i>Rate for employers</i>	21.02	19.67	20.60	18.88
	<i>Rate for employees</i>	7.24	7.34	7.70	7.06
Self-employed persons	32.1	30.27	30.48	28.17	31.52
Self-employed persons having reached the age of retirement	28.17	26.92	28.04	25.65	29.05
Natural entities who manage a real estate	-	28.09	25.24	24.13	27.98
Foreign employees employed by a foreign employer	32.8	31.06	31.13	28.99	32.22

Source: authors' construction based on the Cabinet Regulations No. 452, 613, 1027, 1557, 1199

performance of work, provision of services, creative and professional activity, and other income from economic activity. The minimum amount of the object of mandatory contributions was LVL 200 a month in 2011.

State mandatory social insurance contributions calculated and paid compose revenues of the state social insurance special budget.

Voluntary contributions to pension insurance, dividends from capital shares transferred to the state pension special budget and revenues from the sale thereof and other revenues compose this budget's revenues in addition to mandatory contributions.

Considering the economic situation in the country, the Cabinet of Ministers sets rates of state mandatory social insurance contributions every year for respective categories of socially insured persons (Table 1).

In general case, if an employee had been insured for all types of social insurance, the mandatory contribution rate was constant, i.e. 33.09% from 2003 to 2011 (Mistre B., Dobele A., 2010).

For the other categories of socially insured persons, who are not insured for all types of social insurance, mandatory contribution rates are lower and changeable.

The overall distribution of mandatory contribution rate by type of social insurance affects changes in the mandatory contribution rates for the other categories of taxpayers.

Yet, the economic and demographic situation in the country determines the overall distribution of the mandatory contribution rate by type of social insurance.

To retain the social insurance system in a long-term, the rate for employees was significantly increased (by 2 percentage points) in 2011, while the rate for employers was kept at the level of previous years, i.e. 24.09%. Therefore, in general case, the total mandatory contribution rate was 35.09% in 2011.

The mandatory contribution rates for other socially insured persons also significantly rose in 2011, which was related with an increase in the mandatory contribution rate in general case.

The increase in the mandatory contribution rate was necessary to finance pensions and other social insurance services, as the number of employed individuals and their income significantly declined due to the economic crisis, thus, the revenues in the special budget decreased.

In accordance with the law "On State Social Insurance" (1997), the Treasury credits accounts of the special budget with mandatory contributions every day in accordance with a special budget revenue proportion stipulated in an annual state budget law.

Social insurance services are financed from the state special budget for old age pensions only in accordance with the law "On State Pensions", except disability pensions, and administrative expenses of this budget are also covered from it. From the employment special budget, social insurance services and administrative expenses of this budget are financed in accordance with the law "On Unemployment Insurance". From the job injury special budget, social insurance services and administrative expenses of this budget are financed in accordance with the law "On Compulsory Social Insurance in Respect of Accidents at Work and Occupational Diseases". From the disability, maternity and sickness special budget, social insurance services as well as disability pensions and administrative expenses of this budget may be financed only in accordance with the law "On Maternity and Sickness Insurance" (On State Social Insurance, 1997).

Appropriations from the special budget cover only expenses that do not exceed real revenues, a budget surplus at the beginning of a fiscal year, and borrowed funds from the central government basic budget. All appropriations become invalid at the end of a financial year.

An annual state budget law is designed in a way that if revenues and a budget surplus of previous years in any special budget do not cover expenditures of an annual budget while there is a budget surplus in another special budget, funds are redistributed to cover this deficit when calculating the revenue proportion for each special budget. If expected special budget revenues exceed

Table 2

Proportion of expenditures on social insurance and state social benefits in GDP in Latvia in 2002-2010, mln LVL

Year	GDP (current prices)	Social insurance	% of GDP	State social benefits	% of GDP
2002	5758.3	508.4	8.8	62.3	1.1
2003	6392.8	516.3	8.1	69.2	1.1
2004	7434.5	577.3	7.8	73.7	1.0
2005	9059.1	645.7	7.1	89.4	1.0
2006	11171.7	770.8	6.9	98.4	0.9
2007	14779.8	891.5	6.0	123	0.8
2008	16188.2	1192.2	7.4	134.3	0.8
2009	13082.8	1439.6	11.0	142.3	1.1
2010	12735.9	1492.7	11.7	148.6	1.2

Source: authors' calculations based on the CSB and Treasury data

expenditures, according to an annual state budget law, funds redistributed among the special budgets are related to the proportion of special budget revenues by taking into consideration the changes made in the proportion of revenues during the previous years, thus, providing the necessary funding (On State Social Insurance, 1997).

After analysing the system of financing social transfers, one can define the key factors that affect revenues and expenditures of the state social insurance special budget; they are wage subject to state social insurance contributions and number of socially insured persons.

2. Analysis of the state social insurance special budget

To assess the role of the state social insurance special budget in Latvia, it is important to identify the proportions of expenditures on state social insurance and state social benefits in the GDP of Latvia (Table 2).

Table 2 data show that the GDP grew in the period of 2002-2008, which may be explained by the fact that economic growth was observed in the country. The expenditures on social insurance increased during this period, as the average amounts of social insurance pensions and benefits rose (Mistre B., Muska A., 2011). However, the proportion of expenditures on state social insurance in GDP declined by 2.8 percentage points in the period of 2002-2008.

An economic crisis began in 2008, which caused a GDP decrease and an increase in expenditures on social insurance. The increase in expenditures on social insurance may be explained by an increase in unemployment in the country, which caused significant increases in the number of recipients of unemployment benefits as well as the average amount of such benefits. The increase in the average amount of unemployment benefits relates to an increase in wages, an increase and legalisation of employment as well as amendments made to Latvian legal enactments (Mistre B., Muska A., 2011).

On average, the proportion of state social benefits in GDP was 1% over the entire period of analysis.

The state social insurance special budget is analysed further in the research, as it is the main source for financing social transfers.

The basic principle of the system of social insurance is self-financing – expenditures on recipients of pensions and state social insurance benefits are covered from contributions made to the budget.

In the period of 2001-2008, the revenues and expenditures in the state social insurance special budget rose, and the increase of revenues was greater; in the result, an annual surplus was observed in the budget (Table 3).

The largest surplus in the social budget was recorded in 2007 – LVL 379.7 million, and it was the fastest increase in revenues of the state social insurance special budget; the revenues rose by LVL 311.8 million or 31.8% compared with the previous year.

The increase in revenues of the state social insurance special budget was natural, as the economic growth rate rose in the period of 2002-2007; simultaneously the performance of various government control institutions improved, the retirement age increased, the employment rate in the registered labour market rose. In addition, the number of working-age individuals increased, as individuals born in the 1980s when the demographic situation was favourable entered the labour market (Concept "On State Social ..., 2008).

Since 2009, the revenues of the social budget have started decreasing, whereas the expenditures have continued increasing sharply, and thus, an annual deficit has emerged. The decrease in social insurance revenues may be explained by the economic crisis in the country, which resulted in a significant decrease in the number of employed individuals and in labour income. The high unemployment rate and the sharp increase in wages during the previous years affected the increase in expenditures of the state social insurance special budget, thus, the amounts of benefits rose. Besides, the amount of newly granted pensions also increased due to the increase in wages during the previous years. The financing of parental benefits has also been transferred from the central government basic budget to the state social insurance special budget since 2008.

Table 3

Changes in the state social insurance special budget in Latvia in 2001-2010

Year	Revenues, mln LVL	Expenditures, mln LVL	Current year surplus/ deficit, mln LVL	Annual increase rate, %	
				Revenues	Expenditures
2001	489.5	498.7	-9.2	-	-
2002	536.6	534.9	1.7	9.6	7.3
2003	578.9	560.6	18.3	7.9	4.8
2004	658.0	606.8	51.2	13.7	8.2
2005	769.3	678.1	91.2	16.9	11.8
2006	980.3	798.5	181.8	27.4	17.8
2007	1292.1	912.4	379.7	31.8	14.3
2008	1441.1	1213.8	227.3	11.5	33.0
2009	1248.5	1461.5	-213.0	-13.4	20.4
2010	1178.1	1513.9	-335.8	-5.6	3.6

Source: authors' calculations based on the Treasury data

Table 4

Correlation coefficients for the factors affecting the state social insurance special budget in Latvia in 2002-2010

Indicators	Special budget revenues	Special budget expenditures
Number of socially insured persons	0.74	0.25
Socially insured persons' average wage subject to social contributions	0.92	0.92

Source: authors' calculations based on the CSB and SSIA data

3. Analysis of the socio-economic factors affecting the state social insurance special budget

A correlation analysis was conducted and correlation coefficients were calculated to identify effects of the number of socially insured persons in the country and the average wage subject to social contributions of socially insured persons on the revenues and expenditures of the state social insurance special budget (Table 4).

The correlation analysis showed that there was a strong causal relationship between the revenues of the special budget and the average wage subject to social contributions of socially insured persons. A medium strong relationship existed between the number of socially insured persons and the revenues of the special budget.

A correlation analysis was conducted between the revenues of the special budget and the number of socially insured persons and the average wage subject to social contributions of socially insured persons. The calculation showed that there was a strong relationship between the average wage subject to social contributions of socially insured persons and the revenues of the special budget. However, the number of socially insured persons did not affect the revenues of the special budget, as the correlation coefficient was very low ($r=0.25$).

After analysing the number of socially insured persons, one can conclude that it was volatile. In the period of 2002-2007, the number of socially insured persons tended to increase in Latvia, whereas this number started

sharply decreasing with the beginning of the economic crisis in 2008 (Figure 2).

In 2008 compared with 2007, the number of socially insured persons decreased by 11.2 thousand, while a decrease of 94.4 thousand was observed in 2009 compared with 2008. In 2010, the number of socially insured persons continued declining – by 82.2 thousand compared with 2009, which was a negative fact, as it affected the revenues of the special budget.

The number of socially insured persons significantly affects economic activity in the country. The number of socially insured persons has to rise with the increase in the number of employed individuals.

To find out whether such a causal relationship exists, a regression model was analysed:

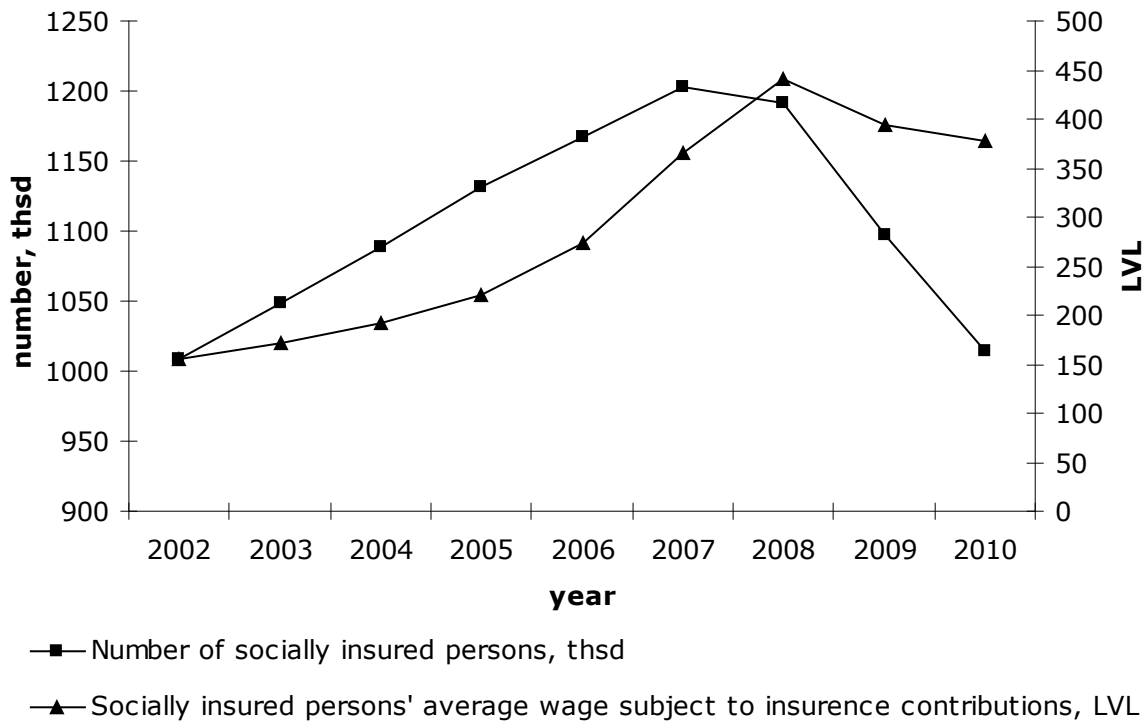
$$Y_i = \hat{\alpha}_0 + \hat{\alpha}_1 \cdot X_i + r_i, \quad (1)$$

where

- Y_i – number of socially insured persons;
- β_i – regression model parameters;
- X_i – number of employed persons;
- r_i – casual error.

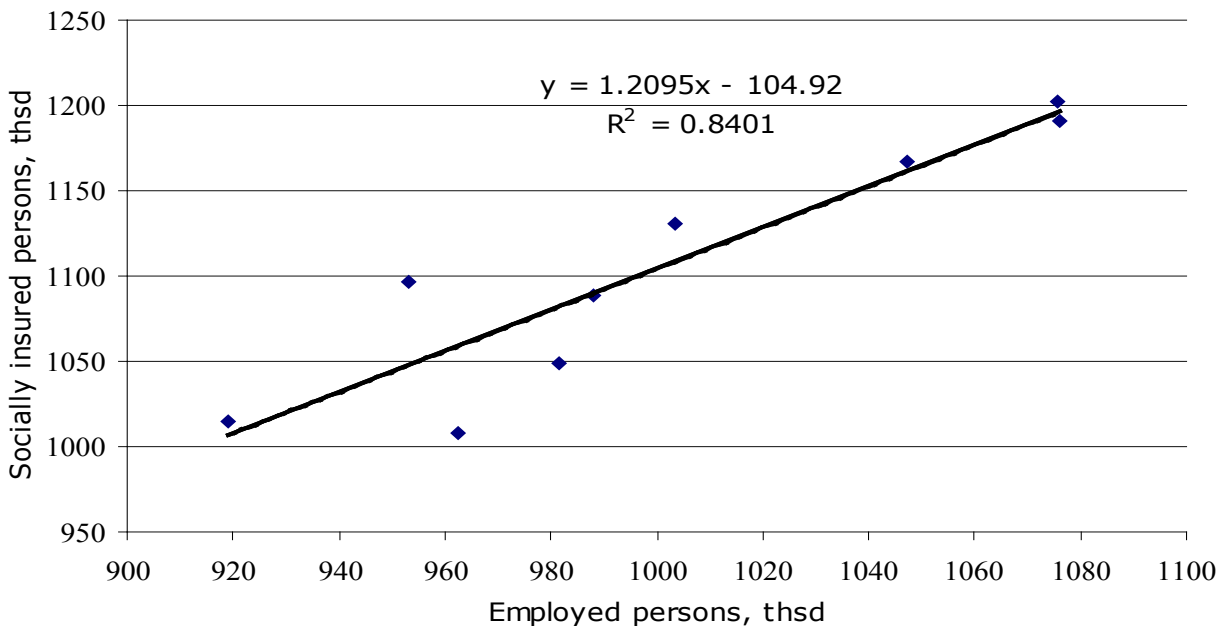
An analysis of the result produced by the above-described regression model is presented in Figure 3.

After analysing the regression model, presented in Figure 3, one can conclude that the number of socially insured persons rises faster than the number of employed individuals. The number of socially



Source: authors' construction based on the CSB and SSIA data

Fig. 2. Changes in the factors affecting the state social insurance special budget in Latvia in 2002-2010



Source: authors' construction based on the CSB and SSIA data

Fig. 3. Relationship between the number of employed persons and the number of socially insured persons in Latvia in 2002-2010

insured persons rises by 1.2 thousand on average with a 1 thousand increase in the number of employed individuals. The effect of the factor is significant with a probability of 95% (p-value = 0.000509). A faster increase in the number of socially insured persons may

be explained by the fact that socially insured persons are not only employed individuals but also their family members on whom voluntary social contributions may be paid if they are not subject to mandatory social insurance.

After analysing the changes in the average wage subject to social contributions of socially insured persons, one can conclude that the average wage tended to rise in the period from 2002 to 2008, which positively affected the revenues of the state social insurance special budget.

Although, the economic downturn started already in 2008, the average gross wage of employees and, in its turn, the average wage subject to social contributions of socially insured persons decreased but they did not fell as fast as the number of socially insured persons. The average wage subject to social contributions of socially insured persons decreased by LVL 46 or 10.5% in 2009 compared with 2008, while in 2010 it fell by another LVL 16 or 4% compared with 2009.

The correlation analysis showed that wages and their increase played a significant role in stabilising the state social insurance special budget and in social security in the country.

Conclusions

1. The determinant element of the system of financing social transfers is revenues of the state social insurance special budget.
2. There was an annual surplus in the state social insurance special budget in Latvia in the period of 2002-2008, whereas an annual deficit has emerged since 2009. Therefore, the amount of accrued funds in this budget has decreased. If such a trend continues, a situation might emerge that there would be a lack of funds for paying out social transfers.
3. The number of socially insured persons and the average wage subject to social contributions of socially insured persons significantly affect revenues of the state social insurance special budget. Yet, the average wage subject to social contributions of socially insured persons affects expenditures of the state social insurance special budget.

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Financing of Innovation System Development and Attraction of Private Capital

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Abstract. Each country is required to have a clearly formulated and detailed national strategy in the transition period for the purpose of management, stimulation, assessment and funding of innovative technology development process. A range of various funding sources includes private venture capital investments that have gradually formed the industry of private venture capital. The authors in their analysis and assessment of venture capital development trends focus on the analysis of external factors. The latest Silicon Valley Venture Capitalist Confidence Index 2011 Q4 confirms the attitude of private risk capital investors towards the expected changes in the venture capital market, since it shows a declining tendency and has returned to 3.27 points after a slight rise in 2010. On the present conditions of Latvia, the private venture capital should be analysed in a close connection with the entire innovative ecosystem, since the private venture capital is one of the main instruments of funding innovation projects.

The authors of the paper have analysed the environment and the factors that influence private venture capital investments in this sector.

Key words: venture capital, innovation, Latvia, venture capital funds, R&D expenditure, government policy.

JEL code: G24, G28, G32, F21, M13

Introduction

The economic development of a country is determined by geographic, demographic, and technological factors. The future of demographic situation of Latvia seems unfavourable, thus, Latvia has to focus on its convenient geographic situation and the development of technologies. Experts from the field of economics hold the view that the technological development is supported by promoting innovations, launching new production units, establishing and developing start-up companies, and combining the forces of both the government and entrepreneurs.

Innovation funding sources depend on the government's innovation policy, its priorities, and government support level. One of the sources of innovation funding is private venture capital.

The aim of the paper is to analyse the innovation environment and factors that might influence private venture capital investments in this sector.

The tasks are: 1) to characterise challenges that Latvia faces in relation with the requirements of the new (sixth) technological cycle in the commercialisation of research findings; and 2) to describe the private venture capital investment development level and its influencing factors, grouping them according to the areas of influence.

Data sources and research methods. The authors based their research on the innovation development index of Latvia and other EU Member States, and the comparative analysis of other indicators. An assessment of the level of innovation performance in Latvia was based on the methodology of the Innovation Union Scoreboard 2011 (IUS 2011) that includes 25 indicators. Reports of the European Commission, the IUS 2011 data compiled by

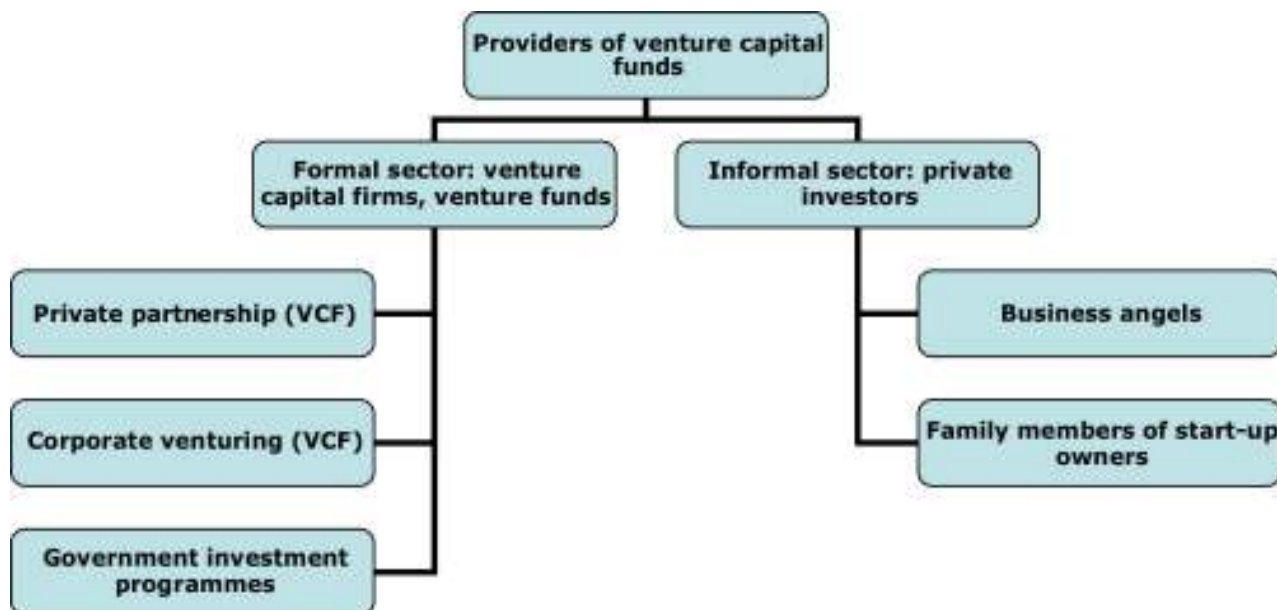
INNO METRICS, data from Latvia's CSB, the survey data obtained by Latvia's marketing public opinion research centre SKDS, expert interviews etc., and researches of scientists from the Baltic States regarding assessing and financing innovation performance were used as data sources. In addition, the opinions of the members of the Association of Latvia Private Investors, the publication of *Joseph Ghalbouni* and *Dominique Rousies* in the Harvard Business Review (2010) as well as published opinions and forecasts of several venture capital investment experts and Silicon Valley Venture Capitalist Confidence Index etc. were applied in the research.

Research results and discussion

Researchers from many countries consider that the transition to the new technological cycle has started being accompanied by profound structural economic changes. The 5th technological cycle, the driving force of which included microelectronics and many-faceted development of the ICT technologies, has been drained out giving the way to the 6th technological cycle. The new technological wave is characterised by rapid development of nanotechnologies (nanoelectronics, nanomaterials, nanotechnologies, nanometrology, nanobiotechnologies, artificial intellect, and development of alternative energies). Many countries set up innovation clusters to develop the potential of these industries, dominated by R&D centres, universities, and their research centres (Glazjev S., 2012). The commercialisation of new innovative ideas is possible only in the innovative business environment. The 4 Ps approach of the Marketing Mix is one of the models to be used in the analysis of implementation of innovative economics (Tidd J., Bessant J., 2010):

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Source: authors' construction

Fig. 1. Providers of venture capital funds and their legal organisation

'Product innovation'- changes in the things (products/services) that an organisation offers;

'Process innovation'- changes in the ways in which they are created and delivered;

'Position innovation' – changes in the context in which the products/services are introduced;

'Paradigm innovation'- changes in the underlying mental models, which frame what the organization does.

Each country is required to have a clearly formulated and detailed national strategy in the transition period for the purpose of management, stimulation, assessment, and funding of innovative technology development process. A range of various funding sources includes private venture capital investments that have gradually formed the industry of private venture capital.

Venture capital (VC) is a long-term risk capital that is invested in the rapidly growing share capital of a company with the purpose to increase the amount of the company's profit and the business value on the market, stimulating the large financial gains in the long-term period. The forms of investments are varied:

- an investor acquires the shares of the company in exchange of financial resources, and the source of income is the increase of the share value;
- medium-term investments are invested in the time period for 3-7 years;
- mixed-type investments, combining the above mentioned variants.

The expected internal rate of return (IRR) should achieve a sufficiently high level, since private venture capital investments have a high-risk level and they achieve the necessary amount (maturity) after several years (2-6 years). The "exit" from a company in the final stage is implemented by supplementing the initial shares (IPO) and selling the shares either on the national or international stock market or by selling the whole

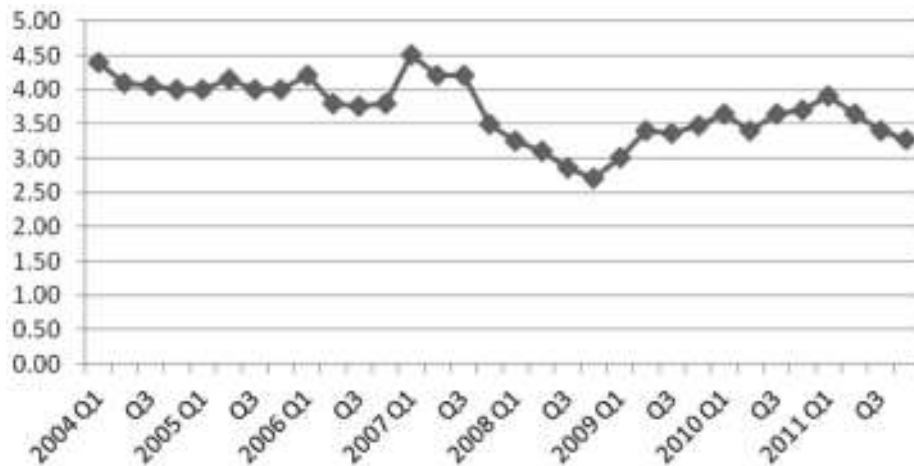
company. Venture capital could be offered in two types of sectors: formal and informal.

The 4 Ps (Product, Price, Place, Promotion) of the Marketing Mix influence greatly the development of venture capital industry. However, unfavourable business environment might hamper the development of innovative products.

The authors focused on the analysis of external factors of venture capital development trends. On a global scale, venture capital industry is having a decline. *Joseph Ghalbouni and Dominique Rousies* (Ghalbouni J., Rousies D., 2010) in their publication *Harvard Business Review* in October of 2010 analysed the reasons for rapid shrinking of venture capital investment industry, the internal structural changes of the industry, and development opportunities in the period of the past 10-18 years. They pointed to the significant changes in development trends that were reflected in the dynamics of such important indicators as Thomson Reuters, Dow Jones venturesource, and Cambridge associates LLC US venture capital index. The indicators characterising the industry dynamics included the number and volume of investment transactions, quarterly profitability, investment cycle, and sales (the exit of venture capital from the project). Several researchers (Josh Learner and William Kerra from Harvard Business School) have analysed activities and efficiency of venture capital. *Joseph Ghalbouni and Dominique Rousies* drew a conclusion that venture capital industry was in a deep crisis and its future was endangered.

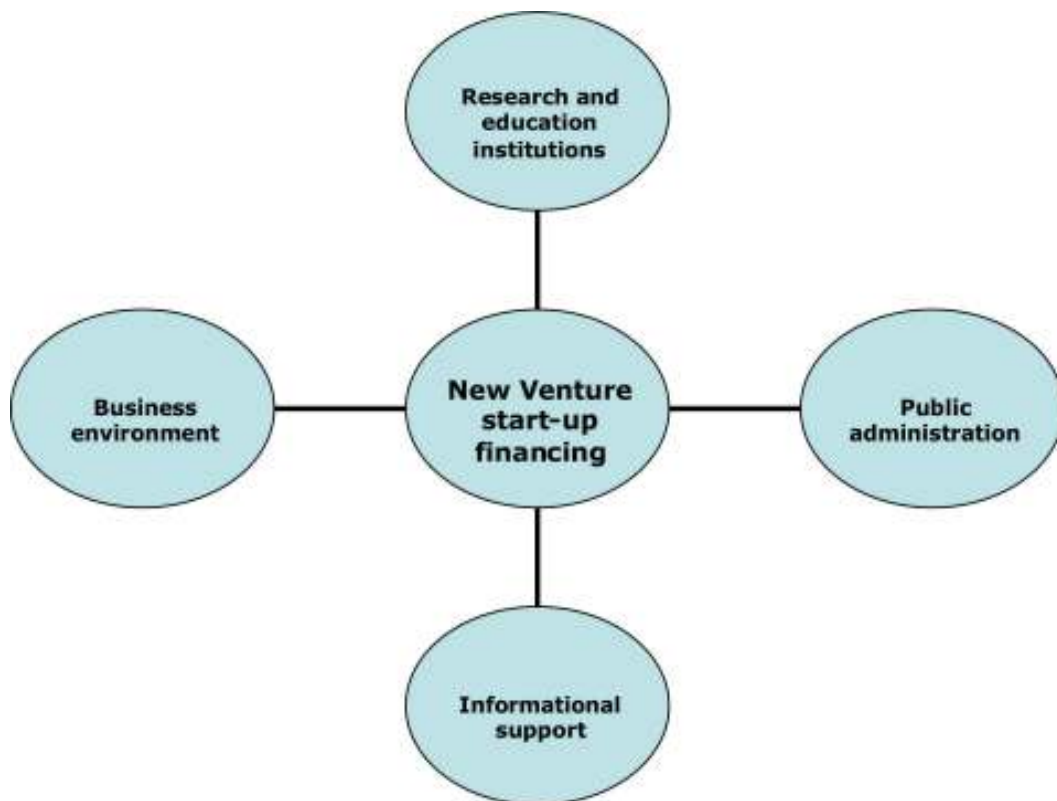
Likewise, the latest Silicon Valley Venture Capitalist Confidence Index 2011 Q4 confirms the attitude of private venture capital investors towards expected changes in the venture capital market (Figure 2). After a slight rise in 2010, it shows a declining tendency and has returned to 3.27 points (according to 5 points scale).

The Cabinet of Ministers of the Republic of Latvia has highlighted the "the economic breakthrough" in the



Source: authors' construction based on Cannice Mark V., 2011; Boslet M., 2012

Fig. 2. Quarterly trends of Silicon Valley Venture Capitalist Confidence Index



Source: authors' construction

Fig. 3. Factors influencing the development of a new venture company and venture capital financing

National Development Plan-2020 in order to provide a stable long-term development of the country (Nacionala attistibas plana., 2012). On the present conditions of Latvia, the private venture capital should be analysed in close connection with the whole innovative ecosystem, since the private venture capital is one of the main instruments of funding innovation projects.

The authors of the paper have analysed the environment and factors influencing innovations that affect private venture capital investments in this sector.

The factors influencing Latvia's venture capital industry development can be joined and structured in certain groups. Initially, forty factors were included in the analysis. Even though, some of them could be referred to

several groups, they were included purposefully only in one of the groups.

The factors were classified into four groups (Figure 3):

Group 1 – factors of public administration (all levels are covered from the EU to local government);

Group 2 – factors of business environment;

Group 3 – institutions of research and education;

Group 4 – informational support.

Public administration factors

The first one refers to the economic stimulation programme of investors. It includes “venture money” allocation for the project monitoring, auditing, the state participation with fixed interest rate and relevant tax policy, and the policy of allocating grants and subsidies that in many cases de-stimulates the attraction of private venture capital to various research and education branches.

There are neither governmental or private-state venture capital funds and financial companies, nor venture capital investment funds and investment banks of the national scale in Latvia. According to the data of Latvia Association of Venture Capital (AVC), applications to the venture capital funds are quite frequent. However, only approximately 5% of applications are granted. In 2011, venture capital funds invested in 10 projects, which is the largest investment amount in the recent years. J. Grisins, a chairman of Latvia AVC, considers that the most active are the following three venture capital funds: *Imprimatur Capital*, *Baltcap Management*, and *AB.LV Private Equity Management* as well as several associations of private investors: “*Zalas gaismas investicijas*” and several companies that do not offer investments but manage the existing investments (Grisins J., 2012). Besides, there is no state governance and coordinating institution that would concentrate on the issues of venture projects and attraction of investors.

The government does not reward and morally support the attainments of venture project achievements. The state has not set the policy, strategy, and short-term plans for the development of innovative start-up companies.

Up to now, there is no sufficient use of instruments in Latvia (in cooperation with other organisations and persons concerned) that would be oriented towards the creation of favourable environment for start-ups (technological parks for innovative projects and business incubators, advisory centres in these technological parks, loans on favourable terms for the development of high risk projects etc.) fostering the attraction of venture capital to the start-up development. Venture Capital foundation *Imprematur Capital* focuses on the new companies, thus, it offers seed capital to small businesses or sometimes only projects up to EUR 100,000; as regards *Baltcap Management*, it is looking for the companies with the planned funding of EUR 1–10 million (Grisins J., 2012). Yet, the government lacks one unified concept for the attraction of venture capital.

Business environment

The quantitative and qualitative indicators characterising private venture capital development refer to this group, e.g. the number of private venture capital (PVC) funds, the number of PVC investment companies and

business angels, which have a clear strategy on Latvia’s market; active participation of funding intermediaries and the support of the state, the availability of information on their activities and specialisation, opportunities of attracting projects in Latvia; the accessibility of start-up managers and specialists in the area of PVC investments; developed business culture and the application of examples of “best practice” in business that could serve as the basis for trust and willingness of potential investors to invest in the companies without gaining control over the company; the lack of information and practice on the opportunities to attract managers and lawyers (initially in exchange of shares), successful structuring of projects and attraction of investors; the dominating investment climate in the country, Europe and all over the world; economic openness and internationalisation of innovation that would attract start-ups from other countries; insufficient activity of associations including participants of PVC market; a small number of projects suitable for PVC investments; and insufficient knowledge of specialists in growing companies on PVC principles and funding process.

Research and education institutions

This group includes the following factors: insufficient understanding of researchers and inventors of the significance, aims, and objectives of attracting PVC funding to new startups; the research activities (the Academy of Science, its institutes, research institutes of universities etc.) are not aimed at the commercialisation of the research findings, this aspect is neglected assessing the research results; the education process of students of technical specialities does not motivate students to participate in innovative projects, and these universities have not established a close link (in the form of research centres) for the purpose of commercialising these innovative ideas; universities do not train high level professionals, managers for innovation commercialisation, and venture companies; for the period of 10 years, there are very few publications and only some defended PhD theses regarding the issues of PVC, besides, only few funding aspects are touched upon in connection with the government support; the redistribution of the budget within the existing resources, allocating finances for research activities, focusing on those areas in which results of business research might be commercialised in short term, the increase of funding for the research; the close link between research areas and higher education process, close cooperation with research institutions that could serve as premises for the commercialisation and implementation of research results as well as active establishment of research centres at universities promoting and commercialising innovative ideas, students of engineering and business specialities are involved in the development and processes of private venture capital industry.

Informational support

The most significant factors in the group of informational support contain the database of start-ups; centralised and available information on PVC funds, business angel clubs, and networks that would be potential investors in Latvia’s innovative projects; coordination and information on the promotion of contacts

Table 1

Investment elements included in Innovation Union Scoreboard 2011

ENABLERS	EU27	EE	LV	LT	FI	SE
Finance and Support						
R&D expenditure in the public sector	0.76	0.79	0.38	0.56	1.10	1.07
Venture capital	0.095	N/A	N/A	N/A	0.145	0.212
FIRM INVESTMENTS						
R&D expenditure in the business sector	1.23	0.81	0.22	0.23	2.35	2.35
Non-R&D innovation expenditure	0.71	1.77	1.20	0.76	0.57	0.74

Source: authors' construction based on Innovation Union Scoreboard 2011 (IUS 2011)

among investors and start-ups, conferences, business forums, and other innovation forums (*Kommercialization reaktors, SEED forums* etc.), the activities arranged by Latvia Innovation Development Agency *Connekt Latvija*, and conferences for professionals in PVC industry development issues. In addition to the above mentioned factors, some factors could be included from the group of business environment: award system and promotion of venture capital achievements by the government, and the availability of information of intermediaries and specialisation areas with the purpose of active attraction of PVC to projects in Latvia.

Latvia has not yet provided the information regarding venture capital investments (Table 1) for the EU innovation index Innovation Union Scoreboard 2011 (IUS, 2011). The statistic information of the section "Finance and Support" of the index includes 1.3.2 – Venture capital (early stage, expansion, and replacement) as share of GDP (Eurostat). The index lacks data from Lithuania and Estonia, either. A regular collection of the statistical data would be useful for the comparison on the international level and the assessment of the dynamics in this country. In 2011, venture capital investments in Finland were 1.5 times higher than in the EU-27 on average, while in Sweden – 2.2 times higher.

The priorities of the National Development Plan of Latvia state that the focus for the period of 2014-2020 will be laid on "the economic breakthrough" (*Nacionala attistibas plana.*, 2012). One of the most significant preconditions for its implementation is the national strategy of innovative economics including management, stimulation, and analysis of the development processes of innovative technologies in addition to the selection of a relevant funding model.

Conclusions, proposals, recommendations

- Several approaches can be applied to the selection of venture capital development influencing factors. The present research classified 40 randomly chosen factors into 4 groups that, in the authors' opinion, significantly influence the development of Latvia's venture capital industry and innovation development.
- One of the most significant factor influencing venture capital ecosystem is the availability of high level specialists that understand venture capital long-term development trends in the world, and are able to assess the level of venture capital development

in Latvia (strengths, resources, traditions, opportunities, specifics of technology transfer, technology commercialisation), so that knowledge would serve as the basis for creating innovative development plan of Latvia, its management, and funding.

- It is necessary to start the education of high-level specialists in the area of technology transfer and venture capital funding (initially attracting those from countries with more experience). Meanwhile, cooperation should be activated and coordinated between science and education, governmental, and research and other organisations involved in the innovation promotion.
- The analysis of the groups of most significant factors shows that the majority does not demand money investments, thus, a conclusion can be made that it is possible to strengthen and activate venture capital development in Latvia with relatively small financial resources.
- Venture capital industry is insufficiently positioned in the National Development plan of Latvia, the concepts of the development of economy and other documents creating difficulties for the development of promotion, marketing, and other instruments in this sector.

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Factors Influencing Productivity of Tangible Fixed Assets in Dairy Cooperatives in Poland

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Abstract. The paper presents determining factors influencing productivity of tangible fixed assets with respect to dairy cooperatives in Poland. The research period covered the years 2004-2009. Empirical data show that Current Ratio and short-term liabilities-to-total assets-ratio have affected positively the analysed productivity. The model that was built by means of MARSSplines non-parametric regression indicated the positive role of supplementary fund as the potential stimulant for the investigated economic indicator. Maintaining the proper capital structure may be positive in the context of improving productivity of tangible fixed assets. Results based on MARSSplines non-parametric regression can be a prerequisite for an alternative use (in addition to the classical regression models) for describing intricate and often complex dependencies between financial ratios.

Key words: productivity, tangible fixed assets, dairy cooperative.

JEL code: Q13,Q14.

Introduction

All economic organisations possess and use tangible fixed assets (TFA), regardless of their size and their activity. TFA play a significant role as the carrier of innovativeness for the entities representing industrial sectors. The effectiveness of economic organisation is determined by the level of provision of TFA and its rational usage in the production processes (Mykolaitiene V. et al., 2010). TFA are the essential carrier of the production capacity of each enterprise. Moreover, business management should put an emphasis on reasonable utilisation of TFA in accordance with their intended use (Bartosinska D., 2001). Enterprises should take care of the utmost possible use of TFA as the key factor influencing economic effectiveness of business activity. From the perspective of managers, it is necessary to reveal hidden reserves of productive capacity and select the best methods of utilisation of surplus production capacity (Wasilewski M., Zabadala P., 2011). The overall situation as for effectiveness of TFA management is depicted by the indicator of productivity. These indicators show the relationship between the equipment in TFA and production results. Profitability of TFA is regarded as the most synthetic indicator for assessing effectiveness of usage of this asset component. In practice, financial analysts use the indicator of the productivity of fixed assets, which equals the ratio of production in the analysed period to the value of TFA. This indicator is more preferable because of the fact that the net profit/loss of the economic entity depends on the set of many factors (often beyond the control of the enterprise) (Nebl Th., 2002).

The peculiarity of management of TFA regards to differences between the valuation of productivity of TFA according to microeconomics (theory of production) and according to accounting and reporting rules (including depreciation). Some aspects of measurement of productivity of TFA can seem to be slightly paradoxical, namely, even completely depreciated equipment can be characterised by the high level of productivity (in terms of microeconomics). Productivity of TFA in dairy

cooperatives is influenced by many various factors, noting the complex aspects of shareholders' fund policy in cooperatives (more: Dworniak J., 2010) and the fundamental economic aim of the cooperative - taking care of interests of their members (Pietrzak M., 2006). The problem of determining factors that influence productivity of TFA has become more important from the standpoint of the financial and economic situation of Polish dairy cooperatives that benefited and benefit from the EU pre- and post-accession EU financial aid (inter alia, pre-accession "SAPARD" Fund, post-accession "Innovative Economy" Programme).

Aim, methodology and scope of research

The primary aim of research was to determine factors influencing profitability of TFA in dairy cooperatives in Poland, and to build regression models describing profitability of TFA.

The following tasks were undertaken in the framework of the research: (i) extraction of factors (concerning own funds, financial liquidity, and structure of current assets / liabilities) determining the productivity of TFA in dairy cooperatives; and (ii) building models describing the productivity of TFA (classical linear regression, non-parametric regression).

Two hypotheses have been proposed in the study, and then tested:

H1: The shareholders' and supplementary funds positively affect the productivity of TFA in dairy cooperatives.

H2: A rise in financial liquidity increases the productivity of TFA in dairy cooperatives.

The research period covered the years 2004 - 2009. The research objects represent the sector of dairy cooperatives. Sixty-six dairy cooperatives have continuously published financial statements in Cooperative Monitor B during the analysed period. Those cooperatives operated as independent entities at the date of 10 January 2011. The research group includes entities benefiting from the diverse sources of funding for TFA as

Table 1

Set of independent variables used for the model of multiple regression

Designation	Description of variables
Structure of funds	
x ₁	Own funds / total liabilities [in multiplicities]
x ₂	Shareholders' fund / own funds [in multiplicities]
x ₃	Supplementary fund / own funds [in multiplicities]
Financial liquidity	
x ₄	Current Ratio [in multiplicities]
x ₅	Quick Ratio [in multiplicities]
x ₆	Cash Ratio [in multiplicities]
Relations concerning liabilities/ currents assets	
x ₇	Short-term liabilities / total assets [in multiplicities]
x ₈	Long-term liabilities / total assets [in multiplicities]
x ₉	Inventories / currents assets [in multiplicities]
x ₁₀	Short-term accounts receivable / current assets [in multiplicities]
x ₁₁	Cash / current assets [in multiplicities]

Source: author's construction

Table 2

Descriptive statistics for variables used for the model

Variables	Average	Median	Minimum	Maximum	SD
y	4.57	4.21	0.00	11.83	2.42
x ₁	1.13	1.08	0.24	2.55	0.45
x ₂	0.46	0.47	0.00	0.95	0.17
x ₃	0.36	0.34	0.00	0.83	0.15
x ₄	1.45	1.40	0.48	2.95	0.46
x ₅	1.04	1.01	0.39	2.10	0.37
x ₆	0.23	0.14	0.00	0.99	0.25
x ₇	0.34	0.33	0.13	0.53	0.09
x ₈	0.08	0.07	0.00	0.28	0.07
x ₉	0.28	0.28	0.07	0.61	0.11
x ₁₀	0.56	0.54	0.19	0.93	0.13
x ₁₁	0.14	0.12	0.00	0.52	0.13

Source: author's calculations

well as characterised by the large scale of production. The analysed group of cooperatives covered more than 80% of assets and 75% of milk processed by Polish cooperative dairy sector.

The multiple linear regression was used as the tool for investigating the impact of selected factors influencing productivity of TFA in dairy cooperatives. Potential variables determining productivity of TFA were chosen based on the scientific literature (Pietrzak M., 2006; Pisarska A., 2009; Dworniak J., 2010). The correctness of selection of variables was verified using the analysis of correlation coefficients between variables.

The so-called method of stepwise regression leads to selecting the best suitable explanatory variables in the model. Independent variables are sequentially added to the model. In the first step, the explanatory variable,

which is most strongly correlated with the dependent variable and is characterised by significant parameters is chosen. Then, the second explanatory variable, the values of which are most strongly correlated with the residues of the first step, is selected. Hence, the extended model is characterised by the significance of all parameters. Next, the statistical significance of the coefficients of determination is also tested. The procedure is completed when adding a new variable into the equation model leads to lowering significance of parameters or coefficient of determination (Weiers R., 2010).

Table 1 shows the set of independent variables used for explanation of productivity of TFA (Y). The dependant variable is calculated as the ratio of net revenues from sales of products to the value of TFA (as an average from beginning and end of the reporting period). Independent

	Y	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
Y	1,000	-0,032	0,029	-0,071	0,155	0,142	0,085	0,142	-0,094	-0,001	-0,102	0,094
X1	-0,032	1,000	-0,101	0,071	0,651	0,599	0,487	-0,678	-0,540	-0,035	-0,375	0,443
X2	0,029	-0,101	1,000	-0,539	-0,046	0,018	0,006	0,093	0,081	-0,165	0,158	-0,011
X3	-0,071	0,071	-0,539	1,000	0,214	0,193	0,155	-0,220	-0,045	-0,019	-0,099	0,112
X4	0,155	0,651	-0,046	0,214	1,000	0,869	0,653	-0,721	-0,266	-0,024	-0,509	0,547
X5	0,142	0,599	0,018	0,193	0,869	1,000	0,745	-0,592	-0,327	-0,490	-0,260	0,689
X6	0,085	0,487	0,006	0,155	0,653	0,745	1,000	-0,408	-0,382	-0,348	-0,575	0,875
X7	0,142	-0,678	0,093	-0,220	-0,721	-0,592	-0,408	1,000	0,043	-0,056	0,362	-0,345
X8	-0,094	-0,540	0,081	-0,045	-0,266	-0,327	-0,382	0,043	1,000	0,141	0,238	-0,389
X9	-0,001	-0,035	-0,165	-0,019	-0,024	-0,490	-0,348	-0,056	0,141	1,000	-0,439	-0,415
X10	-0,102	-0,375	0,158	-0,099	-0,509	-0,260	-0,575	0,362	0,238	-0,439	1,000	-0,608
X11	0,094	0,443	-0,011	0,112	0,547	0,689	0,875	-0,345	-0,389	-0,415	-0,608	1,000

Source: author's calculations in STATISTICA 9.1 (screenshot)

Fig. 1. Correlation coefficients between variables used for the model

variables (from x_1 to x_{11}) might be divided into three subsets (concerning the structure of funds, financial liquidity, and relations concerning liabilities / current assets).

The variable x_2 refer to the significant role of shareholders' fund because the increase of this fund can lead to quicker restructuring of dairy cooperative (Dworniak J., 2010). The subset covering x_4 - x_6 regards financial liquidity treated as liquidity indicators¹ on the "safe" level, typical of the specific sector. The last subsets cover the relations that depict the structure of liabilities and current assets. All explanatory variables are expressed in multiplicities.

The alternative method for the multiple linear regression is a nonparametric method, the so-called Multivariate Adaptive Regression Splines (MARSplines, MARS)². According to Statsoft (2012), MARSplines is a nonparametric regression procedure that makes no assumption about the functional relationship between the dependent and independent variables. The essence of MARSplines lies in constructing the relation from a set of coefficients and base functions that are selected from the regression data. MARSplines is particularly suitable for problems with higher input dimensions (i.e. with more than 2 variables), where the curse of dimensionality would likely create problems for other techniques, especially, classical methods of linear regression.

Research results and discussion

Basic descriptive statistics of variables used in the model are shown in Table 2, whereas, correlation coefficients between variables are presented in Figure 1.

In the population of dairy cooperatives, there was a strong variation in the level of productivity of TFA (from 0.00 to 11.83). Half of the cooperatives were characterised by the productivity lower than 4.21, close to the average describing the population. Empirical levels of productivity of TFA differed from the average productivity by about ± 2.42 . The analysis of the correlation matrix (with outlined statistically significant correlation coefficients) indicates a statistically significant positive impact of current ratio (x_4), quick ratio (x_5), and the share of short-term-liabilities in total assets (x_7). It should be noted that the rest of explanatory variables were not significantly correlated

with the dependent variable (productivity of TFA). The strong correlation of variables (Current Ratio and Cash Ratio, Current Ratio and Quick Ratio) was also observed.

The average Current Ratio Level was 1.45, whereas, the average Quick Ratio Level - 1.04. Both indicators of financial liquidity may be characterised by a strong variations. Current Ratio fluctuated between 0.48 and 2.95, whereas, Quick Ratio: between 0.39 and 2.10. In dairy cooperatives, empirical levels of financial liquidity differed from the average levels - Current Ratio by 0.46 and Quick Ratio by 0.47 respectively.

The average level of the ratio of short-term relationship liabilities to total assets reached 0.34. The level of analysed ratio has ranged from 0.13 to 0.53 in dairy cooperatives. In addition, this ratio was higher than 0.33 in half of the population. Moreover, empirical levels of short-term liabilities-to-total assets ratio differed from the average level of x_7 by 0.09.

Results of estimation of parameters for the model (including all explanatory variables) describing the impact of selected factors on productivity of TFA are presented in Table 3. Analysis of the results of estimation of parameters of the basic model parameters indicates a statistically significant impact of two variables: x_4 (Current Ratio) and x_7 (short-term liabilities / total assets). Moreover, the impact of the first variable underlines the importance of maintaining financial liquidity (expressed by the level of Current Ratio) in the normative range for the sector. The proper asset structure (mainly the relation of current assets to tangible fixed assets) may stimulate an increase in effectiveness of asset management. Entities characterised by conservative liquidity strategy as well as having the tendency to maintain an excess financial liquidity, generated easily net revenues from sales of products. In contrast, a low book value of TFA, combined with the high value of net revenues, could lead to raising the level of productivity of TFA.

The share of short-term liabilities in total assets appeared as the second explanatory variable. According to modern theories concerning capital structure in enterprises, it is strongly recommended to raise the share of liabilities (to some extent) that are characterised by lower cost than structural components of equity.

¹ Current Ratio = Current Assets/ Current Liabilities; Quick Ratio = (Current Assets - Inventories)/ Current Liabilities; Cash Ratio = Short-term Investments/ Current Liabilities (Loth R., 2012).

² MARS Splines method belongs to the group of Data Mining techniques.

Table 3

Impact of selected variables on the productivity of TFA: panel model

	Estimated coefficients	Standard error	T-statistics	p-value
Constant	-4.6650	1.26	-3.72	0.0002
X_{4*}	3.2528	0.47	6.94	0.0000
X_{7*}	14.9417	2.07	7.23	0.0000
X_3	-1.0994	0.83	-1.33	0.1854
X_6	-1.8410	1.15	-1.61	0.1093
X_{11}	2.0848	1.94	1.08	0.2822
R-square	0.1710	Standard error of estimation	2.2168	
Adjusted R-square	0.1583	F-statistics	13.449	

Source: author's calculations

Table 4

Impact of selected variables on the productivity of TFA: panel model

Description	y
Average (observed)	4.57
SD (observed)	2.42
Average (predicted)	4.57
SD (predicted)	1.38
Average (residuals)	0.00
SD (predicted)	1.98
R-square	0.3257
Adjusted R-square	0.3025

Source: author's calculations

Table 5

Parameters of modelling - MARSSplines

Description	y
Value of penalty	2.00
Threshold	0.0005
GCV Error	4.4731
Trimming the least significant variables	Enabled

Source: author's calculations

It is worth noting that model (at the 5% significance level) describes only 17.1% of the variability of productivity of TFA. This may be due to the complexity of factors describing net revenues from sales of products, also a considerable variation in the accounting policy for tangible fixed assets in the dairy cooperatives.

The results from application of *MARSSplines* method are presented in Table 4.

STATISTICA 9.1 built 10 base functions. Five of eleven independent variables (x_2 , x_3 , x_4 , x_7 , x_9) were used as significant factor explaining productivity of TFA. Table 5 shows other parameters of modelling by means of *MARSSplines* method.

It should be noted that there was an improvement as for the level of R-square. In the case of classical

multiple regression this parameter reached 0.1710, while modelling of dependencies by means of non-parametric regression, allows raising the level of R-square (R-square was 0.3257). This indicates that modelling by means of *MARSSplines* may help explain 32.57% of the variation of the dependant variable: productivity of TFA.

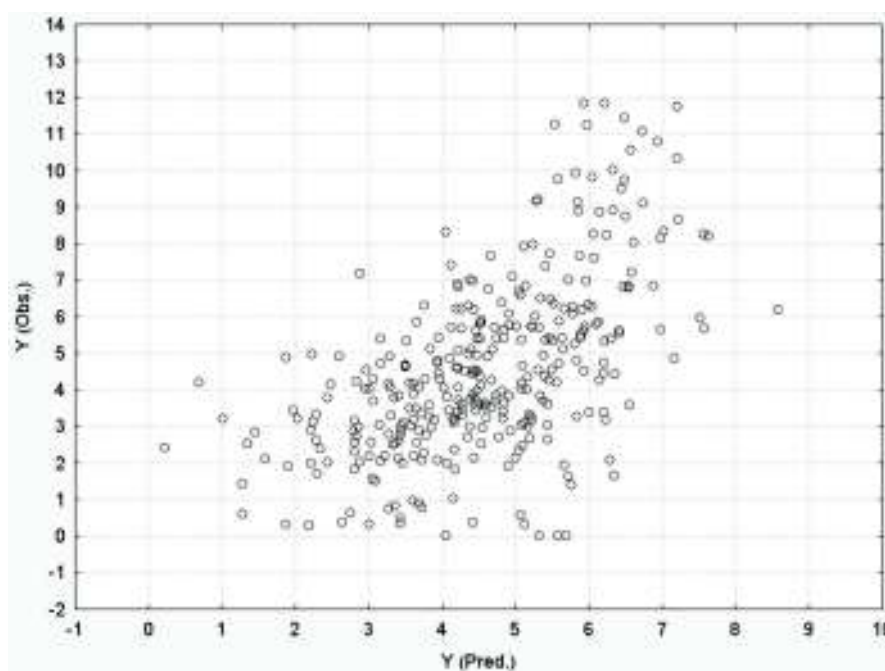
It should be noted that the implementation non-parametric regression enabled exploiting up to 5 variables. The *MARSSplines* regression model used two variables that were also significant in the classical multiple linear regression (x_4 , x_7).

The complex regression equation is shown in Figure 2. This indicates some intervals characterised by various base functions accepted by the algorithm.

$$Y = 1.68401763977268e+000 + 7.51734008122576e+000 * \max(0; X7 - 3.01737480141621e-001) - 3.77384222295297e+001 * \max(0; 3.01737480141621e-001 - X7) + 3.58525678393210e+000 * \max(0; X4 - 4.83304418090643e-001) - 1.30376843808996e+002 * \max(0; X3 - 5.14903680487157e-001) + 3.82661958395429e+000 * \max(0; X2 - 5.45683907010272e-001) - 2.57287445291785e+001 * \max(0; 1.53205456245919e-001 - X9) + 1.40795035926849e+002 * \max(0; X3 - 5.38111863533051e-001) + 1.82626235996917e+001 * \max(0; X3 - 3.30609413595912e-001) - 7.17327292331333e+000 * \max(0; X3 - 2.19745728671381e-001) - 3.91293969470539e+001 * \max(0; X3 - 6.03835653037881e-001)$$

Source: author's calculations (computation by STATISTICA 9.1)

Fig. 2. Regression equation - MARSSplines



Source: author's construction (computation by STATISTICA 9.1)

Fig. 2. Graph of observed and predicted values - MARSSplines

The graph depicting the observed values as a function of the value predicted by the model can be treated as the visual tool for evaluating fitting the model. The graph (Figure 3) shows relatively correct correspondence between observed and predicted values (the points indicating observations are arranged approximately along the line, described by the equation $y = x$).

Conclusions

1. Productivity of tangible fixed assets in dairy cooperatives is influenced by many various factors including the complex aspects of shareholders' fund policy in cooperatives and the fundamental economic aim of the cooperative - taking care of interests of their members. The problem of determining factors that influence the productivity of TFA has become more important because of transformation concerning the financial and economic situation of Polish dairy cooperatives, which benefited and benefit from the EU pre- and post-accession EU financial aid.
2. Empirical evidence from 396 observations of dairy cooperatives over the period of years between 2004 and 2009 supports that financial liquidity is significantly linked to the productivity of TFA. The model of classical regression (based on the stepwise method) indicates that the level of Current Ratio was the stimulant for productivity of TFA.
3. The hypothesis that the shareholders' and supplementary funds positively affect the productivity of TFA in dairy cooperatives was rejected in the model of classical multiple linear regression. Variables concerning structure of own funds were statistically insignificant. *MARSSplines* regression model indicated the significant role of the supplementary fund as the potential stimulant of productivity of TFA.
4. The ratio of short-term liabilities to total assets positively affected the productivity of TFA. This leads to the conclusion that taking care of proper capital structure (according to modern theories of corporate finance) may improve an effectiveness of TFA management.
5. The regression model built by means of the *MARSSplines* method was characterised by higher level of R-square and better correspondence between observed and predicted value. This implicates potential possibility of using the *MARSSplines* method as "the alternative" for the classical regression.

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Application of Immovable Property Tax in The EU Baltic Sea Region Countries

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Abstract. The Baltic Sea Region is continuously developing as one of the economically most prosperous and dynamic regions, and a centre of new global economy. Assessment of tax policy of a certain country is a core issue for an entrepreneur prior to starting business in the EU Baltic Sea Region or cooperation with any of the countries located in the particular region. Tax policy is one of the indicators of the state competitiveness and economic development that help potential investors assess the fiscal stability of the country. The research aim is to analyse the tax burden and structure in the EU Baltic Sea Region countries and to assess the peculiarities for application of immovable property tax. The research leads to the conclusion that objects taxable with immovable property tax, tax rates and procedure for setting tax rates significantly differ in the EU Baltic Sea Region member states. Immovable property tax is determined consistent with the policy, priorities, and development targets of each country. Hence, the EU Baltic Sea Region countries have also different tax systems - tax burden coincides with the economic potential of a country, i.e. a heavier tax burden corresponds to a larger GDP amount per capita. Tax structure varies between direct and indirect taxes. Countries encountering a larger share of the shadow economy (Latvia, Poland, Lithuania, Estonia) have a larger share of indirect taxes, while countries encountering a smaller share of the shadow economy (Denmark, Sweden, Finland) have a larger share of direct taxes. The research concludes that in the future, tax burden in Latvia, Lithuania, Estonia, and Poland should be shifted from personal income to immovable property, since it is difficult to avoid paying of immovable property tax and it leaves a less impact on the economic growth of the country.

Key words: EU Baltic Sea Region, tax structure, tax burden, immovable property tax.

JEL code: H29

Introduction

Several Latvian (Zvejnieks A., 2006; Vitola I., 2006; Spruge I., 2007; Pocs J., 2008; Vanags J., 2010 etc.) and foreign (Alm J., 1999; Mikesell J.L., 2007; Bird R. M., Slack E., 2004 etc.) scientists have studied the policy of immovable property tax, tax application and improvement issues. Almy R. (2001), Baker K., Hinze S. (2010), Arnold J.M. (2008) and other scientists have researched individual aspects related to the immovable property tax.

Topicality and choice of the research theme is based on the lack of scientific papers, which provide the study on the application of immovable property tax in the EU Baltic Sea Region countries among relatively few studies aimed at immovable property tax issues.

The research is based on the **hypothesis** that differences in tax burden, structure, and procedure for the application of immovable property tax in the EU Baltic Sea Region countries are based on the policy, various priorities, and development targets of each country.

The following research **aim** is set to verify the hypothesis: to analyse the tax burden and structure in the EU Baltic Sea Region countries and to assess the peculiarities for application of immovable property tax.

The following **tasks** are advanced to achieve the set aim:

- 1) to analyse tax burden and structure of the EU Baltic Sea Region countries;
- 2) to study the application of immovable property tax in the EU Baltic Sea Region countries;

- 3) to compare revenues from immovable property tax and its burden in total tax revenues in the EU Baltic Sea Region countries.

The research is mainly based on the monographic descriptive method as well as the methods of economic analysis and statistical data analysis. The Eurostat database, which provides data on tax burden and structure in the EU Baltic Sea Region countries for the period of 2001-2010 and revenues from the immovable property tax and its burden in total tax revenues for the period of 2005-2009, is used as one of the main sources of information for the research purpose.

Research results and discussion

The Baltic Sea Region is continuously developing as one of the economically most prosperous and dynamic regions. The Baltic Sea Region is a highly heterogeneous area in economic, environmental and cultural terms; yet, the countries concerned share many common resources and demonstrate considerable interdependence. This means that actions in one area may very fast transfer the consequences to other parts, or the entire region. Geographically, the region is united by the Baltic Sea. The Baltic Sea Region comprises 11 countries: Denmark, Germany, Iceland, Norway, Sweden, Finland, Estonia, Latvia, Lithuania, Poland, and the North-western region of Russia (Baltijas juras ..., 2011).

Eight of the eleven Baltic Sea Region countries are the EU Member States – Germany, Denmark, Poland, Lithuania, Latvia, Estonia, Finland, and Sweden, and

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particularly these countries are profoundly studied in the research. This choice is based on the fact that cooperation among the EU Member States of the Baltic Sea Region is considered as essential instrument for the establishment of a single EU policy. The EU Strategy for the Baltic Sea Region adopted at the European Council meeting of the EU Member States in October 2009 also evidences the statement. The Strategy aims to advance the cooperation among the Baltic Sea Region countries and to increase global competitiveness of the Region as well as to coordinate the efforts of the EU Member States belonging to the Region, organisations and financial institutions of the Baltic region, and other stakeholders for the achievement of the set aim. The Strategy advances four objectives: to promote environmental sustainability in the Baltic Sea Region, to raise the economic growth and welfare of the Baltic Sea Region, to facilitate accessibility and attractiveness of the Baltic Sea Region as well as to enhance safety and security of the Baltic Sea Region.

The EU Strategy for the Baltic Sea Region is intended as the internal EU strategy, while external cooperation projects are developed to cooperate with those countries of the Region that are outside the European Union. The Strategy enables a more complete use of the EU, regional, national, and international financial support for a joint implementation of projects significant to the entire Region (ES strategija ..., 2011).

Analysis of tax burden and structure in the EU Baltic Sea Region countries

Taxes are a pecuniary burden laid upon individuals or property owners to support specific facilities of the government. Taxes fulfil two essential functions – fiscal and regulative. The fiscal function is implemented through the provision of the state treasury with financial resources to finance the state expenditure for covering the public necessities (defence, provision of the public policy, education etc.). It is possible to influence the behaviour of economic subjects and socio-economic processes in the state through changes in tax elements; thus, implementing the regulative function of taxes. Both fiscal and regulative functions are closely interconnected. Therefore, the government may not apply only one function, for example, to think on the budget revenues; it shall consider also the possible changes in the economy (Ketners K., 2009).

Taxes may be classified by different features: by the taxable object, taxes are divided into consumption, income, and property taxes; by the method applied for setting taxes – proportional, progressive, and regressive taxes; by the government level imposing taxes – state, regional, and municipal taxes (Ketners K., 2009).

Most frequently taxes are classified either by the method for setting the taxable base or an economic function. The first method foresees the breakdown of taxes into direct and indirect taxes. Indirect taxes are taxes levied by the state on expenditure of a consumer including these taxes into the price of goods and services, contrary to direct taxes that are levied on the income or property of an entity. Indirect taxes are regressive measures, since they are not based on the ability to pay principle. The EU envisages the following direct taxes: property taxes (immovable property tax, motor vehicles

tax, capital tax, wealth tax, and property registration tax) and income taxes (personal income tax, corporate income tax, tax on inheritance and gifts, capital increase tax, distributable profit tax, capital transfer, and deduction tax).

Consistent with the economic functions, taxes may be classified into consumption, labour, and capital taxes. The breakdown of tax revenues by the economic functions outlines the share of a certain tax group in total tax revenues paid by a consumer for goods and services (consumption taxes), paid by an employee from the salary/wage (labour taxes), and paid by an entity from the earned profit (capital taxes) (Ketners K., 2009).

Since the immovable property tax falls in the category of direct taxes, revenues from direct taxes in the EU Baltic Sea Region countries are discussed in more details for the period of 2001-2010 (Table 1).

The data of Table 1 show that in the EU Baltic Sea Region countries, the highest share of direct taxes of GDP is observed in Denmark, Sweden, and Finland; while the lowest indicators are seen in Lithuania, Latvia, Poland, and Estonia. In 2010, the difference between the highest indicator in Denmark (30.1%) and the lowest indicator in Lithuania (4.7%) equals to 25.4 percentage points.

Analysing the difference between the revenues from direct taxes in 2010 compared with 2001, Denmark shows the highest increase (0.6 percentage points), while Finland has experienced the highest decrease (-3.4 percentage points). In turn, the comparison of 2010 and 2008 data, which coincide with the beginning of the global economic crisis, presents the decrease in the share of direct taxes in the entire EU Baltic Sea Region countries (Table 1). A more profound analysis of macroeconomic indicators of each EU Baltic Sea Region country could be required to explain the reasons for such a decrease. In general, the decline might be explained by a sharp decrease of internal consumption, decrease of wages/salaries and corporate profit, increase of unemployment and shadow economy as well as structural changes in the tax base.

Usually the tax burden calculated in per cent of the Gross Domestic Product is used as the key indicator of tax policy, which shows the share of GDP redistributed by means of the state tax policy (Ketners K., 2009).

Determination of the tax burden is one of the key indicators of the state tax policy. There is a generally accepted opinion that business tax burden is an essential factor affecting decision-making when companies choose their address for legal registration. The role of this factor is essentially significant within the EU context on the conditions of free capital movement.

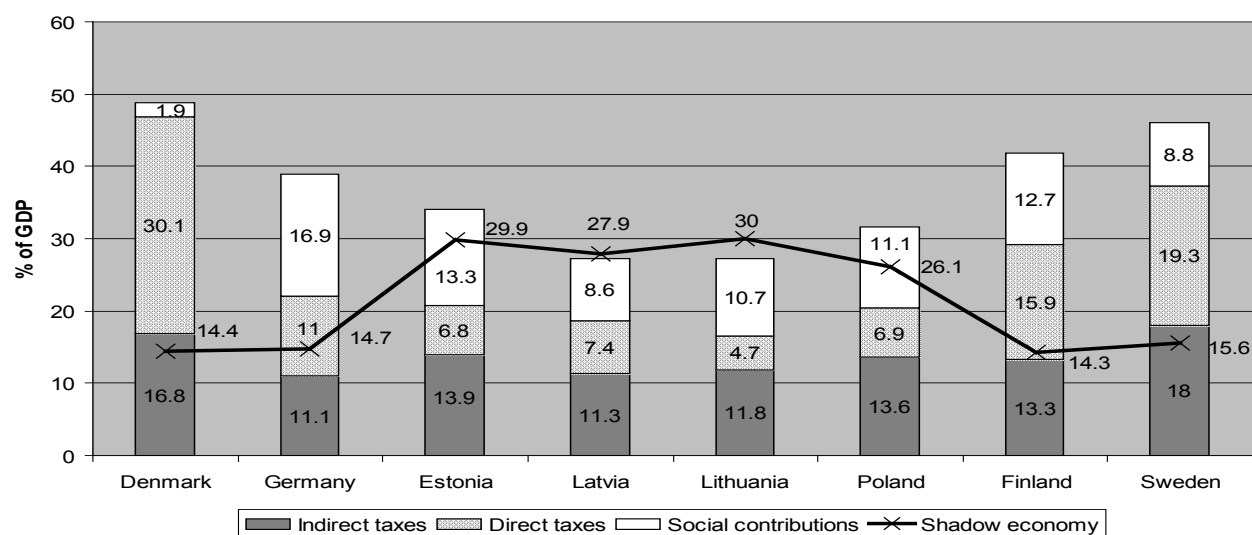
The analysis of the tax burden (Figure 1) for the year 2010 in the EU Baltic Sea Region countries outlines quite a lot of variation. The highest tax burden is observed in Denmark (48.8%), followed by Sweden (46.1%), Finland (41.9%), and Germany (39%). The lowest tax burden is observed in Lithuania – 27.2%. This aspect greatly coincides with the economic potential of a country, i.e. a heavier tax burden corresponds to a larger GDP amount per capita. The explanation is rather simple: the possibility to transfer a larger share of GDP for financing of general public needs increases with the growth of the economic potential. The share of indirect taxes in the Baltic States

Table 1

Direct taxes in the EU Baltic Sea countries in the period of 2001-2010, % of GDP

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Difference in percentage points	
											2010/2001	2010/2008
Denmark	29.5	29.3	29.6	30.4	31.9	30.7	30.1	29.9	30.2	30.1	+0.6	-0.2
Germany	11.0	10.7	10.6	10.2	10.3	10.9	11.3	11.5	11.0	11.0	0	-0.5
Estonia	7.2	7.5	8.0	7.9	7.0	7.1	7.6	7.9	7.5	6.8	-0.4	-1.1
Latvia	7.6	7.8	7.6	7.9	7.9	8.5	9.2	9.7	7.2	7.4	-0.2	-2.3
Lithuania	7.8	7.5	8.0	8.7	9.0	9.6	9.2	9.3	6.0	4.7	-3.1	-4.6
Poland	6.7	6.9	6.6	6.4	7.0	7.5	8.6	8.6	7.5	6.9	+0.2	-1.7
Finland	19.3	19.2	18.1	17.8	17.9	17.7	17.8	17.9	16.5	15.9	-3.4	-2.0
Sweden	20.8	19.6	20.2	20.9	22.0	22.2	21.2	19.8	19.7	19.3	-1.5	-0.5

Source: authors' summary and calculations based on *Taxation Trends ..., 2010* and *Government Finance ..., 2011*



Source: authors' construction based on *Government Finance ..., 2011*

Fig.1. Tax burden, tax structure and the share of shadow economy in the EU Baltic Sea Region countries in 2010, % of GDP

and Poland exceeds the share of direct taxes; while in Denmark, Finland and Sweden, the situation is quite opposite, i.e. the share of direct taxes exceeds the share of indirect taxes. In Germany, both shares are equal and it has the highest share of social contributions among the EU Baltic Sea Region countries. Social contributions are very low in Denmark (1.9% of GDP) as most welfare spending is financed out of general budget revenues, basically direct taxation. Nevertheless, Denmark is an exception in this aspect; relatively low share (compared with direct and indirect taxes) of social contributions in total tax revenues is visible also for Sweden (8.8% of GDP). Whereas, in Latvia considering the demographic peculiarities, the share of social contributions (8.6% of GDP) exceeds the share of direct taxes (7.4% of GDP) (*Government Finance ..., 2011*).

Lower level of remuneration and corporate profit simultaneously reducing the possibility to receive direct

tax revenues in the budget is characteristic to the new Member States being the Baltic Sea Region countries. This is evidenced by the GDP per capita indicator consistent with the purchasing power parity standards and the average wage. In 2010, the highest GDP per capita by purchasing power parity standards was visible in Denmark (123%), Sweden (119%), Germany (116%), and Finland (115%). The same indicators for the Baltic States and Poland were almost twice lower. The lowest indicator was presented by Latvia (51%). The highest average labour remuneration per one employed person was observed in Germany (EUR 53659.9), Sweden (EUR 50666.7), Finland (EUR 47544.5), and Denmark (EUR 44801.0). The indicators for Lithuania (EUR 21082.5), Poland (EUR 19203.7), Estonia (EUR 18424), and Latvia (EUR 16199.1) were more than 2.5 times lower. The analysis leads to a conclusion that the EU Baltic Sea Region countries having higher

share of direct taxes experience a higher living standard – larger GDP per capita and higher average wage (European Commission ..., 2011).

The World Economic Forum analysis on the competitiveness indices of the EU Baltic Sea Region countries for the period of 2009-2010 shows that the EU Baltic Sea Region countries having a higher tax burden are ranked in higher positions by competitiveness indices, while the countries having a lower tax burden are ranked in much lower positions. Hence, in 2009-2010, Denmark is ranked in the 5th position according to the competitiveness index (in 2010, the total tax burden equals to 48.8% of GDP), Sweden – in the 4th position (in 2010, the total tax burden – 46.1% of GDP), Finland – in the 6th position (in 2010, the total tax burden – 41.9% of GDP), and Germany – in the 7th position (in 2010, the total tax burden – 39% of GDP). Latvia, which in 2010 had the second lowest tax burden in the EU Baltic Sea Region, is ranked in the 68th position according to the competitiveness index (The Global ..., 2011).

This leads to a conclusion that tax burden is not the main factor determining the development of a country. Competitiveness indices, GDP, the average salary, inflation, unemployment, shadow economy, and other rates shall be analysed to determine the economic development of countries.

Shadow economy plays a significant role in the low share of direct taxes in case of Latvia, Poland, Lithuania, and Estonia, since the shadow economy actors do not pay direct taxes (income taxes) at all. The analysis on the share of the shadow economy (Figure 1) outlines that in 2010, the highest share of shadow economy of GDP among the EU Baltic Sea Region countries was observed in Lithuania (30%), Estonia (29.9%), Latvia (27.9%), and Poland (26.1%). Finland (14.3%), Denmark (14.4%), Germany (14.7%), and Sweden (15.6%) had almost twice lower share of the shadow economy (Schneider Fr., 2010). According to Figure 1, the share of shadow economy in Latvia and Lithuania exceeds the tax burden in these countries. Large share of shadow economy is visible also in Estonia and Poland, which is only slightly lower than the tax burden of the mentioned countries. Therefore, these are the countries among the EU Baltic Sea Region countries, which should think of reduction of the share of shadow economy. Redistribution of the tax burden could be as one of the possible solutions. The structure of direct taxes should be revised in Latvia, Lithuania, Estonia, and Poland and in future, the tax burden should be redirected from personal income tax to immovable property tax, since it is impossible to hide a taxable object and hence, to avoid paying of the tax. This positive aspect of immovable property tax would significantly reduce shadow economy and increase the share of direct taxes in total tax revenues. This is also outlined in the studies of foreign researchers, like *Jens Matthias Arnold, a researcher at the OECD, who analyses the growth of the OECD countries in his paper "Do Tax Structures Affect Aggregate Economic Growth"* and compares it with the tax structure – aspects on which the tax impact is laid on. Depending on aspect whether taxes are basically imposed on property, consumption, or private income, he noticed a difference in the growth rates of countries and the following correlation: the more taxes were imposed on immovable property and less – on private income, the faster economics developed in these countries. The difference is quite considerable, annually

around 2%, thus, within 10-20 years, the difference in revenues of these countries may increase extremely significantly (Arnold J., 2008).

Immovable property tax in the EU Baltic Sea Region countries

The European Union has not set a single procedure for the application of immovable property tax in its Member States. Each country may specify its own procedure for the application of immovable property tax consistent with the policy, priorities, and advanced development targets of the country.

Immovable property tax is a state tax administered by local governments and revenues gained from immovable property tax are transferred to the municipal budget. Usually immovable property tax revenues are an essential source for municipal budget revenues thanks to the relatively simple tax administration and fixing of it to a certain territory. Taxable objects may be land plots, buildings, and constructions. Immovable property tax is collected annually and the tax base is the value of immovable property, which is defined consistent with the land cadastre data, statistics on land market transactions, or budgeted revenues. Usually, the tax base is 40-50% of maximum market value of an object. There are different types for setting and application of immovable property tax rates. In some countries, fixed immovable property tax rates are set by the legislation (Latvia), or the rates are set by the local government within the limits prescribed by the legislation (Estonia); in some other countries, a fixed tax rate is applied to a certain part of immovable property taxable objects, while the local government may decide on levying the tax for the other part of the property (Sweden, Lithuania, Denmark, Finland). Still, there are countries, where local governments have the rights to set the immovable property tax rate. This phenomenon is characteristic to Germany, which is a country of federal tax system. The structure of tax system in a federal country is determined by the political system of the country and includes relatively independent elements – regions that have individual rights to set immovable property tax rates. In several countries, immovable property tax is set in terms of money according to the area of land or flat (premises). Hence, it is possible to apply norms on premises and impose a tax on "excessive" areas. Immovable property tax reliefs are usually applied by local governments in their administrative territories (Ketners K., 2009).

Positive aspects of the immovable property tax – it is impossible to hide a taxable object, the tax base is easy determinable (information from the cadastre, market statistics on selling similar objects, insurance value), or it is possible to apply a progressive scale. Drawbacks of the tax relate to the necessity to identify the purpose for utilisation of the immovable property – social needs, charity, the only place of residence etc. (Ketners K., 2009).

The analysis on peculiarities for applying immovable property tax in the EU Baltic Sea Region countries (Table 2) shows that the cadastral value is used as the basis for setting immovable property tax rate in all countries of the Region, except for Poland. In Sweden and Denmark, a method of capitalisation is used to determine the cadastral value. This method includes the analysis and determination of revenues from rent

Table 2

Application of immovable property tax in the EU Baltic Sea Region countries

Country	Tax base	Taxable object	Tax rate, %	Coefficient applied by a local government	Price for sqm
Latvia	Cadastral value	Land	1.5	-	-
		Buildings	1.5	-	-
		Engineering constructions	1.5	-	-
		Natural agricultural land	3	-	-
		Residential buildings	0.2-0.6	-	-
Lithuania	Cadastral value	Land	1.5	-	-
		Buildings	0.3-1	-	-
		Engineering constructions	0.3-1	-	-
Estonia	Cadastral value	Land	0.1-2.5	-	-
Sweden	Cadastral value	Buildings	0.5-1	-	-
		Residential buildings	0.75	-	-
		Engineering constructions	0.2-2.8	-	-
Denmark	Cadastral value	Land	1.0-3.4	-	-
		Buildings	0.4-2.8	-	-
Finland	Cadastral value	Buildings	0.6-1.35	-	-
		Residential buildings	0.32-0.75	-	-
		Engineering constructions	0.6-2.85	-	-
Germany	Cadastral value	Buildings	0.35	2.8-6.0	-
Poland	Value of one sqm of property, PLN	Land	-	-	0.41-0.80
		Buildings	-	-	4.27-21.05
		Residential buildings	-	-	0.67

Source: authors' construction based on Taxes in Europe, 2011

Table 3

Amount of immovable property tax and its share in total tax revenues in the Baltic Sea Region countries for the period of 2005-2009

Country		2005	2006	2007	2008	2009	Difference
							2009/2005
Denmark	share, %	1.82	1.83	1.88	2.03	2.27	+0.45
	amount, mln. DKK	14 348.96	14 842.14	15 601.27	17 000.16	18 102.53	+ 3 753.57
Germany	share, %	1.17	1.13	1.11	1.10	1.14	-0.03
	amount, mln. EUR	10 250	10 400	10 710	10 810	10 940	+690
Estonia	share, %	0.95	0.80	0.70	0.93	0.97	+0.02
	amount, mln. EEK	506	517	552	755	755	+249
Latvia	share, %	2.34	1.95	1.65	1.50	2.10	-0.24
	amount, mln. LVL	61.60	66.40	74.20	70.70	73.07	+11.47
Lithuania	share, %	1.11	1.03	0.90	0.84	1.13	+0.02
	amount, mln. LTL	230.1	253.3	262.8	281.3	299	+68.9
Poland	share, %	3.60	3.39	3.08	3.18	3.44	-0.16
	amount, mln. PLN	11 614	12 139	12 622	13 899	14 700	+3 086
Finland	share, %	1.04	1.08	1.10	1.14	1.32	+0.28
	amount, mln. EUR	725	785	850	914	974	+249
Sweden	share, %	1.85	1.75	1.74	1.60	1.76	-0.09
	amount, mln. SEK	25 128.30	25 206.70	25 864.60	23 953.70	25 327.20	+198.9

Source: authors' construction based on Taxes in Europe, 2011

or lease which an owner of the property could receive within a year. Denmark and Sweden have strictly set the procedure for accounting of rent payments. The other countries determine the cadastral value based on the method of comparing transactions, which analyses real estate market information on cases of dispossession. Determination of the cadastral value does not include an individual assessment of each object, but a bulk assessment, which is based on the application of standard procedures for calculation of the value of an object for taxation purposes. This allows evaluating of a large number of objects with relatively low costs (Taxes in Europe, 2011).

Taxable objects significantly differ by the EU Baltic Sea Region countries. For example, in Estonia, immovable property tax is levied only on the land; while in Germany, the tax is levied only on buildings. Immovable property tax is applicable to residential buildings in Latvia, Sweden, Finland, and Poland. Latvia has the largest set of taxable objects; here immovable property tax is levied on the land, buildings, engineering constructions, and residential buildings (Taxes in Europe, 2011).

The EU Baltic Sea Region countries outline considerable differences in the techniques applied for setting immovable property tax rates; basically depending on the legislation of a certain country and economic experience. Fixed and variable tax rates are set depending on the method applied by each country. Local governments have the rights to impose fixed tax rates. Besides, local governments may set additional coefficients. For example, Germany has set a general immovable property tax rate levied at 0.35% and local governments depending on the type of use of immovable property determine additional coefficients ranging between 2.8 and 6.0 that are used for multiplying the fixed rate (Taxes in Europe, 2011). Some countries apply proportional tax rates. For example, in Latvia, residential buildings are levied at 0.2% of the property cadastral value, if the property cadastral value does not exceed LVL 40 000; at 0.4% of the property cadastral value, for the part of the property cadastral value that ranges between LVL 40 000 and LVL 75 000; and at 0.6% of the property cadastral value that exceeds LVL 75 000 (Par nekustama ipasuma nodokli, 2011).

Local governments have the rights to state tax reliefs to socially vulnerable taxpayers – retired persons, disabled persons; besides some countries (Sweden, Denmark, and Germany) prior to conferring tax reliefs, consider the family status of a taxpayer and their income level. For example, Sweden, to protect residents against high taxes, has set limits of payments, i.e. the amount of immovable property tax may not exceed 4-5% of a person's income (Taxes in Europe, 2011).

Immovable property tax reliefs are applied in all the EU Baltic Sea Region countries. In addition, there are types of immovable property that are fully or partially exempted from tax payment. The EU Baltic Sea Region countries apply tax exemptions to the objects used for cultural, education, public needs, state administration, and religious purposes. There are countries, which apply the exemption from immovable property tax for a certain period. This is done to promote certain types of economic activities. For example, in Sweden, immovable property tax shall not be paid 5 calendar years after

the construction of a new residential building, while immovable property tax rate is reduced by 50% for the next 5 years. In Germany, immovable property tax shall not be paid 10 calendar years after the construction of a new residential building (Taxes in Europe, 2011). However, in Latvia, immovable property tax shall not be paid only one year after construction or reconstruction of a building to be used for economic purposes (Par nekustama ipasuma nodokli, 2011).

In Denmark and Germany, immovable property tax is included in corporate income tax or personal income tax, if the property is rented or hired (Taxes in Europe, 2011).

Poland is the only EU Baltic Sea Region country, which applies the value of one square metre and not the cadastral value for calculations of immovable property tax. Every year the government of Poland updates and states the value of immovable property per one square metre for each taxable object – land, buildings, residential buildings (Taxes in Europe, 2011). On the one hand, such administration of immovable property tax is simple and understandable; while on the other hand, economically, this leads to disregarding of the real estate market development and uneven distribution of tax burden.

The amount of collected immovable property tax revenues as well as the share of immovable property tax in total tax revenues greatly differ among the EU Baltic Sea Region countries (Table 3).

Characteristics of the share of immovable property tax of the EU Baltic Sea Region countries in total tax revenues of the state consolidated budget reveal the following peculiarities (Table 3). In 2009, the largest share of immovable property tax was observed in Poland (3.44%), Denmark (2.27%), and Latvia (2.10%). The different method for calculation of immovable property tax explains the high share of immovable property tax in Poland. Irrespective of the place of property location (town/city, countryside), immovable property tax is calculated based on the state determined value of one square metre. Thus, the location and market value of the property influence the amount of immovable property tax. Besides, Poland has defined a wide range of taxable objects (land, buildings, residential buildings), and considering the large territory of the country, it is saturated with real estate. The relatively high share of immovable property tax in Denmark may be explained by the highest immovable property tax rate for land (up to 3.4%) in the EU Baltic Sea Region countries. Though, the relatively high share of immovable property tax in Latvia is explained by a wide range of taxable objects (land, buildings, engineering constructions). In Latvia, an increase in the share of immovable property tax in total tax revenues was forecasted from 2010, since exactly in 2010, the immovable property tax rate for land was increased (from 1% to 1.5%), simultaneously widening the range of taxable objects – the government initiated the taxation of residential buildings with immovable property tax. Easier and simpler administration of immovable property tax compared with other taxes explains the widening of the range of taxable objects and increase of the tax rates. The government of Latvia prefers those taxes that exclude possibility to avoid paying of them; hence reducing the share of shadow economy.

In 2009, the lowest share of immovable property tax in total state tax revenues was in Estonia (0.97%), Lithuania (1.13%), and Germany (1.14%). The small share of immovable property tax in Estonia and Germany is explained by the fact that in Estonia, immovable property tax is imposed only to land, while in Germany – only to buildings. The low immovable property tax rate imposed to buildings (0.3-1%) explains the relatively small share of immovable property tax in Lithuania.

Table 3 provides the possibility to analyse the dynamics in the share of immovable property tax in 2009 compared with 2005. In 2009, the share of immovable property tax in total tax revenues has mostly increased in Denmark (+0.45 percentage points) and Finland (+0.28 percentage points) compared with 2005. Denmark and Finland are the only EU Baltic Sea Region countries, which outlined the increase in the share of immovable property tax for the period of 2005-2009. The largest decrease in immovable property tax has been observed in Latvia (-0.24 percentage points) and Poland (-0.16 percentage points).

However, the analysis on the amounts of immovable property tax for the period of 2005-2009 (Table 3) outlines that irrespective of fluctuations in the share of immovable property tax, the tax revenues from immovable property tax in absolute figures have shown an annual growing trend. A decrease in the amount of immovable property tax (in absolute figures) was observed only in 2008 in Latvia and Sweden. In Latvia, the change of immovable property tax rate for land from 1.5% to 1% of the cadastral value explains the decrease in the amount of immovable property tax. The substitution of immovable property tax levied on buildings with the local municipal duty in 2008 explains the decrease in the amount of immovable property tax in Sweden (Taxes in Europe, 2011).

Therefore, fluctuations in the share of immovable property tax may be explained by the changes of other taxes (personal income tax, value added tax etc.) in total tax revenues.

Conclusions, proposals, recommendations

1. The Baltic Sea Region is continuously developing as one of the economically most prosperous and dynamic regions. The cooperation among the Baltic Sea Region countries is considered as significant instrument in the establishment of a common EU policy.
2. The EU Baltic Sea Region countries have different tax systems - tax burden coincides with the economic potential of a country, i.e. a heavier tax burden corresponds to a larger GDP amount per capita. Tax structure varies between direct and indirect taxes. Countries encountering a larger share of the shadow economy (Latvia, Poland, Lithuania, Estonia) have a larger share of indirect taxes, while countries encountering a smaller share of the shadow economy (Denmark, Sweden Finland) have a larger share of direct taxes.

3. Objects taxable with immovable property tax, tax rates and procedure for setting tax rates significantly differ in the EU Baltic Sea Region member states. Immovable property tax is determined consistent with the policy, priorities, and development targets of each country. Immovable property tax revenues range between 0.97% (Estonia) and 3.44% (Poland) of total tax revenues.
4. In the future, the structure of direct taxes in Latvia, Lithuania, Estonia, and Poland should be revised and the tax burden should be shifted from personal income tax to immovable property tax, since it is difficult to avoid paying of immovable property tax. These changes could reduce the share of shadow economy and increase the share of direct taxes in total tax revenues.

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Immovable Property Tax in Latvia: Problematic Aspects and Possibilities for Improvement

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Abstract. In making a tax policy on the present economic conditions in the world, the role of government is still very large – it can both promote and hinder the unlimited development of business, and social stratification and differentiation as well as the development of social sphere. The research aim is to investigate and analyse the nature of immovable property tax and its role in the national economy of Latvia and the mechanism used for tax collection and distribution as well as to provide proposals for the improvement of immovable property tax.

Since the best method in researching any phenomenon is the historical method, immovable property tax (hereinafter IPT) is studied and viewed historically by exposing its origination and formation, its advantages and disadvantages as well as measures, according to the authors, necessary for its improvement. The present Law on Immovable Property Tax (1997) is mostly based on an assumption that all sectors of economy are equally profitable and different rates of return promote investment in areas where it brings the highest return, thus, raising a nation's wealth. The authors' view, which is based on a long-term analysis of all sectors of the national economy, is that any sector features a specific rate of profitability. Usually, according to a general scheme, the lowest rate belongs to forestry, followed by agriculture, quarrying industry, and manufacturing, whereas the highest rate is observed for commerce, banking and insurance, services, and entertainment and gambling. The authors came to an essential conclusion that IPT rates had to be differentiated by sector depending on the purpose of use of immovable property, since immovable property features different possibilities to ensure income to its owners, besides, capital liquidity is different.

Key words: immovable property tax, taxation, improvement, Latvia.

JEL code: H21

Introduction

Always conditions existed on which government tax policies did not eliminate the ability of taxpayers to pay taxes, but, on the contrary, the government had to ensure the sustainability of enterprises and the sustainable wellbeing of all residents.

The tax base is directly related with the profitability of economic activity of enterprises including income gained from foreign investments and excluding interest and dividends earned by foreign investors in Latvia. The Central Statistical Bureau usually presents it as a GDP – Gross Domestic Product.

Research aim and tasks

The research aim is to investigate and analyse the nature of immovable property tax and its role in the national economy of Latvia and the mechanism used for tax collection and distribution as well as to provide proposals for the improvement of immovable property tax.

The following research tasks were set to achieve the research aim:

- 1) to identify and analyse the purpose and tasks of immovable property tax;
- 2) to present the performance and role of immovable property tax in the tax system.

Research methodology

The research methodology includes a study and analysis of origination and performance of land and immovable property taxes. The following research

methods were exploited: analysis, comparative surveying, the monographic method as well as inductive and deductive methods.

Research results and discussion

In 1995, a tax reform was implemented in Latvia to achieve two main goals – to ensure stable government budget revenues for financing priority social and economic activities, limiting financial deficits; and promoting economic growth in the country by encouraging fair competition and abolishing unnecessary privileges or tax reliefs and unreasonably high tax rates for several economic sectors. To boost the economic development, consumption instead of income was taxed more in the result of the reform, thus, stimulating an increase in savings and investments in the country (Salmins J., 2005).

The basic principle on which the income tax system is based is the principle of social justice that arises from the imposing of income tax based on the ability of taxpayers to pay taxes. Implementing the principle of social justice becomes apparent as observing the principles of both vertical and horizontal equity.

If implementing the principle of vertical equity, different tax burdens are imposed on taxpayers of different incomes, i.e. those having higher income owing to certain circumstances are taxed at higher tax rates. According to the principle of horizontal equity, taxpayers bear equal tax burdens, i.e. all taxpayers are taxed to the same extent. These principles play a greater role in imposing an income tax on individuals. The majority

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Table 1

Immovable property tax rates in 1990

Value of taxable immovable property, LVL	Immovable property tax rate, LVL
1500-25000	0.5% of immovable property value (PV) of more than LVL 1500
25000-50000	LVL 117.5 + 1.5% of (PV) of more than LVL 25000
50000-250000	LVL 492.5 + 2.0% of (PV) of more than LVL 50000
250000-750000	LVL 4492.5 + 2.5% of (PV) of more than LVL 250000
750000-2500000	LVL 16992.5 + 3.5% of (PV) of more than LVL 750000
more than 2500000	LVL 78242.5 + 4.0% of (PV) of more than LVL 2500000

Source: Vitola I., Boruks A., 2006

of the world states apply the principle of vertical equity in imposing an income tax; it also relates to corporate income gained from immovable property (Ketners K., Titova S., 2009; Skapars R., Sumilo E., Dunska M., 2010).

The tax system has to be flexible to be able to adapt easily to the changes in economic trends. It becomes apparent as tax relief and differentiated tax rates for different income groups. At the same time, the government policy regarding the tax system has to be stable and predictable, so that taxpayers can consider the effect when making their decisions. The tax system has to be sustainable, so that tax revenues rise along with the economic growth.

An analysis on the role and position of IPT in the Government Consolidated Budget showed that its share had significantly decreased from 3.2% in 2000 to 1.7% in 2006 and 1.2% in 2008. Its share slightly rose in 2009 and 2010, reaching a 1.9% share in the Government Consolidated Budget (Latvijas Statistikas gadagramata, 2002, 2007, 2009, and 2010). In 2010, this share could be significantly affected by the change in rates of this tax (an increased tax rate of 1.5% was applied to non-cultivated agricultural land as well as the increased rate of IPT was imposed on residential buildings and premises as compared with 2009).

It may be explained by the fact that cadastral values of land as well as buildings and constructions located on it rose during the recent period. Therefore, immovable property tax payments increased, too, and many households faced problems in paying the tax.

An increase in the outstanding debt of immovable property tax was observed in the entire period of analysis (2000-2010); it amounted to LVL 1.2 million in 2010 (Vitola I., 2010).

A justified question arises: is the rate of tax on immovable property correct in the country? Are there possibilities to adjust it, i.e. to improve it, which means that individuals with higher income pay a higher tax according to the so-called progressive scale of rates?

Insight into the history of immovable property tax

Since the Law on Land Tax (Par zemes nodokli, 1990) related only to land, a separate property tax was introduced in 1990, which was applied to property used in non-agricultural businesses – buildings, constructions, equipment as well as buildings under construction – if

their value exceeded LVL 1500. The immovable property tax was not imposed on:

- 1) immovable property owned by individuals (individual houses etc.);
- 2) all kinds of immovable property owned by those engaged in agricultural production;
- 3) all kinds of businesses immovable property value of which was less than LVL 1500. (Par ipasuma nodokli, 1990)

So, actually only legal entities paid tax on immovable property used in production and commerce. Its rates corresponded to the basic principles of progressive income taxation of that period, taking into consideration the fact that an ability to pay taxes increased as the taxable value of immovable property rose. Small immovable property owners had a small ability to pay the tax, while large such owners had a large ability to do it, and the progressive tax rate was one of the basic conditions that was oriented against the formation of large inequality and differences. Based on this key condition, the tax rate was set slightly progressive within a range from 0.5 to 4.0% (Vitola I., Boruks A., 2006) (Table 1).

As one can see, the progressive immovable property tax rate relates only to an increase in a part of immovable property value as it is presented in Table 1. The tax was paid by legal entities that completely took over their immovable property during privatisation and registered their ownership in accordance with the procedures set forth in laws.

Transition to a flat immovable property tax rate

In 1997, significant changes in the tax policy occurred in Latvia – the Law on Immovable Property Tax was passed on 4 June, abolishing the separate Law on Land Tax (1990) and Law on Property Tax (1990) along with their amendments.

There was an extensive, reasonable, and multilateral justification for such alterations, as significant changes have occurred in the political, legal, and economic areas of the Republic of Latvia since the introduction of both taxes in 1990, which very strongly affected the mechanism of applying and calculating the tax.

Starting from 1990, an agricultural reform, which included a land reform, was carried out, and 94.9 thousand farms and 156.6 thousand household plots were established anew until 1 January 1997. The

numbers of specialised state farms, statutory farms, and other types of farms significantly changed.

An IPT was introduced in 1997 by integrating the former land tax and property tax. At the moment of imposing the IPT, only the land tax functioned in reality, since a theoretical justification and a calculation methodology were well-developed for it. Whereas, the property tax, which was imposed on non-agricultural buildings and constructions, was not then elaborated – there was no justification and no methodology. The law envisaged the completion of justification and methodology before 31 December 2000. It means that the IPT did not have to be paid on buildings and constructions until 1 January 2001. Yet, the government wanted to collect as much revenues from this tax as before 1997. Therefore, the tax rate was raised from 1.0% to 1.5% obliging owners or users of land to pay it depending on the cadastral value of immovable property.

Significant amendments to the IPT were introduced in 1999, and they came into force on 1 January 2000, stipulating that:

- 1) the cadastral value of buildings and constructions should be set before 31 December 2001;
- 2) the tax should be imposed only on those buildings and constructions that were used for economic activity. Besides, a book value calculated by IPT payers themselves, which was based on an inventory book value set after 1 January 1997 and taxed at a rate of 1.5%, had to be used before 31 December 2001 (Grozījumi likuma "Par...", 1999).

Therefore, the progressive tax rate was cancelled. In general, it has to be noted that these amendments were made based on a business concept, the purpose of which was to introduce lower tax rates for enterprises, thus, promoting the accumulation of private capital. Elements of social programmes were taken into account at a smaller extent.

The amendments of 22 November 2001 stipulated that:

- 1) before 31 December 2003, the IPT rate was set at 1.5% of the cadastral value of immovable property;
- 2) after 1 January 2004, it should be 1.0% of the cadastral value of immovable property as it was before;
- 3) for IPT taxpayers for the taxation period, the tax was calculated based on the previous cadastral value of immovable property (Grozījumi likuma "Par...", 2000).

The amendments passed in 2003 stipulated that after 1 January 2004, the IPT rate should be 1.5% of the cadastral value of immovable property. The law also provided tax relief to IPT payers:

- 1) the IPT rate should be reduced by 50% for politically repressed individuals – on land, individual houses, and constructions owned or held by these individuals for at least five years and not used in economic activity;
- 2) local governments might provide and should provide a IPT tax relief of 90%, 70%, 50%, or 25% to certain taxpayer categories (Grozījumi likuma "Par...", 2003).

In the period of 1998-2006, the taxable items were land, buildings, and constructions, while since 2007 – only land and buildings. During this period, the tax base of buildings and constructions was their inventory book value, while from 2007 – their cadastral value. Starting

from 1 January 2008, the tax rate was set at 1.0% of the cadastral value of immovable property, and an increase in the tax on immovable property with unchanged purpose of use might not rise more than 25% compared with the amount of tax calculated for the previous taxation year in 2008, 2009, and 2010 (Par nekustama ipasuma..., 1997).

Starting from 2010, the procedures for calculating and paying the immovable property tax are regulated by the Law on Immovable Property Tax (1997) (version of 1 December 2009) as well as regulations of the Cabinet of Ministers based on this law.

Taxable items

For a long time, land and buildings were regarded as taxable items, besides, there were several exemptions from the tax set out in the law, and several items were not taxed at all including buildings of individual houses unused in economic activity, residential multi-apartment houses or their parts, and shops of artists as well as auxiliary buildings of these houses.

In accordance with the amendments to the Law on Immovable Property Tax (2009) (hereinafter the Law), Section 1 stipulates that since 1 January 2010 individual and multi-apartment houses or their parts, the tax on which is calculated by applying the differentiated rate based on their cadastral value, are included in the list of taxable items. Buildings as well as constructions that are registered in the Cadastral Register but not yet put into service, become taxable items.

Taxable items of new engineering constructions are set according to the classification of constructions accepted in corresponding legal acts. Based on the mentioned classification, taxable items are also determined for buildings. There are several changes and supplements in the list of items exempt from the immovable property tax. These are engineering constructions – railroads, sport facilities, chimneys etc. – owned or legitimately held by state-owned or municipal enterprises and companies providing regulated public services.

The procedure for calculating the share of cadastral value for real property tax needs set by the Cabinet Regulations No. 1625 is very important (Kartiba, kada aprekina..., 2010).

The Law on Immovable Property Tax (1997) retains tax relief for businessmen – buildings constructed or reconstructed for the purpose of economic activity are exempt from the immovable property tax for one taxation year, starting with the next month after putting a building into service.

Transitional provisions of the Law were supplemented with Paragraph 3 providing that the immovable property tax on buildings that are not owned or legitimately held by an individual is paid by their user. In this case, an individual who actually exploits a building (part of it) is regarded as a user of the building without drawing up documents (Likuma "Par nekustama...", 2006). Some changes were made regarding the procedure for paying taxes on state-owned or municipal land, buildings, and engineering constructions. As before, the tax is paid on the mentioned immovable property but if there is no owner, the IPT on buildings may be paid by their user (tenant).

Table 2

Immovable property tax rates in Latvia since 1 January 2010

Tax rate	Taxable items
1.5% of cadastral value	<ol style="list-style-type: none"> 1) land; 2) non-cultivated agricultural land, except land, the area of which does not exceed one hectare or which is bound to limitations in agricultural activity in accordance with legal enactments; 3) buildings and their parts (except single-family and double-family residential houses, multi-apartment houses (their parts) irrespective of whether or not they are divided into apartments, parts of non-residential buildings, the functional use of which is to be residential premises and which (parts of which) are not used for economic activity); 4) engineering constructions.
0.1% of cadastral value exceeding LVL 40 000 0.2% of the part of cadastral value within a range of LVL 40 000-75 000 0.3% of the part of cadastral value exceeding LVL 75 000	<ol style="list-style-type: none"> 1) single-family and double-family residential houses, multi-apartment houses (their parts) irrespective of whether or not they are divided into apartments, parts of non-residential buildings, the functional use of which is to be residential premises and which (parts of which) are not used for economic activity; 2) shops of artists in multi-apartment houses that are regarded as a group of residential premises in terms of their functional use.

Source: authors' construction based on Ivanova O., 2010; Law on Immovable Property Tax, 1997

Taxable value and tax calculation

Since 2010, the tax on immovable property has been calculated and collected by municipalities. A cadastral value of immovable property is set by the State Land Service in accordance with the Immovable Property State Cadastre Law (Nekustama ipasuma valsts..., 2005).

The Law on Immovable Property Tax (1997) provides that the tax is calculated from the cadastral value of immovable property set on 1 January of the taxation year. If an immovable property is registered in the Cadastral Register during the taxation year, the tax will be calculated from the moment of its registration.

If a part of land unit or building (a group of premises) is taxed, and if different tax rates are applied to land units or parts of building, a proportion of the cadastral value of land unit or building in the total taxable area of land unit or building is used for tax calculation (Nekustama ipasuma valsts..., 2005; Kadastrālas vertēšanas noteikumi, 2006).

Tax rates

A flat and unchanged 1.5% IPT rate on land, buildings, and constructions in Latvia existed from 2000 to 2007, and in 2008 and 2009, it was 1%. From 2010, land, buildings, and constructions are taxed again at a 1.5% rate (from cadastral values set by the State Land Service in 2007). A differentiated IPT rate is in force since 2010 – 0.1%, 0.2%, and 0.3% of the cadastral value but in 2011, the differentiated rate on houses doubled – 0.2%, 0.4%, and 0.6% respectively (Table 2).

In 2010, the immovable property tax on land in specially protected natural territories, except neutral zones and natural monuments, did not exceed the amount of tax set in 2009, respectively, 1% (Par nekustama ipasuma..., 1997).

If an immovable property contains several immovable property items, the immovable property tax rate is set individually for each item of immovable property. A part of building belonging to an apartment (a separate

property together with the corresponding undivided part of the commonhold) is regarded as a separate taxable item.

Buildings and engineering constructions used in economic activity are taxed at a rate of 1.5% (instead of a 1% rate set earlier).

A minimum immovable property tax of LVL 5 on any taxable item (land and buildings) has been introduced since 2010. If the tax is set equal to LVL 5, a limitation on tax increases is not effective. If the tax set for poor and low-income individuals after granting a 90% tax relief is less than LVL 5, a municipality has the right not to send a tax notification to the taxpayer. In this case, the tax is accrued until the moment when legislative amendments are made or the total sum of accrued taxes over several taxation years exceeds LVL 5, and then the municipality sends a joint tax notification on the accrued tax for all the taxation years (Par nekustama ipasuma..., 1997).

In 2010, an additional tax rate of 1.5% was imposed on non-cultivated agricultural land, except a 25% limitation of tax increases regarding existent taxable items such as land, the area of which did not exceed one hectare or which was bound to limitations in agricultural activity in accordance with legal enactments. A 25% limitation of tax increases regarding non-cultivated agricultural land is not effective anymore (Par nekustama ipasuma..., 1997).

The authors believe that the enhancement of partially progressive IPT tax will only partially improve the present situation in the field of this tax. Inequalities among IPT taxpayers and tax burdens will remain after passing these positive amendments. Granting tax relief to low income individuals and families is retained as a responsibility of municipalities. Poor individuals get a tax reduction of 90% and low income individuals also get a tax reduction of up to 90% from the assessed tax as long as taxpayers have a status of poor or low-income individuals. The amount of immovable property tax for politically repressed persons regarding land and buildings included in individual residential house constructions, which have

been in the ownership or possession of such persons for not less than five years, has to be reduced by 50%, if the immovable property is not utilised for economic activity. If the immovable property is partly utilised for economic activity, the tax reduction is not applied to this part of the immovable property. Local governments may grant a relief of 90%, 70%, 50%, or 25% of the tax on the immovable property for separate categories of taxpayers. There are and will be many cases of such tax reliefs granted in Jurmala where the market value of immovable property is very high and the tax actually cannot be paid at equal rates of immovable property tax.

Local governments may grant tax relief as *de minimis* aid to those taxpayer categories, which are performers of economic activities pursuant to the Commission Regulation No. 1998/2006 on *de minimis* aid regarding the conformity of the individual aid project to the Treaty. When designing the enhancement of IPT, construction amounts and changes in the cadastral value of land were mostly taken into consideration. Irrespective of the existent positive achievements, the work on enhancing the IPT continues. The authors believe that it is useful to grant a 30% immovable property tax relief for up to 5 years to those farms, which perform new drainage activities in accordance with a plan, but to those farms, which work on enhancing their existing system of drainage – for up to 3 years. It would contribute to the national economy in the future.

When making amendments to the Law on Immovable Property Tax (1997), an issue regarding setting the rates of immovable property tax according to various uses of it was not creatively discussed. These differences determine different abilities of immovable property to generate income and differences in capital liquidity. Revenues gained from immovable property used for private life, agriculture, and forestry with a very slow turnover of capital may not be compared with revenues from commerce, banking, various services, or entertainment and gambling. Each of these sectors features a different rate of profitability. For instance, sectors of agriculture and forestry feature a very slow turnover of capital. In forestry, there are specific requirements of growing for every species of trees; it takes at least 30-40 years before a young forest stand produces income. It means that this period features only expenses. Imposing the IPT on such young forest stands forces forest owners to grow their forest stands not for wood-processing industry, i.e. saw timber but for pulpwood and energy wood that can be sold much sooner. Such a way of economic management might significantly affect the wood-processing industry in a distant future, while in the near future funds would be reduced for developing the national economy. In Bulgaria, agricultural and forestland is exempt from the IPT. In the Czech Republic, agricultural land is exempt from the tax for 5 years and forestland – for 25 years but the IPT has to be paid on a purchase value: 25% on forests and 0.75% on agricultural land (Dzegulis Z., 2010).

In Latvia, the IPT has been partially progressive since 2010. Before, it was not taken into consideration that immovable property was used for various purposes, and the profitability and capital turnover and liquidity of immovable property were different and depended on uses of immovable property in a particular industry. After introducing the enhanced immovable property tax, this

problem was not actually discussed, and its solution was left to be decided by tax policy makers.

In the rest of the EU Member States, the tax rate is differentiated according to the purpose of use of immovable property. The extent of differentiation may be quite different in each Member State. In Ireland, the IPT is not imposed on immovable property in which individuals live, but if they own other immovable properties, a 25% rate is imposed on their rental income. In Sweden, the IPT rate is differentiated based on real income; a 0.5% rate is set on forest land, 1.0% – on agricultural land, while construction land has a rate of 3.5%. The highest basic IPT rates are in Denmark – from 2% to 7.2%, in Hungary, too, buildings are taxed at a maximum rate per square metre, which is 3% of the market value a year. In the other EU Member States, the average basic IPT rate is, on average, less than 1.5% (The European Union ..., 2008).

The differentiation of immovable property tax rate based on the purpose of use of immovable property and the industry allows setting tax rates more accurately, taking into account the environmental, economic, and social effects and reducing the differentiation of individuals according to their wealth as well as social tension.

Conclusions and recommendations

Conclusions

1. In 1990, when several taxes on land and property were developed, their design authors Boruks A., Seile A., Biezais H. et al. actually made a compromise, taking into consideration interests of both the entire society and individuals, and admitting the principle of moderate progressiveness as the most correct one. According to this principle, the immovable property tax rate was slightly progressive and ranged from 0.5% to 4.0%.
2. The moderate progressiveness of the tax best suits conditions if both economic development and social factors have to be taken into consideration.
3. In differentiating the rate of IPT on land, the principle of cadastral evaluation based on the cadastral benefits of land is mostly used in the world; it means that the quality of land as well as the condition of traffic routes and economy is taken into account.
4. When designing the enhancement of IPT, construction amounts and changes in the cadastral value of land were mostly taken into consideration.
5. A flat and unchanged 1.5% IPT rate on land, buildings, and constructions in Latvia existed from 2000 to 2007; while in 2008 and 2009, it was 1%. Since 2010, land, buildings, and constructions have been taxed again at a 1.5% rate (from cadastral values set by the State Land Service in 2007). A differentiated IPT rate is in force from 2010 – 0.1%, 0.2%, and 0.3% of the cadastral value, but in 2011, the differentiated rate on houses doubled – 0.2%, 0.4%, and 0.6% respectively.
6. The enhancement of partially progressive IPT tax will only partially improve the present situation in the field of this tax in the country. Inequalities among IPT taxpayers and tax burdens will remain after passing these positive amendments.

7. Differences in industries determine different abilities of immovable property to generate income and differences in capital liquidity. Revenues gained from immovable properties used for private life, agriculture, and forestry with a very slow turnover of capital may not be compared with revenues from commerce, banking, various services, or entertainment and gambling.
8. Land productivity is still quite low in Latvia and lags behind that in neighbouring developed market economies approximately as many as two times.

Recommendations

1. Irrespective of the existent positive achievements, the work on enhancing the IPT has to be continued. The IPT rates have to be set progressively according to the purpose of use of immovable property and the economic sector.
2. The differentiation of immovable property tax rates according to the purpose of use of immovable property and the industry has to be introduced to set the immovable property tax rates correctly, taking into account the environmental, economic, and social effects and reducing the differentiation of individuals according to their wealth as well as social tension.
3. An untaxed minimum exempt from the IPT tax should be set in Latvia. It might amount to, for instance, LVL 5000.
4. The IPT has to be revised every 5 years after its imposition. Of course, the rates have to be designed in detail when working on the enhancement of the Law.
5. A further moderately progressive differentiation of IPT rates by industry (less progressive than it was in 1990) will protect immovable property owners from bankruptcy, increase the social protection and wellbeing of residents, and reduce social tension. Moderately progressive tax rates are the most appropriate for a situation if both economic development and social factors have to be taken into consideration.
6. The existing system of IPT tax relief has to be retained in Latvia for repressed individuals and municipality residents having a low pension on condition that they use their immovable property only for private needs and for religious, social, cultural, and educational purposes as well as direct municipality needs.
7. One of the main measures to raise the productivity of land is land reclamation. Therefore, the authors believe that it is useful to grant a 30% immovable property tax relief for up to 5 years to those farms, which perform new drainage activities in accordance with a plan, but to those farms, which work on enhancing their existent system of land reclamation – for up to 3 years. It would contribute to the national economy in the future.
8. Considering the principle of social justice, the enhancement of IPT according to the purpose of use of immovable property and the industry has to be continued depending on the following purposes of use: family residential house, multi-apartment house, public institution, combined construction zone, and commercial activity; besides, a period of construction has to be considered as well.

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