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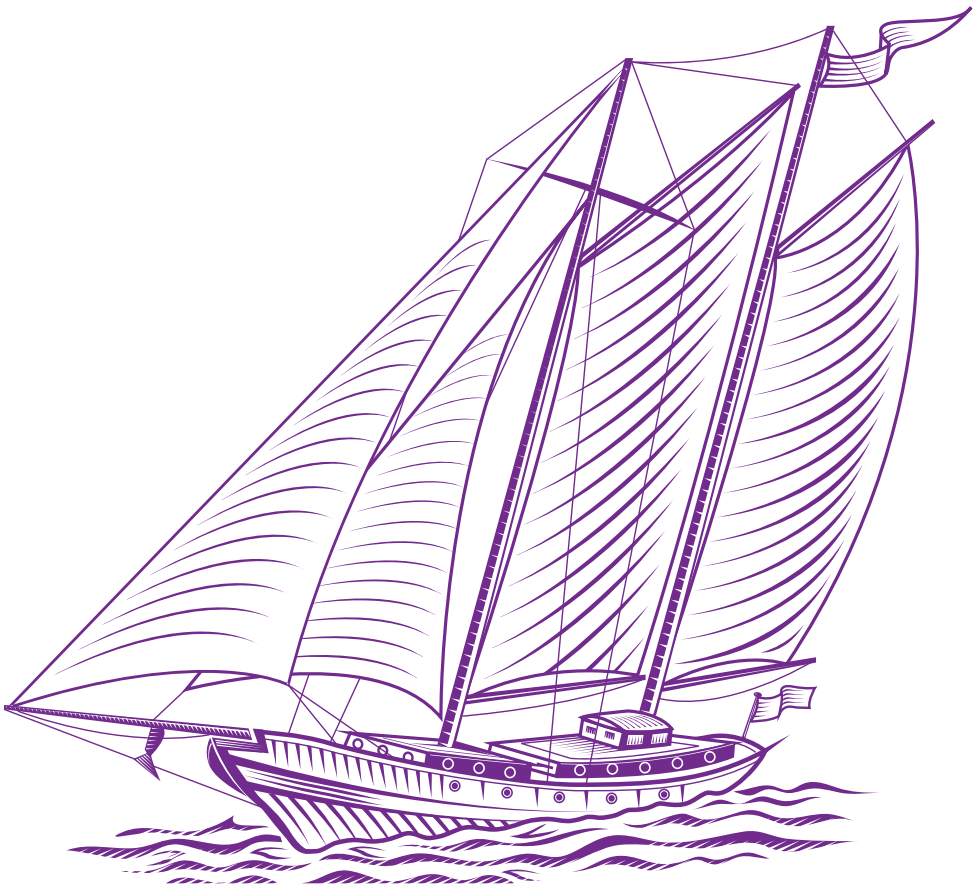

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INTERNATIONAL BUSINESS RESEARCH IN POLAND: CRITICAL REVIEW OF SELECTED PUBLICATIONS

ŁUKASZ PUŚLECKI[1], MICHAŁ STASZKÓW[2], PIOTR TRĄPCZYŃSKI[3]

ABSTRACT. The principal aim of this review article is to provide an account on the structure, topical and methodical diversity of international business research in Poland in the period 1990-2014. To fulfil this objective, a structured literature review combining qualitative and quantitative elements was carried out. Specifically, qualitative content analysis enabled identifying specific research questions within pre-defined research areas of international business. The review allows assessing the relative importance of specific research streams within international business research in Poland, also highlighting their evolution. It turns out that macro- and micro-level internationalisation, followed by international firm competitiveness and international entrepreneurship have consistently dominated among research areas, while their relative share has changed during the analysed period. Quantitative methods, with a clear focus on descriptive statistics, have prevailed in extant research. Apart from a suggested enhanced focus of performance and competitiveness implications of international business activities, interrelationships between macro-, meso- and micro-level variables should be explored to a larger extent. It is arguably the first comprehensive, structured review of Polish contributions to international business scholarship, showing its current state and underrepresented topics in current research.

***Keywords**:* International Business, Literature Review, Poland

JEL classification: F14, F20, F21, F23, M16

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1. Introduction

The fundamental political and economic shift in Central and Eastern Europe (CEE) in 1989 opened both the economies and firms of the region to the global economy. Simultaneously, the discipline of international business and economics started an entirely new chapter after decades of development under the previous socio-economic and political system. Many scholars from the region, both originating from economics and management, took the opportunity to follow the rapid globalisation on the macro- and micro-economic level, by providing conceptual and empirical contributions.

Focusing on Poland as the largest CEE economy, the country has aimed at integrating itself into the world economy by increasing its share of world trade and foreign direct investment (Gorynia et al. 2006). This progressing internationalisation has frequently been regarded as one the main tenets of the transformation of a formerly closed system towards a market-based economy. The new economic policy assumed that the country's reforms and international growth required liberalized prices and market regimes, privatisation of most state-owned enterprises, redirection of its trade from the former Council for Mutual Economic Assistance (CMEA) trading bloc towards the EU, and opening of a bulk of its industries to foreign investment (Gorynia et al. 2003). Moreover, the increasing opening of the foreign economic policy, like in other post-communist countries of the CEE region, involved the introduction of convertibility of the national currency, more liberal customs tariffs, removal of non-tariff barriers to trade, de-monopolization of foreign trade, as well as the introduction of the principle of economic freedom for international business transactions (Gorynia 2002). These changes were further complemented by Poland's accession to international organisations such as the OECD (1996) and especially the European Union (2004).

Overall, the openness of Poland to international business can be synthetically measured by its share of global exports and foreign direct investment (FDI) stocks. In fact, between 1990 and 2010 Poland progressed from the rank of 38th exporter in value terms to the 27th position, while its accumulated value share in the world outward FDI stocks rose from 0,005% to 0,181% (Gorynia 2012). At the same time, the current economic positioning of Poland, like in the case of some

other CEE countries, remains ambiguous. Some international institutions consider the country still as an emerging market (see e.g. MSCI 2013), while others already classify it as an advanced economy (see e.g. UNCTAD 2013). Following Uhlenbruck and De Castro's (2000) claim that economies under transition provide fascinating grounds for refining existing management theories, international business scholarship in the CEE region could potentially contribute to the development of the discipline and its particular topical areas. Thus, the main objective of the present paper is to provide an account on the development of international business research in Poland in 1990-2014. In order to fulfil this aim, the results of a structured review of empirical research from the discipline of international business in Poland are to be presented. The article is organised as follows. First, the research methods used to review the literature are explained. Second, the findings of the review are presented in both quantitative and qualitative terms, including an overview of the content structure of international business scholarship in Poland and its evolution, the identification of key research areas and the addressed research questions, as well as the identification of key research methods and publication outlets. In the final section, indications for further development of the discipline are formulated.

2. Materials and methods

2.1 Assumptions and sample

For the purpose of the delimitation of the review scope, it is assumed that international business concerns "all commercial transactions - private or governmental - between two or more countries" (Daniels & Radebaugh 2001, p. 3-4). However, as Gorynia (2012) argues, international economic activity can be analysed from the perspective of both economics and management, whereby economic explanations are mostly preoccupied with macro-level research questions, while micro-level analyses have predominantly belonged to management science. Thus, in line with the concept of Macharzina (2009, p. 41), the discipline under study is defined broadly as all organisational decision and design problems connected with cross-border operations of an internationally dispersed network of entities.

In order to precise the scope of "international business scholarship in Poland", delimitation occurred along two dimensions: (1) research contributions refer to Polish firms abroad or foreign firms in Poland; (2) author affiliation is with a Polish institution.

While this assumption certainly constitutes a simplification, it clearly confines the scope of the analysed discipline in terms of both empirical objects and authorship, therefore not only providing focused insights on Polish research context, but also on the scope and level of advancement of related studies in Poland. In accordance with the above definition of the discipline, studies related to Polish economy, meso-systems (such as regions or sectors of economy) and firms were taken into account. In order to collect data, keyword search was ran in major journal databases (EBSCO, ScienceDirect, Emerald, Proquest), as well as a Polish database of printed journals (BazEkon). Furthermore, desk research for non-indexed sources, including books, monographs, conference proceedings, etc. aimed at complementing journal articles. Research used dedicated keywords relative to one of the pre-defined categories shown in Figure 1. In consequence, as sample of 215 contributions was attained for the purpose of the present review.

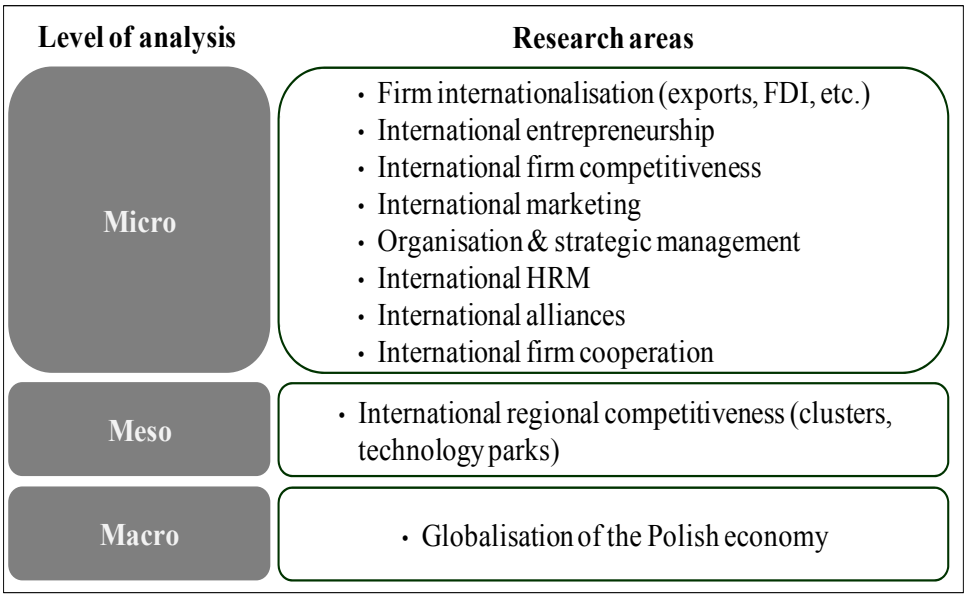

Figure 1. Research categories in international business
Source: authors' work

2.2. Review methodology

Previous research in international business and management has recurred to different review methods, allowing to take a critical perspective on what has been achieved so far and to identify further areas for theoretical development. Given the topical diversity of the reviewed body of empirical research, an initial qualitative analysis (Seuring & Gold 2012) of the gathered papers from the pre-defined research categories (Figure 1) was conducted, which involved the coding of specific research problems, methods and key findings. In order to ensure coding consistency within research areas, responsibility for a given research area was assigned to one researcher at a time. Moreover, a quantitative analysis (Schuh & Rossmann 2009) was performed to reflect the relevance of each area, specific research problems, as well as their evolution. The combination of both qualitative, content-related analysis with the quantitative assessment of the structure of extant research contents and methods was meant to enable the formulation of several conclusions and directions for further research, presented at the end of the paper.

3. Findings of the literature review

3.1. Structure of research areas

Taking into account all research areas in the sample of 215 results, it can be stated that the largest number of publications of Polish authors in years 1990-2014 (27%) is focused on the area of firm internationalisation (Figure 2). The globalisation of the Polish economy (which addresses similar questions to the firm internationalisation, yet on the macroeconomic level) accounts for 17%, while international firm competitiveness for 12%, international human resource management (HRM) for 11% and International Entrepreneurship for 10% of all research areas taken into consideration. This reflects the current position of the Polish economy after the end of the transition process. The increasing internationalisation of both the economy and firms raises relevant research issues related not only to the basic forms of cross-border operations, but to a rising extent also related to the management of cross-border operations, which bears numerous repercussions for distinct functional areas of firm management, as well as inter-firm relationships in an international context.

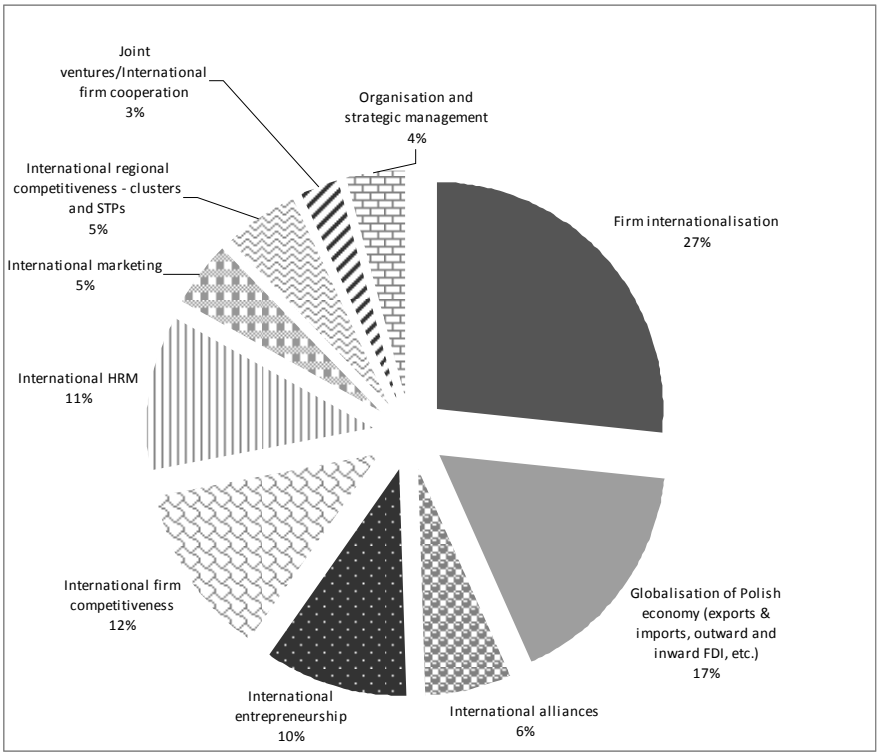

Figure 2. Relative relevance of research areas
Source: authors' calculations

Taking the number of publications in years 1990-2014 into consideration (see Figure 3), it can be observed that the largest number of articles was published in 2013 (33 articles). Analysing the entire period, a positive growing trend in the publication output within international business research in Poland (and on Poland) can be observed, which is another fact clearly correlated with the progressing internationalisation of the empirical objects under study. Particularly since 2004, scholars published more articles annually in different publication outlets. This may be the result of an intensified involvement of firms (both domestic and foreign) in international business, especially after the accession and subsequent integration of Poland in the European Union. Another explanatory factor arguably pertains to a facilitated access of researchers to different databases, which gradually became more widespread among Polish research institutions.

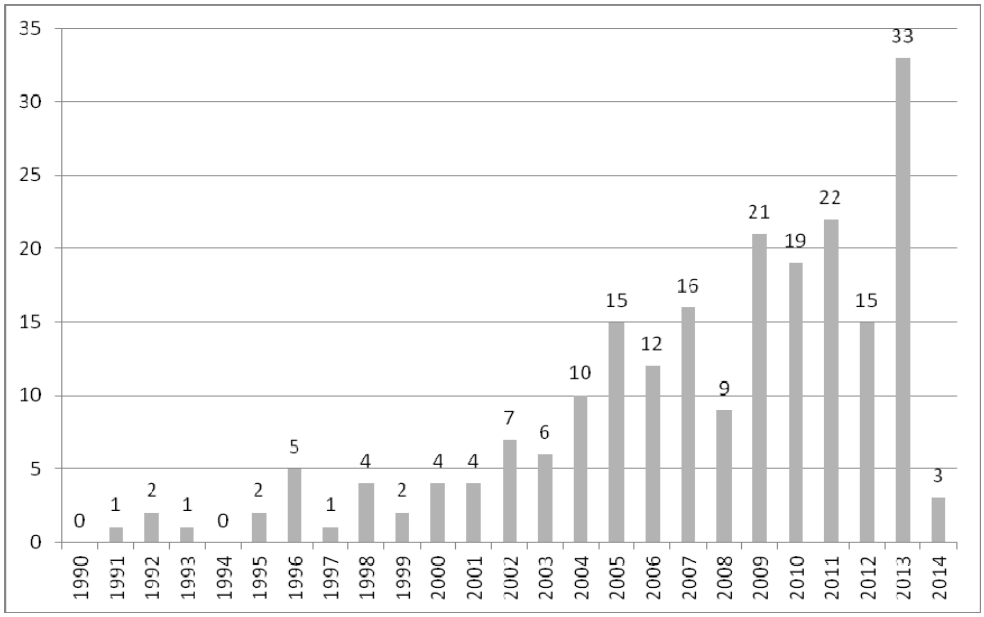

Figure 3. Evolution of the number of publications
Source: authors' calculations

Analysing the evolution of the research area structure (Figure 4) in different periods: 1990-1995, 1996-2000, 2001-2005, 2006-2010, 2011-2014 the authors predominantly focused on firm internationalisation, globalisation of the Polish economy, as well as on international entrepreneurship, particularly in the periods of 2001-2005, 2006-2010 and 2011-2014. In the years 1990-1995, shortly after the initiation of the transition process, there were merely 6 articles published in the areas of international alliances, globalisation of the Polish economy, international HRM, joint-ventures or other forms of international firm cooperation. While it should be taken also into account that it is difficult to gather data on the results of publications in the said period, since many of the can be accessed in paper form, it can be argued that this tendency reflects the aforementioned trend concerning the objects under study. More specifically, an interesting change in the structure of research areas can be observed, namely the increasing attention of scholars paid to outward or active internationalisation of the economy and firms, as opposed to passive internationalisation. This again reflects the progress of the empirical objects, which is followed by scholarship. Inter-firm cooperation

was covered in the 1990s, yet it gradually lost on relevance in favour of the issues related to international firm competitiveness and management-related problems from such functional areas as marketing or human resource management.

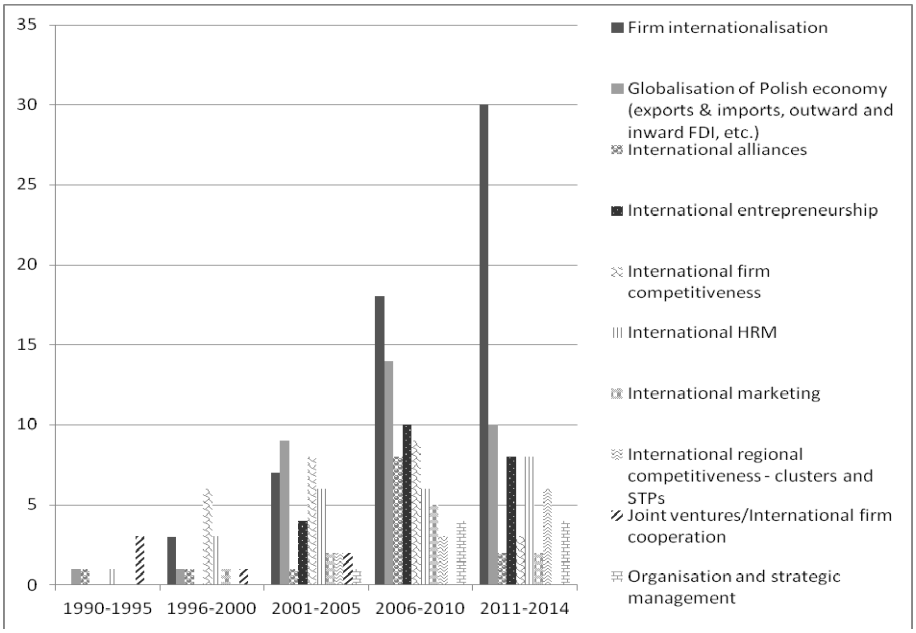

Figure 4. Structural evolution of research areas
Source: authors' calculations

3.2. Research methods and publication outlets

While analysing research methods used by Polish authors in the period of 1990-2014 we can observe that in more than 50% of all articles (52%) quantitative methods were used, with the predominance of descriptive statistics, such as means and frequencies. Meanwhile, primary data were gathered predominantly by the use of surveys. The use of more advanced econometric methods, such as regression analyses (15 articles), cluster analyses (2 articles), or other modelling techniques (2 articles), still remains strikingly limited. In this case, mostly secondary data were analysed. Qualitative methods were used in only 23% of contributions, with a visible predominance of descriptive case studies, based on both primary and secondary data,

and hardly any attempts at theory building by using grounded theory or qualitative content analysis. Regarding the share of theoretical, review or purely conceptual contributions, these could be found in 19% of articles or books. Mixed-method designs (i.e. combining qualitative and quantitative methods) were used in only 6% of articles (see Figure 5).

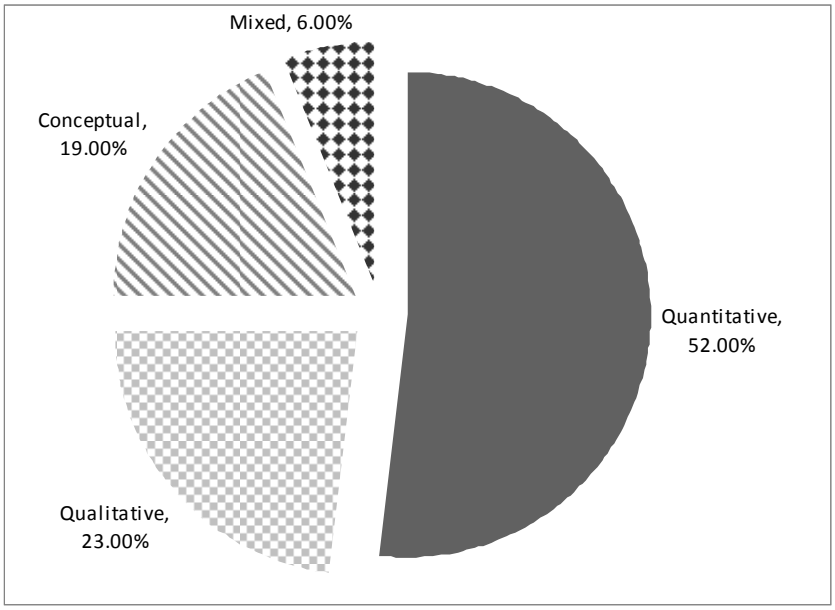

Figure 5. Research methods
Source: authors' calculations

Taking into consideration the publication outlets (Figure 6), the results of the present review indicate that 77% of the publications were scientific articles, while 23% books and book chapters or conference proceedings. The most crucial journal used by Polish authors was Gospodarka Narodowa – with a total count of 19 articles in the sample of 215 results in the entire period of 1990-2014. The second most important journal used by authors was Journal of Economics and Management with 18 articles published in selected period (see Table 1). The weight of particular outlets in the sample can nevertheless be affected by the presence of special issues related to international business (as was the case of the Journal of Economics and Management), thus skewing the actual distribution of publications.

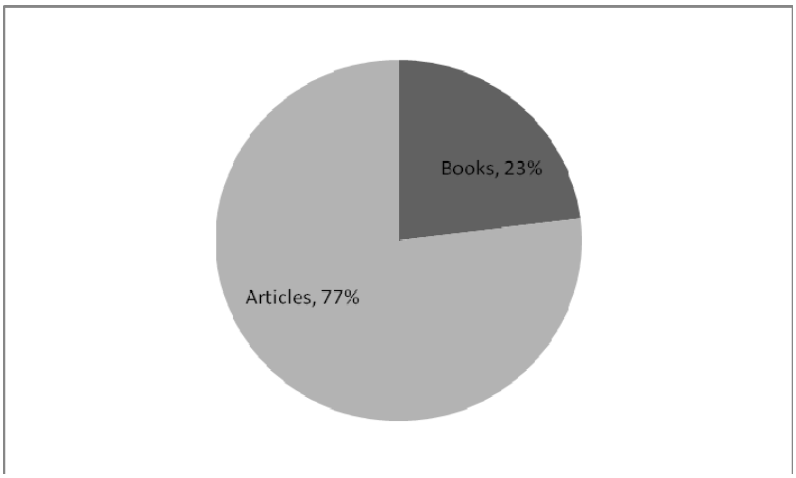

Figure 6. Publication Outlets Books vs. Journals
Source: authors' calculations

Table 1 - Most important journals used by Polish authors concerning IB research in years 1990-2014

Name of the journal	No. of articles
Gospodarka Narodowa	19
Journal of Economics and Management	18
Poznań University of Economics Review	6
Ekonomista	6
Eastern European Economics	5

Source: authors' calculations

3.3. Research topics addressed

Within the conducted qualitative analysis of scientific articles and books, the authors identified and coded detailed research topics within each broader research area, in accordance with the content of contributions. In each research area, research topics can be distinguished that are underrepresented and those which are very widespread amongst Polish scholars. The results of this analysis are presented in Table 2 below. Due to volume constraints, the ensuing discussion does not include all reviewed contributions. The quoted publications merely serve as an exemplification of the observed trends.

Table 2 - Overview of specific research topics within key research area

Research area	Research topic	# of articles
Joint Ventures / International firm organisation	Joint Ventures motives	6
International alliances	Inter-organisational relationships	4
	Alliance portfolio/Alliance network	2
	Comparative analysis	2
	Technological creation	2
	Supply chain management	2
	Clusters	1
International regional competitiveness, clusters and STPs	Technology and knowledge transfer	4
	Institutional environment	4
	R&D market	1
	Cluster cooperation	1
	Tenants analysis	1
International HRM	Career management	7
	Trends in HRM	5
	HRM Overview	4
	Culture	2
	Work performance	2
	Innovation in HRM	1
	Downsizing	1
	Women perspective	1
	Leadership	1
Research area	Research topic	# of articles
Firm internationalisation	Internationalisation paths	14
	FDI motives	14
	FDI location	12
	Entry modes	11
	Internationalisation performance	11
	Firm competitiveness	9
	Internationalisation degree	8
	FDI barriers	6
	Resource determinants	5
International firm competitiveness	Internationalisation degree	8
	Competitive potential	8
	Competitive strategy	6
	Competitive position	6
	Resources	5
	Gap to foreign firms	4
	EU accession	4
	Effect of foreign entry	4
	Economic policy	3
International entrepreneurship	Internationalisation paths	13
	Internationalisation degree	7
	Born global	6
	Entry modes	6

Research area	Research topic	# of articles
	Internationalisation motives	5
	Resource determinants	4
	Competitive potential	4
	Competitive strategy	3
	Performance	2
Globalisation of the economy	FDI location structure	10
	FDI structure by sectors	9
	Export/import development	8
	OFDI/ IFDI ratio development	7
	Export/FDI support measures	6
	FDI externalities	5
	Economic policy	4
	Host-country determinants	4
	Psychic distance	1

Source: own work.

Within the research area related to joint ventures and international firm organisation, there were only 6 articles and all concerned joint ventures motives (Andruszkiewicz & Gronski & van de Ven 2001; Gołębiowska-Tataj & Klonowski 2009; Kostecki, Nowakowski, & Walkowicz 1996; Łuczak 2001; Miciński 1992; Uchman 1991). The second research area was international alliances with 13 articles. The most essential research topic related to inter-organisational relationships (4 articles). Authors focused mainly on the relationship between firms, as well as between firms and other organizations (Guzek 1992), taking into account different aspects: cultural context (Golonka 2013), as well as risk management (Szczepański & Światowiec-Szczepańska 2012), or sources of competitive advantage (Rudawska 2010). The clearly underrepresented topics included notably clusters (Godlewska & Weiss 2007), supply chain management (Kisperska-Moron & Świerczek 2006; De Haan, Kisperska-Moron & Płaczek 2007), comparative studies (Kirby et al. 1996; Lascu et al. 2006), strategic alliances in distribution channels (Mehta et al. 2006), technological cooperation (Arogyaswamya & Kozioł 2005; Puślecki 2009) and alliance portfolio/network management (Puślecki 2009). Thus, there is an urgent need for papers related to technological cooperation, such as strategic technology alliances (STA), different modes of alliances used by Polish firms, alliance portfolios in different sectors, as well as papers focused on alliance management (Puślecki 2010, 2009).

As far as the international regional competitiveness area is concerned, clusters and science and technology parks (STP) research

area most articles were theoretical or conceptual. Researchers focused mainly on the institutional environment (e.g. Dziura 2013; Krzak 2011; Marciniec & Guliński 2002; Piątyszek-Pych 2013), which enables technology and knowledge transfer (e.g. Capello, Olechnicka & Gorzelak 2013; Guliński, Marciniec & Wolniewicz 2002; Jankowska & Pietrzykowski 2013). In this respect, an apparent gap related to cluster cooperation and STP's tenant analysis. In the aforementioned databases, the authors identified merely one article that comprehensively described the structure of tenants of technology parks in Poland and in the world (Marciniec 2007). Research conducted by B. Marciniec requires further development, for since 2007 numerous new institutions of this type there were established. The authors also recognise the need to provide studies concerning STP performance measurement, since both public and private-owned STPs gained on importance in Poland after 2004. The monitoring of performance of technology parks is not simple due to the variety of the legal forms and financing schemes the parks feature. It is normal for a park that is public-funded that generating profit is not its principal aim. However, for private parks to achieve their statutory objectives, including enhancing entrepreneurship and knowledge transfer, it is a prerequisite to generate profit. A good benchmark in this respect are the articles of foreign authors, like Fukugawa (2006), Colombo & Delmastro (2002), Wallsten (2004), Lindelöf & Löfsten (2002).

Researchers belonging to International HRM focused predominantly on career management and new trends in HRM. Many articles in this area were conceived with the use of qualitative studies based on case studies. There appears to be a deficit of scientific papers concerning leadership or women perspective in HRM. On the contrary, the study shows that the most popular research area in Poland is firm internationalisation. In this field quantitative research prevails, in relation to internationalisation paths, FDI motives (e.g. Gorynia, Nowak & Wolniak 2007; Karpińska-Mizielińska & Smuga 2007), FDI locations (Gorynia et al. 2013), entry modes (e.g. Gołębiowski & Witek-Hajduk 2007; Klimek 2011), FDI effectiveness evaluation (e.g. Jaworek & Szóstek 2008) or internationalisation performance (e.g. Doryń 2011). There are relatively few articles regarding FDI barriers and resource determinants (Jaworek 2008). It appears that with several exceptions (e.g. Gorynia et al. 2014; Szałucka 2008; Szałucka & Szóstek 2013), the link between

internationalisation and the performance in foreign markets, as well as MNE performance, has not been strongly accentuated in extant research. Moreover, with several exceptions there have been few attempts at using more advanced qualitative methods to formulate hypotheses for future research. On the other hand, hypotheses have been tested by recurring to descriptive statistics rather than statistical modelling.

Researchers active in the field of international firm competetiveness mainly devoted attention to the variable of internationalisation degree, internationalisation paths and different dimensions of firm competitiveness, by using predominantly descriptive statistics (e.g. Gorynia & Jankowska 2013). It is surprising that while political factors have been studied frequently in the context of Poland's transformation, there is an apparent lack of articles exploring how economic policy shapes firm competitiveness. The penultimate research area is international entrepreneurship, focused on the internationalisation of small and medium enterprises (SMEs), in which common topics are again internationalisation paths, entry modes and internationalisation degree (see. e.g. Wach 2012). One can also note a recent surge of studies devoted to born globals (e.g. Jarosiński 2013), however these still remain at a relatively early, descriptive stage. Therefore, further theorising on the distinctiveness of Polish born globals as compared to more mature contexts is required. Similar to the overall research stream on internationalisation, the most underrepresented topics also feature firm performance the relationship between international entrepreneurship and firm competitiveness. Last but not least, the more macro-oriented research stream on the globalisation of Polish economy focused *inter alia* on FDI location (e.g. Obłój & Wąsowska 2012), FDI sectoral structure and outward to inward FDI ratio development as a sign of economic development (e.g. Gorynia, Nowak & Wolniak 2008). However, there is an apparent deficit of studies related to the influence of economic policy on the internationalisation of the economy, including specific analyses of the system of support measure target at exports and FDI.

4. Conclusions

The present structured literature review is one of the rare comprehensive attempts at analysing the current scope and coverage of

specific research areas in Polish international business scholarship. The major contribution of the paper lies in adopting a systematic approach to reviewing extant studies, which allows demonstrating the relevance of particular research streams, the dominance of specific research questions and, more importantly, the relative paucity of empirical evidence in other aspects which thus constitute promising paths for further theoretical development and empirical efforts.

Obviously, this paper is burdened with a number of limitations. The sample size still requires further enhancement in order to be more representative and avoid the bias in the structure of publication outlets. Moreover, the coding of specific categories within the said research areas, while based on uniform rules among authors, is still exposed to the problem of subjectivism, which can potentially make the allocation of a specific code arbitrary, despite the best efforts of researchers. Also, going into breadth obviously sacrifices depth, which one could criticise in the present review.

However, this first attempt at diagnosing the state of international business research in Poland already does include specific indications as to the areas for future research, as discussed above. Following further progress of Poland's involvement in the international economy, research should move - both on the level of content and research methods - from a rather exploratory to a more normative and theory-enhancing state. The still emerging character of certain phenomena, such as technology parks and clusters, or the international expansion of different types of firms on the other hand, constitute fertile grounds for theoretical development. This, however, requires going beyond the mere motives and forms of different kinds of international operations and focusing more on management and organisational phenomena, which are still visibly underrepresented. Furthermore, the interrelationships between macro-, meso- and micro-level variables, such as the influence of economic policy on a national or industry level on firm strategies, constitutes an interesting direction for further studies.

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THE SMES LIMITED CAPABILITIES IN CREATING AND ADOPTING ORGANISATIONAL INNOVATIONS. A PRELIMINARY STUDY

MAREK ĆWIKLICKI[1]

ABSTRACT. The research objective of the paper is to analyse Small and Medium Enterprises' (SMEs) potential to create and adopt organisational innovations. Reasons for choosing such topic stems from observation that in spite of strong emphasis on proving SMEs importance in innovation processes, some significant restrictions appear. One of the areas influencing operational effectiveness is the readiness for and the ease of absorption innovations that shape and organise the internal processes. In this elaboration organisational innovations are understood as a new way of realising tasks facilitating and improving daily and strategic activities. The first research hypothesis has to some extent a controversial character. It states that the SMEs are not capable of creating organisational innovations. According to the secondary hypothesis, which extends the previous one, the SMEs are the laggards in the diffusion model.

Keywords: organisational innovations, adoptation, SMEs

JEL Classification: O31, O33, L25

1. Introduction

The role of Small and Medium Enterprises (SMEs) in the economy is significant in terms of their number. According to the latest available Annual report on SMEs "some 20.7 million firms accounting for more than 98 per cent of all enterprises, of which the lion's share

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(92.2 per cent) are firms with fewer than ten employees" (Wymenga et al., 2012, p. 9). Nevertheless such big numbers do not convert into development and shaping the future of the national economies, especially if innovations as a driver for growth will be taken as the crucial.

Based on this shortly described background, the issue of joint analysis the SMEs and innovations emerges as interesting for researchers and practitioners. The research objective of the paper is to analyse the SMEs' potential to adopt organisational innovations. Reasons for choosing such topic stems from observation that in spite of strong emphasis on proving SMEs importance in innovation processes some significant limits appear. It is worth mentioning that there is no one way of measuring innovation potential at SME level (Kasa, 2012).

One of the areas influencing operational effectiveness is the readiness for and the ease of absorption innovations that shape and organise the internal processes. In this elaboration organisational innovations are understood as a new way of realising tasks facilitating and improving daily and strategic activities. The first research hypothesis has fairly controversial character. It states that the SMEs are not capable of creating organisational innovations. The secondary hypothesis, which extends the previous one, states that the SMEs are the laggards in the diffusion model.

2. Literature review

2.1. SMEs and Innovations

The data from Eurostat, R&D statistics, and OECD-MSTI 2004 computed by R. Veugelers (2008) show among others that:

- about 75% of R&D expenditures in the EU are accounted for by large firms,
- EU SMEs are less R&D intensive than large EU firms,
- lower percentage of EU SMEs successfully innovate as compared to large firms, both in services and in manufacturing.

It leads to the question: are SMEs naturally disadvantaged in innovation? Results indicate negatively correlation, however not only the size matters, but also the type of market and technology. In spite of this the biggest obstacle to innovate is weak access to finance. The second identified barrier is lack of necessary skills to create innovations. One

should keep in mind that presented conclusions are relevant to R&D that refer mostly to technological aspects of innovations.

The theory lying behind the statements (assumptions) indicated in Introduction emerges from the diffusion model of innovations elaborated by M.E. Rogers. Choosing Rogers's concept as a methodological basis is justified by its adequate explanation for non-material innovations to which organisational innovation belongs. Moreover the author formulated one of the generalisation connected to the research questions: larger organisations are more innovative (Rogers, 2003, p. 409).

Choosing organisational innovations as a research object is warranted by the notion that they co-evolve with technological change. This view is described by K. Sapprasert (2010).

2.2. Organisational innovations as the research object

In the literature there are several definitions of the term "organisational innovation". As K. Sapprasert (2010, p. 3) notes "organisational innovation is often more broadly defined in management/organisation studies as an adoption of »any« novelty in an organisation". According to the OECD it is "the implementation of a new organisational method in the firm's business practices, workplace organisation or external relations" (OECD, 2005).

In the similar manner G. Hamel (2006, p. 75) defines management innovation as "a marked departure from traditional management principles, processes, and practices or a departure from customary organisational forms that significantly alters the way the work of management is performed". However Hamel's proposition is dedicated mainly to managers and, as the author develops his explanations, one may state that it is suitable for big companies.

Another description of management innovation is provided by M.J. Mol and J. Birkinshaw (2006, p. 25) for whom it is "the implementation of new management practices, processes and structures that represent a significant departure from current state-of-the-art practices and are intended to further organisational goals". Their presentation of management innovation is more similar to the organisational one.

Other most common cited definitions of innovation taken from the organisational perspective according to K. Unsworth et al. (2012, ss. 1250004–2) are as follows:

- "An innovation is an idea, practice, or material artefact perceived to be new by the relevant adoption unit" (Zaltman, Duncan, & Holbek, 1973, p. 10);
- "Innovation (...) is generally understood as the introduction of a new thing or method (...) Innovation is the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes, or services" (Luecke & Katz, 2003, p. 2).

Organisational innovations can take different forms. New productions methods (e.g. lean manufacturing), new organisational approach (e.g. 5S programme), new strategic methodologies (e.g. Balanced Scorecard), new organisational structure (e.g. matrix structure) are among them. Such 'soft' solutions play important role in gaining competitive advantage and improving organizational performance that was described by C. Gavrea, R. Stegerean and L. Ilieş (2012) in reference to organizational structure and competitive strategy.

The proposition of management innovation types is given by M.J. Mol and J. Birkinshaw (2006, p. 27) who offer three key dimensions: radical, systematic and platform-based. This scheme (Figure 1) results from the research stating that only such kind of innovation has got the greatest influence on the firm's competitiveness. Some examples given by the authors are: Activity Based Costing, Toyota Production System, Six Sigma, Management by Objectives.

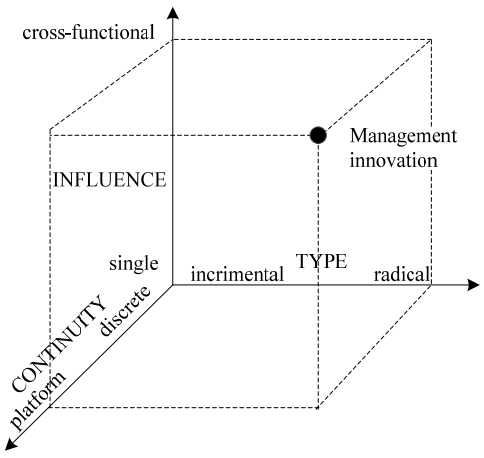

Figure 1. Management Innovation Dimensions
Source: elaborated on (Mol & Birkinshaw, 2006)

Another interesting classification was compiled by (Makó, Csizmadia, Illéssy, Iwasaki, & Szanyi, 2013). The authors used the proposal elaborated by (Armbruster, Bikfalvi, Kinkel, & Lay, 2008) and prepared own typology (Figure 2).

In the author's view the possible classification's criteria could contain: time needed for introduction, cost of replication, number and types of changes forced by innovation.

Creation of organisational innovations requires different resources. Taking into consideration the scope and scale of the organisational innovations it is possible to formulate the following types:

- small – typically perceived as a continuous improvements (kaizen), cheap in introducing, simple, easy one-time implementation, e.g. simplification of office forms;
- medium – usually refers to restructuring the routine, e.g. introduction of new procedure facilitating the electronic data workflow;
- big – requires: changes in supporting technology, time consuming, trainings, sometimes influencing organisational structure (task division), such as accounting software enabling elaboration of new reports and data correlations. This type corresponds to the Mol and Birkinshaw's definition of management innovation.

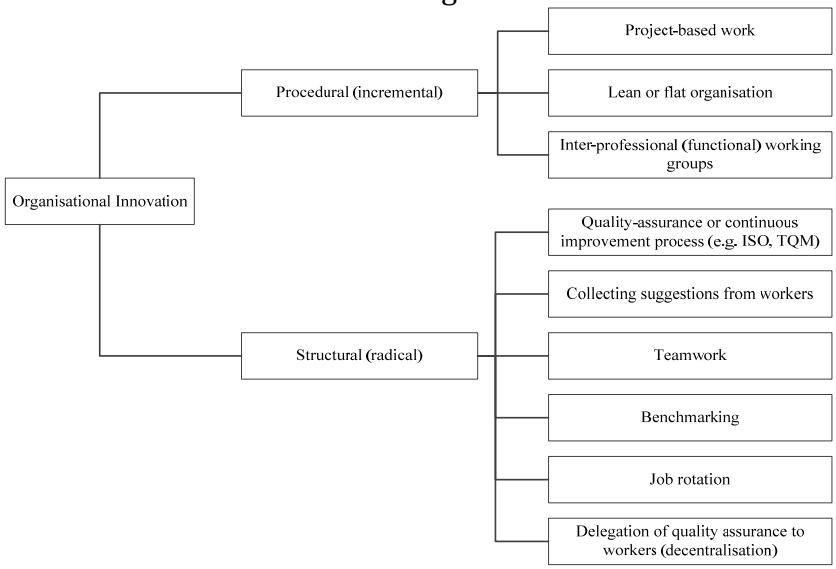

Figure 2. Types of Organisational Innovations

Source: elaborated on (Makó et al., 2013).

2.3. Reasons for SMEs being laggards

M.E. Rogers (2003, p. 413) identified three independent variables influencing the organisational innovativeness such as:

- Individual (leader) characteristics represented by positive attitude toward change;
- Internal characteristics of organisational structure in forms of lower levels of centralisation and formalisation, and higher levels of complexity, interconnectedness, organisational slack, and size);
- External characteristics of the organisation (system openness).

Based upon "several hundred studies of organisational innovativeness" M.E. Rogers formulated another significant for this paper generalisation: "each of the organisational structure variables may be related to innovation in one direction during the initiation phases of the innovation process, and in the opposite direction during the implementation phases" (Rogers, 2003, p. 413).

Organisational innovations such as new methods, tools, etc. require specific resources in order to make them exist within the given organisational environment. The SMEs – as their name also indicates – have lower levels of resources which can be dedicated for elaborating or implementing managerial novelties. For this reason the managers are more careful in spending time and money for additional activities that could be perceived as an extra task to fulfil. Evidently efforts to compete, attempts to become better and better, hard work for fulfilling customers' expectations make pressure to modernise.

Explanations of the situation presented above can be defined as follows. Big organisational innovations requires scarce resources available in the SMEs. One of the most significant is lack of time for undertaking improvements resulting from a limited number of personnel. Furthermore if we bear in mind the adoptation's essentials of the organisational innovations such as a new work routine, the other obstacle occurs: difficulty of replacing old organisational habit by the novel.

The clarifications presented up to this point describe SMEs' path towards organisational innovations as long lasting. However when the decision about implementation of the innovation is undertaken, time of it incorporation is shorter than in large company.

Taking into account the characteristics of innovation receiver and the results of the study undertaken by J.K. Liker et al. (1999) on the adoption of the Japanese management system in the United States of America, other explanations appear. Depending on the receiver's: size, free resources, innovation-dependency, innovations are faster reproduced within small companies thanks to their flexibility and shorter decision making time (Liker, Fruin, & Adler, 1999, ss. 15–18).

3. Material and Methods

The matrix diagram is used in order to investigate relations between the typical SMEs characteristics and described above organisational innovations. This type of diagram was originally created for analysing the dependences among two, three or more variables (Cwiklicki & Obora, 2009; Mizuno, 1988). It belongs to the set of the 7 new quality tools. In the paper two dimensions are juxtaposed (L-type matrix).

The results of the analysis are given on Figure 3. The scale consists of three degrees: weak, medium, and strong relationship. Collating the SMEs capabilities and identified types of organisational innovations some significant correlations appear.

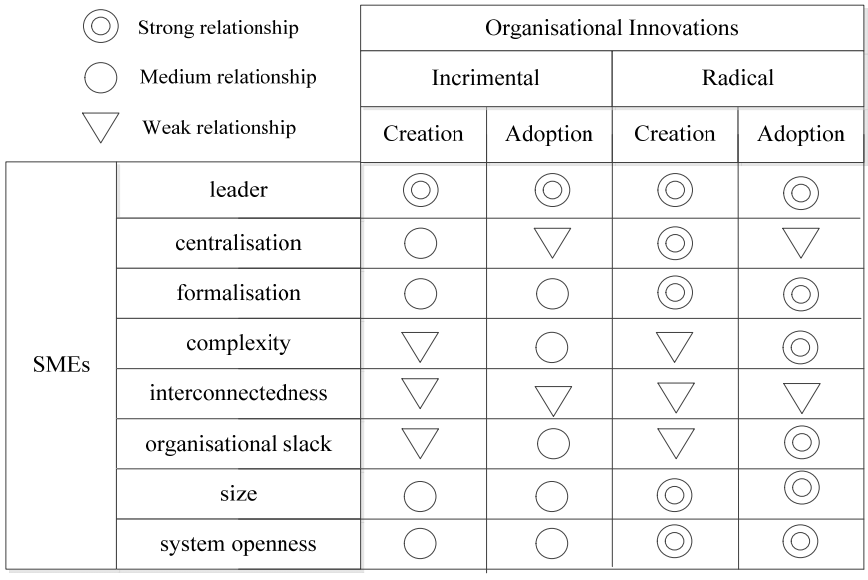

Figure 3. SMEs and Organisational Innovations
Source: own elaboration.

4. Results and Discussions

The detailed analysis of particular element of the SMEs shows that each of them has got different effect on the creation and adoption of incremental and radical organisational innovations type. Mainly it is visible in the two kinds of innovations with slight difference (strength of relationship) in creation and adoption.

The preliminary analysis of interdependencies between characteristics of the SMEs in terms of Rogers's model of innovation creating and adoption show that incremental organisational innovations are more likely to appear in the SMEs. This is due to weaker relationships with their traits comparing with the radical innovations.

Situation changes whilst radical organisational innovations are supposed to occur. In such case the restricted capabilities constrict the creation and adoption this type of innovation.

Obtained results allow the conclusions that elaborated model, based on the secondary data, should become an input for empirical verification. The use of the qualitative tool – to which the matrix diagram belongs – admits flexibility to some extent and also certain imperfection (variation). These limitations of the study gives some indications for undertaking research with regard to different parts of the model. A specific future research plan should be aimed at examination of each of the particular item, For example the problem of leadership in creating and adopting of innovation, its interactions with other component, etc. should be investigated. Data sources should come from primary research which should identify:

- a type of organisational innovation (incremental or radical),
- the strength of relationship between SMEs' characteristics and innovations' type,
- an importance of particular SMEs dimension (leadership, centralisation, etc.) for organisational innovations creation and adoption.

The suggested methodology for such research is a triangulation of the methods. Quantitative methods should be used in order to gather data statistically valid and representative. Qualitative methods should be employ in order to describe a specific organisational innovation which occurs in the given enterprise.

5. Conclusions

In the paper the two main research hypothesis were formulated. The first one states that the SMEs are not capable for creating the organisational innovations was theoretically verified. According to the second one the SMEs are the laggards in the diffusion model, and as a consequence they are more appropriate for adopting innovation, was partially confirmed. The evidence from the literature do not fully allow to conclude that such reasoning is methodologically verified and applied to all the SMEs. Because organisation are different in terms of identified characteristics such as size, level of centralisation, etc., the preliminary analysis is, as its name states, just a proposition which should be further verified. Another proposition is to reconsider the set of identified variables.

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SYNCHRONIZATION OF ECONOMIC SHOCKS IN THE VISEGRAD GROUP: AN EMPIRICAL ASSESSMENT

KRZYSZTOF BECK[1], JAKUB JANUS[2]

ABSTRACT. The main goal of the paper is to assess a degree of coherence of macroeconomic shocks in the Visegrad Group (Czech Republic, Hungary, Poland and Slovak Republic, collectively: V4). We set out to consider the historical decomposition of unobservable supply and demand disturbances among V4 economies from 1995 to 2013. In order to extract the underlying supply and demand shocks in V4 economies we employ a bivariate vector autoregressive model with a long-term structural decomposition (SVAR). The identification scheme is based on the theoretical aggregate supply-aggregate demand model. Thus we assume that supply shocks have a permanent impact on both output and prices, while demand shocks only temporarily influence output. The model parameters are estimated numerically using maximum likelihood method. Once the disturbances are obtained, we build 9-period moving window of correlation coefficients and compute their range as a statistical measure of magnitude. Eventually, based on SVAR decomposition, we construct impulse response functions to structural shocks. Concerning the supply shocks, we find that the correlation among the V4 Group is lower than in any other chosen sub-sample. The V4 countries are characterized by low correlation coefficient both with each other and with other EU economies. Furthermore, the supply shocks in the V4 Group are significantly stronger than in the 'old' member states. When compared to the peripheral EMU countries, the V4 economies show fast adjustment to this type of shocks. The demand shocks among the four economies are described by the highest correlation among all chosen sub-samples. The dynamic approach revealed that the

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synchronization of the demand shocks in the V4 Group was stronger even when compared to the EMU core. The adjustments to the demand shocks in the V4 countries are relatively elastic and these economies tend to converge to long-run equilibria in a fast pace.

Key words: optimum currency area, economic shocks, EMU enlargement, structural VAR, Visegrad Group.

JEL classification: E32, F15, F44, C32.

1. Introduction

The accession of the Visegrad Group countries (the Czech Republic, Hungary, Poland and the Slovak Republic, collectively: V4) to the European Union (EU) in 2004 proved to be a crucial step towards their closer economic integration. As member states of the EU, V4 countries also committed to join the Economic and Monetary Union (EMU) and adopt the single currency. However, nearly ten years after the accession, Slovak Republic is the only one that entered the eurozone (2009), and decisions regarding the adoption of EUR (e.g. appropriate timing and a rate of conversion) in the remaining three countries are subject to fierce debates. The question that is surprisingly rarely asked and notably absent in recent discussions is whether monetary unification would be advisable for the V4 Group as a whole.

The starting point to examine the effectiveness of the further economic integration for a group of countries is often based on the Optimum Currency Area (OCA) theory. The theory states that, among other criteria, overall balance of benefits and costs of integration is dependent on the synchronization of shocks that strikes economies. If disturbances of any source are distributed symmetrically across countries, their business-cycles are prone to be inter-correlated. It is then possible to conduct a single monetary policy which responses are sufficient to counter negative shocks across the entire currency area (one-size-fits-all). What is more, enterprises in these countries operate in the same macroeconomic environment and are subject to shocks of similar characteristics.

The main goal of the paper is to assess a degree of coherence of macroeconomic supply and demand shocks in the V4 economies from 1995 to 2013. We set out to extract approximations of unobservable shocks and to identify, in a comparative manner, their correlations, magnitudes, and adjustment processes afterwards. We specifically test the hypothesis that the similarity of macroeconomic shocks within the V4 Group has increased since its accession to the EU. The analysis is based on the structural vector auto-regression (SVAR) model with the long-run, theory-based restrictions (Bayoumi and Eichengreen, 1992; Blanchard and Quah, 1989), which we estimate using quarterly times-series of real GDP and price levels for the set of 23 EU economies.

The reminder of this paper is structured as follows. Section 2 reviews the theoretical literature on the subject of macroeconomic shocks in the light of the OCA theory and the process of European integration. Section 3 outlines the framework used to identify the disturbances, as well as describes data and its properties. Section 4 reports on the empirical results and discusses our basic findings. Section 5 concludes and points out several areas for the future research.

2. Literature review

Most of the shock similarity analyses have their theoretical bases in the OCA theory built upon seminal works of Mundell (1961), McKinnon (1963) and Kenen (1969). The theory states that in case of asymmetrical demand shocks monetary policy and flexible exchange rate cannot be used to stabilize an economy of a common currency area. As a consequence, only countries with symmetrical distribution of shocks or/and ones having properly working alternative adjustment mechanisms (i.e. elastic wages/prices, mobile labour force or federal fiscalism) can form effectively performing monetary unions. Initially, the authors attributed more symmetrical distribution to a degree of economic openness and diversification of a product-mix in an economy. Although nowadays diversification criterion has been replaced with more adequate similarity of a production structure (Theodoropoulos, 2005).

The original OCA theory was static in its nature, but further research provided more dynamic analysis that produced two contradicting views. The first one, called the 'European Commission View' (Commission

of the European Communities, 1990), states that integrating economies should be characterized with more symmetrical distribution of shocks, due to an increase in intra-industry trade. Along with this view came the hypothesis of the endogeneity of optimum currency area criteria. This notion states that economic integration, through trade creation, leads to a tighter business cycles synchronization (Frankel and Rose, 1996). Opposite argument came to be known as the 'Krugman's View'. The author suggested that ongoing integration leads to a higher specialization in regions with a comparative advantage, making their aggregate demand less stable, and distribution of shocks more idiosyncratic (Krugman, 1993). Even up till now neither of the hypotheses has been fully proved or rejected by empirical research (de Grauwe and Mongelli, 2005).

Due to the fact that economic shocks are unobservable, most of the empirical research on the OCA theory has been conducted through analysis of cyclical components of real GDP which are connected with demand side of the economy. Imbs (2004) using the systematic approach found that business cycles synchronization is affected by trade, patterns of specialization and capital mobility. More recently, same conclusions were reached by Siedschlag (2010), as well as by Dées and Zorell (2011). Using the extreme bound analysis Baxter and Koutraparitsas (2004) proved that trade and gravitational variables robustly influence business cycles synchronization. The same methodology was used by Böwer and Guillemineau (2006) who reported the robust impact of trade, specialization and fiscal policy differences. Beck (2014) using the extreme bound analysis found significant impact of structural similarities and differences in GDP per capita distance on business cycles synchronization. Employing similar methodology, Sachs and Schleer (2013) demonstrated the significant impact of structural reforms and labour market institutions similarity, although the authors concluded that combinations of different institutions had the crucial role for cycles coherence.

Measuring business cycle synchronization in a VAR model, Bordo and Helbling (2010) found that the on-going tightening of business cycles is a global tendency and not a regional phenomenon, like most of the authors suggested. Lehwald (2012), using Bayesian dynamic factor model, also concluded that a great deal of an increasing business cycles synchronization in Eurozone may be attributed to global rather than regional tendencies. Kalemli-Ozcan, Papaioannou and Peydro (2009)

using panel approach found significant impact of capital mobility, while Azali and Lee (2010) concluded that international trade is the main driver of business cycles synchronization. Same conclusions were reached by Silvestre, Mendonca and Passos (2009) who emphasize diminishing marginal impact of trade on cycles correlation.

Even though very popular, business cycles synchronization approach have one significant drawback – it does not correspond directly to the OCA theory. Because economic shocks are unobservable, methods based on their artificial extraction are required. This approach was initiated by Bayoumi and Eichengreen (1992) in their seminal work. The authors found that shock similarity among the core European countries is much stronger than in the peripheral ones.

3. Methods and data

Unlike the main macroeconomic variables, the underlying shocks that affect them are unobservable. For instance, basic statistical time-series analysis of GDP cannot verify whether its dynamics, at a given moment, are influenced by a demand shock, a supply shock or a mixture of both (Lippi and Reichlin, 1993). Consequently, any attempt to investigate similarities of macroeconomic disturbances in V4 countries requires a set of three assumptions that allow for an extraction and measurement of shocks. First of all, one needs to assume how many macroeconomic disturbances there are. Secondly, one has to use an identification scheme (i.e. a theoretical model) to define each shock, as well as to decide what distinguishes a positive and a negative shock. The third assumption describes adjustment processes of the main macroeconomic variables to the particular type of disturbance: direction, magnitude, and their short- and long-run effects.

The theoretical identification in our study is given by the aggregate supply-aggregate demand model (AS-AD). This model allows to reveal basic dependencies between the aggregate production (y) and prices (p), both in static (short-run) and dynamic approach, including adjustments to shocks. Due to the well-known recognition in empirical studies, we employ the New Keynesian version of the AS-AD model (Benigno, 2009). The upward-sloping AS curve consists of the actual and expected price levels, the GDP gap, and allows for the Calvo-style rigidities (Calvo, 1983). The downward-sloping AD depends on the

naturals levels of production and prices, and can be shifted by either fiscal or monetary policies. The long-run aggregate supply curve, independent on the current price level, closes the model. A supply shock in this identification scheme permanently influences both output and price levels. A demand shock only temporarily changes output that gradually returns to its initial level (Fig. 1). The responses to shocks depend on the efficiency of adjustment mechanisms and allow for fluctuations around the long-run equilibria.

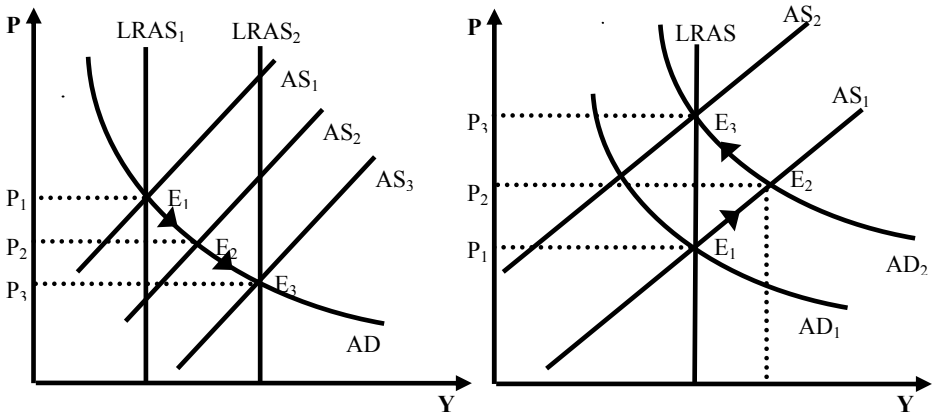

Figure 1. A positive supply shock (left panel) and a positive demand shock (right panel) in the AS-AD framework

Source: adapted from (Bayoumi and Eichengreen, 1992, p. 12).

Once we decide on the theoretical framework, it becomes necessary to choose an estimation procedure for the empirical study. The unobservable shocks can be extracted in a specific version of the SVAR. This approach was firstly developed by Blanchard and Quah (1989) and then adapted to the AS-AD model by Bayoumi and Eichengreen (1992). It requires the estimated system to be a representation of an infinite moving-average process of economic variables (X_t) and economic shocks ε_t, in the form of:

$$X_t = A_0\varepsilon_t + A_1\varepsilon_{t-1} + A_2\varepsilon_{t-2} + \cdots = \sum_{i=0}^{\infty} A_i\varepsilon_{t-i}\,, \qquad (1)$$

where particular elements of matrices A_1 can be interpreted as the reactions of variables X_t to the disturbances. For a bivariate AS-AD system, vector X_t consists of the first differences of the basic variables: Δy and Δp. Using the lag operator L, the equation (1) can be then re-written as:

$$\begin{bmatrix} \Delta y_t \\ \Delta p_y \end{bmatrix} = \sum_{i=0}^{\infty} L^i \begin{bmatrix} a_{11i} & a_{12i} \\ a_{21i} & a_{22i} \end{bmatrix} \begin{bmatrix} \varepsilon_{dt} \\ \varepsilon_{st} \end{bmatrix}, \tag{2}$$

with the underlying supply and demand shocks denoted respectively as ε_{st} and ε_{dt}.

The model defined in equations (1) and (2) is ready to be estimated using vector-autoregression. Assuming that both Δy_t and Δp_t are weakly stationary (integrated of the order of one), according to the Wold's theorem, X_t can be reduced to a bivariate moving-average process:

$$X_t = e_t + B_1 e_{t-1} + B_2 e_{t-2} + \cdots = \sum_{i=0}^{\infty} B_1 e_{t-1}, \tag{3}$$

in which the matrix $B_0 = I$, and the vector e_t consists of the estimated residuals for each dependent variable, e_{yt} and e_{pt}. In order to transform this system into the desired structural model, we need to display residuals in terms of the structural shocks. This can be achieved by comparing equations (1) and (3) that leads us to the following nexus:

$$\forall_i A_i = B_i A_0 \leftrightarrow e_t = A_0 \varepsilon_t. \tag{4}$$

Since there are two disturbances and two variables, the matrix A_0 consists of four unknown elements. Hence, we need four restrictions to properly identify the SVAR. The first two restrictions come from a regular normalization of variance of both shocks. The third one states that supply and demand shocks are independent. The fourth restriction is theory-based and comes directly from the AS-AD specification. If a demand shock only temporarily influences output, then its cumulative effect on the changes in output must be equal to zero:

$$\sum_{i=0}^{\infty} a_{11i} = 0. \tag{5}$$

The last step of the specification involves additional qualitative (over-identifying) restrictions imposed on the model. It was proved by Taylor (2004) that for a given VAR with long-run identification scheme there are exactly 2^N possible parameterizations that fulfil these restrictions. In the case of our model the quantitative identification alone allows for four results of the estimation. With the aim of extracting the actual shocks we assume that an increase in output may be caused by a positive demand or supply shock. This is a key assumption in the section 4.3. where we discuss impulse response functions to shocks.

The empirical estimation of the model covers quarterly data on real GDP and prices (GDP deflator) for the V4 countries and additional 19 European economies[3]. The data covering period 1995q2 to 2013q1was obtained from the Eurostat Database. The GDP time-series were all transformed from nominal to real values. In order to exclude seasonal components from the data a standard X-12 ARIMA procedure was used. Additionally, we applied the ADF test for a unit root[4] (Said and Dickey, 1984), as well the KPSS test for weak stationarity[5] (Kwiatkowski et al., 1992). Both test were run with a constant and a deterministic trend (Tab. 1)[6].

Based on the ADF and KPSS test statistics for levels and first differences of the time-series, we conclude that both output and prices for every country in the sample are I(1). We then compute logarithmic rates of growth, what eventually gives us 72 entries for each country and allows us to estimate a system as in the equation (3).

[3] Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Luxemburg, Netherland, Portugal, Slovenia, Spain, Sweden, United Kingdom. The reliable time-series for Bulgaria, Croatia, Ireland, Malta and Romania do not cover the entire period of 1995-2013.

[4] The number of lags in the ADF equations was chosen using the Akaike information criterion.

[5] The bandwidth for the KPSS was obtained using the Newey-West method.

[6] Although we only report statistics for the V4 economies, the equivalent characteristics for the remaining 19 countries have also been calculated and are available upon request. The same disclaimer applies to the following sections of the paper, including the reaction function to shocks.

Table 1 - Descriptive statistics and integration tests for the real GDP and GDP deflator in the V4 countries (1995-2013)

Country	Real GDP				GDP deflator			
	Average rate of growth (q/q)	Rate of growth standard deviation	ADF p-value	KPSS result	Average rate of growth (q/q)	Rate of growth standard deviation	ADF p-value	KPSS result
Czech Republic	0.006	0.017	0.752	I(1)*	0.012	0.026	0.152	I(1)*
Hungary	0.005	0.010	0.969	I(1)***	0.010	0.031	0.907	I(1)**
Poland	0.011	0.012	0.820	I(1)***	0.009	0.042	0.068	I(1)*
Slovak Republic	0.010	0.021	0.747	I(1)**	0.013	0.029	0.652	I(1)**

Data in natural logarithms. Significance levels: (***) 0.01, (**) 0.05, (*) 0.1.
Source: own calculations.

4. Empirical results and discussion

Based on the procedure presented in section 3., we employ maximum likelihood method to numerically estimated 23 SVAR models for the V4 economies and additional 19 EU countries. Following the recommendation of Bayoumi and Eichengreen (1992) we set exactly the same number of auto-regressive lags in each model. Since most of the commonly used lag-selection criteria (e.g. Schwarz-Bayes, Akaike) indicated four lags for the majority of models, we decided to use this specification all across the sample. Once the models were estimated, we applied diagnostic tests for residuals (e.g. normality, auto-correlation) and found out that there is no clear statistical evidence to reject the models. We thus conclude that models are robust and can be used to infer on the synchronization of structural shocks. For each country in the sample, for instance Poland (Fig. 2), we obtain historical decompositions of supply and demand shocks. Based on these approximations we then calculate correlation coefficients, and build impulse response functions to structural disturbances.

a. Correlations of shocks: static and dynamic approach

Firstly average values of correlation coefficient for demand and supply shocks were calculated for the entire period. Taking into account different geographical areas, correlation coefficients were computed for

the whole sample (whole), euro area (ea), core countries[7] (core), peripheral countries[8] (per), core and periphery[9] (core-per), and V4 countries. Descriptive statistics for the groups are presented in Tab. 2.

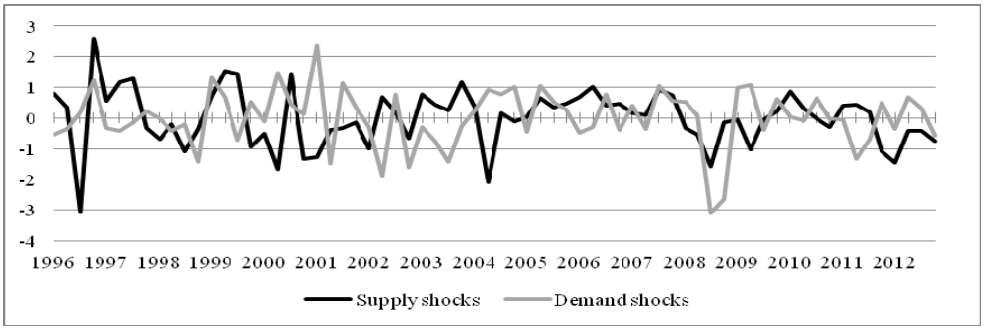

Figure 2. The SVAR approximations of supply and demand shocks in Poland (1996q2-2013q1)

Source: own calculations.

Table 2 - Descriptive statistics of correlation coefficients of supply and demand shocks for of EU countries (1996q2-2013q1)

Supply Shocks						
Sample	**whole**	**ea**	**core**	**per**	**core-per**	**V4**
Mean	0.288	0.321	0.416	0.268	0.312	0.209
Median	0.294	0.338	0.410	0.268	0.325	0.252
Maximum	0.647	0.647	0.627	0.544	0.647	0.331
Minimum	-0.06	-0.028	0.203	-0.028	0.048	-0.060
Standard Deviation	0.146	0.149	0.122	0.132	0.152	0.141
No. of observations	253	105	21	28	56	6
Demand Shocks						
Sample	**whole**	**ea**	**core**	**per**	**core-per**	**V4**
Mean	0.041	0.025	0.137	-0.028	0.01	0.243
Median	0.04	0.022	0.137	-0.043	0.002	0.259
Maximum	0.677	0.451	0.451	0.265	0.436	0.494
Minimum	-0.403	-0.287	-0.135	-0.287	-0.248	0.070
Standard Deviation	0.165	0.15	0.144	0.134	0.141	0.151
No. of observations	253	105	21	28	56	6

Source: own calculations.

[7] Austria, Belgium, France, Germany, Italy, Luxemburg and Holland.
[8] Cyprus, Finland, Greece, Portugal, Slovakia, Slovenia and Spain.
[9] Excluding relations within core and within periphery groups, e.g. Germany and Greece, but not Germany and France nor Greece and Spain.

The correlation of supply shocks is generally higher than of demand shocks with the exception of V4 Group where values are comparable. The correlation of supply shocks in V4 countries is lower than in any other analyzed sample. The corresponding characteristic of supply shocks is particularly strong among core countries of the EMU, which should not be surprising taking into consideration their high GDP per capita levels, structural similarities and a longer time of the on-going economic integration. More unexpected results come from the analysis of demand shocks similarities. In this case, the correlation of shocks among V4 countries is by far the highest (0.243). Even core countries of the euro area are characterized by lower demand shock correlation (0.137). This result implies that among chosen sub-samples V4 countries are best candidates to form a monetary union. Very high correlation of shocks among V4 countries means that a common monetary authority should be able to effectively implement monetary policy that would serve the interest of the entire area.

In the next step, we calculate pairwise correlation of shocks of V4 with the rest of the sample. Pairwise results for the supply shocks are presented in Tab. 3.

Table 3 - Pairwise correlation coefficients of supply shocks of V4 with EU countries (1996q2-2013q1)

Poland		**Hungary**		**The Czech Republic**		**The Slovak Republic**	
Country	**r**	**Country**	**r**	**Country**	**r**	**Country**	**r**
Belgium	0.319	Sweden	0.506	Germany	0.503	Lithuania	0.463
Italy	0.256	Italy	0.488	Slovenia	0.497	Slovenia	0.396
Austria	0.253	Slovenia	0.457	Italy	0.469	UK	0.384
Czech Republic	0.244	Belgium	0.416	Sweden	0.446	Hungary	0.331
Sweden	0.193	Lithuania	0.403	Finland	0.425	Sweden	0.326
Denmark	0.188	UK	0.402	Holland	0.377	Holland	0.308
Hungary	0.186	Latvia	0.388	Lithuania	0.367	Germany	0.294
UK	0.142	Spain	0.385	France	0.364	Czech Republic	0.292
Luxemburg	0.135	Germany	0.361	Austria	0.341	Portugal	0.283
Lithuania	0.122	Slovak Republic	0.331	Estonia	0.335	Estonia	0.283
Germany	0.108	Austria	0.327	Spain	0.305	Cyprus	0.272
Holland	0.107	France	0.321	Slovak Republic	0.292	Spain	0.263
Finland	0.102	Estonia	0.295	Hungary	0.260	Greece	0.240

Poland		Hungary		The Czech Republic		The Slovak Republic	
Country	**r**	**Country**	**r**	**Country**	**r**	**Country**	**r**
Slovenia	0.098	Czech Republic	0.260	Belgium	0.257	Denmark	0.236
France	0.096	Luxemburg	0.228	Poland	0.244	Latvia	0.221
Estonia	0.084	Finland	0.221	Denmark	0.239	Luxemburg	0.185
Portugal	0.050	Portugal	0.207	Portugal	0.234	France	0.176
Spain	0.038	Holland	0.193	UK	0.213	Austria	0.174
Latvia	0.016	Poland	0.186	Luxemburg	0.191	Finland	0.151
Greece	0.008	Denmark	0.186	Latvia	0.096	Italy	0.148
Cyprus	-0.043	Greece	0.172	Cyprus	0.051	Belgium	0.134
Slovak Republic	-0.060	Cyprus	0.114	Greece	0.048	Poland	-0.060

Source: own calculations.

There seems to be no general tendency in the supply shocks correlation among V4 countries. The highest values of the correlation coefficient were reported for Hungary and Slovakia (0.331) as well as for the Czech Republic and Slovakia (0.292). The lowest and negative synchronization of supply shocks were reported in case of Poland and Slovakia (-0.060). This result might be explained by high differences in their production structures. Pairwise results for demand shocks are presented in Tab. 4.

The analysis of demand shocks similarity brings about more clear-cut conclusions. Firstly, Poland and the Czech Republic are characterized by extremely high correlation coefficient of demand shocks (0.494), which implies that they are very good candidates for a monetary union formation. Secondly, in case of Czech Republic, the two best candidates for a common currency introduction are respectively Poland and Hungary (0.269), and in case of Hungary, Poland (0.264) and the Czech Republic. Taking into consideration the fact that regarding Poland, Hungary is the third country with the highest correlation coefficient, one might consider that these three countries are eligible candidates to form a monetary union. The situation, however, is different in for the Slovak Republic. Slovakia is characterized by a relatively high correlation coefficient of demand shocks only with Poland (0.255), and by rather low ones with Czech Republic (0.070) and Hungary (0.105). This differences could be attributed to the fact that Slovakia has already entered the EMU, but the country reveals even lower correlation coefficients with most of the core countries (with exception of Belgium).

Table 4 - Pairwise correlation coefficients of demand shocks of V4 with EU countries (1996q2-2013q1)

Poland		Hungary		The Czech Republic		The Slovak Republic	
Country	**r**	**Country**	**r**	**Country**	**r**	**Country**	**r**
Czech Republic	0.494	Czech Republic	0.269	Poland	0.494	Belgium	0.436
Denmark	0.330	Poland	0.264	Hungary	0.269	Cyprus	0.265
Hungary	0.264	Finland	0.231	Finland	0.191	Poland	0.255
Latvia	0.258	Greece	0.176	Denmark	0.183	Lithuania	0.185
Slovak Republic	0.255	Cyprus	0.157	Belgium	0.154	Latvia	0.153
Sweden	0.251	Sweden	0.150	Slovenia	0.148	Hungary	0.105
Finland	0.249	Latvia	0.142	Austria	0.102	Greece	0.096
Belgium	0.238	Germany	0.139	Lithuania	0.102	Denmark	0.081
Cyprus	0.237	Lithuania	0.108	Holland	0.086	Spain	0.081
Lithuania	0.194	Slovak Republic	0.105	Portugal	0.072	Finland	0.075
Greece	0.149	Denmark	0.077	Slovak Republic	0.070	Czech Republic	0.070
Germany	0.134	Portugal	0.069	Germany	0.062	France	0.062
France	0.127	UK	0.066	Greece	0.022	Sweden	0.023
Holland	0.061	Estonia	0.029	Sweden	0.004	Holland	-0.010
Austria	0.040	Slovenia	-0.004	France	-0.036	Portugal	-0.019
UK	0.001	Belgium	-0.008	UK	-0.048	UK	-0.048
Spain	-0.007	Italy	-0.012	Italy	-0.064	Italy	-0.050
Luxemburg	-0.029	Holland	-0.078	Spain	-0.108	Germany	-0.052
Italy	-0.070	France	-0.094	Cyprus	-0.114	Austria	-0.063
Portugal	-0.088	Luxemburg	-0.119	Estonia	-0.124	Estonia	-0.082
Estonia	-0.100	Spain	-0.157	Latvia	-0.141	Slovenia	-0.132
Slovenia	-0.113	Austria	-0.193	Luxemburg	-0.151	Luxemburg	-0.179

Source: own calculations.

Insofar analysis had a static nature. The degree of demand and supply shocks correlation was examined with respect to a given period of time. The results of a dynamic approach are presented as a 9-element rolling window of correlation coefficient[10]. The calculations for V4 pairs of countries and average value for the whole V4 Group, as well as for the core countries of the EMU are presented in Fig. 3 and Fig. 4.

[10] The computations obtained using 11- and 13-elements rolling window led to the same conclusions and are available upon request.

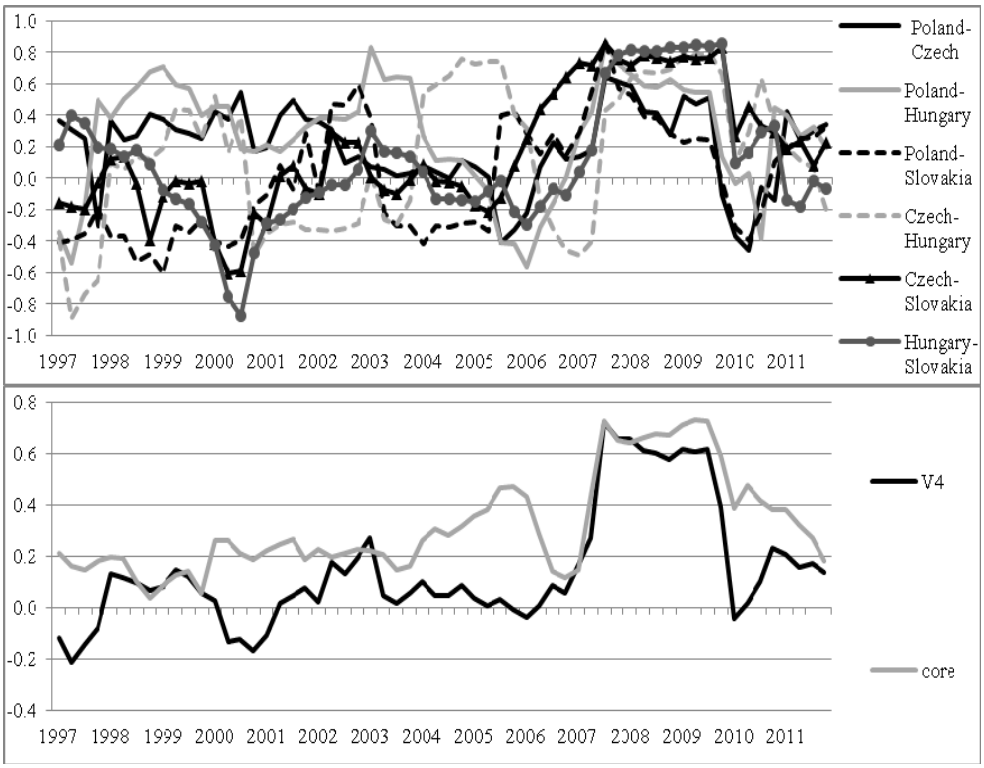

Figure 3. Supply shocks: pairwise correlations of V4 countries and average correlations of the EMU core and V4 in nine-element rolling window (1996q2-2013q1)

Source: own elaboration.

The analysis of pairwise correlation coefficients reveals no tendencies over time with respect to both demand and supply shocks with two considerable exceptions. In case of demand shocks, one can observe a sharp increase in values of correlation for early stages of the crisis and the downturn right afterwards (ca. 2007-2009). This might indicate that the economies of V4 countries reacted similarly at the beginning of the crisis, but due to differences in economic fundamentals and implemented policies they subsequently diverged. Similar conclusion can be derived from the observation of supply shocks correlation. The only difference being that the higher synchronization of supply shocks prevailed longer, which can be attributed to more profound consequences of crisis on the supply side of the V4 economies.

The investigation of the average values of correlation coefficients for V4 and the EMU core countries leads to two main conclusions. Firstly, over almost the entire period demand shocks of V4 were more closely correlated than these of core countries, although the variability in case of V4 was higher. Once more this suggests that V4 countries are better prepared to form a monetary union than countries of the Eurozone core. Secondly, similarity of supply shocks was higher during the whole period regarding the core countries, but both groups experienced a sharp increase in the correlation of supply shocks at the beginning of the crisis, that was sustained for almost until 2010.

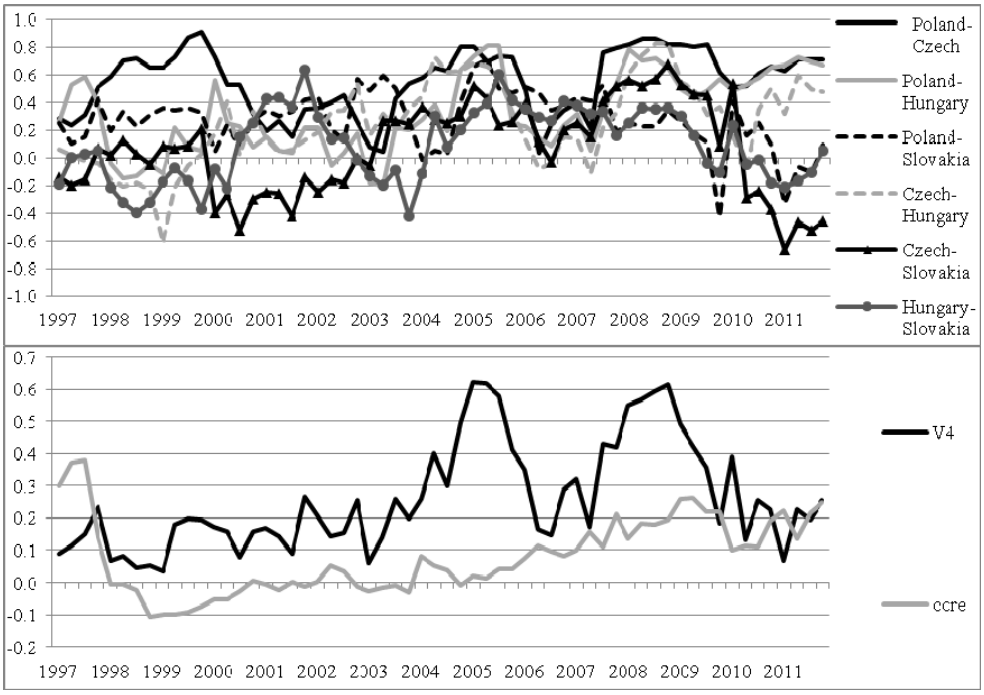

Figure 4. Demand shocks: pairwise correlations of V4 countries and average correlations of the EMU core and V4 in nine-element rolling window (1996q2-2013q1)

Source: own elaboration.

b. Magnitudes of shocks

In addition to the correlation structure of supply and demand disturbances, the SVAR framework allows for estimation of the magnitude

of shocks. If the relative size of shocks in particular countries strongly differ, it will be more costly for each of them to join a monetary union, and submit to a common monetary policy. Consequently, the basic criteria of the OCA may not be satisfied. As a statistical measure of the magnitude of shocks we use their range, defined as a difference between the strongest positive (maximum) and strongest negative (minimum) disturbance for each economy in the sample[11]. We compute these values for the V4 countries, as well as for the geographical areas set in the section 4.1. (Tab 5.).

Regarding the supply disturbances, the V4 economies are in general subject to relatively strong shocks. The range for the core of EMU is 13.38% lower than for the V4 Group, and the corresponding value describing peripheral countries is 2.12% smaller. Interestingly enough, when compared to the average value of supply disturbance in the V4 countries is close to the mean value of the whole sample. Within the V4 Group, the Czech Republic is characterized by the least persistent supply shocks, 8.27% weaker than for the whole group. This result may be attributed to the highest GDP per capita level in this country.

Table 5 - Range of supply and demand shocks in the EU countries (1996q2-2013q1)

Supply disturbances			Demand disturbances		
Country/Group of countries	Range	Difference from V4 (in %)	Country/Group of countries	Range	Difference from V4 (in %)
core	4.732	-13.38	core	4.196	-21.53
Czech Republic	5.011	-8.27	Czech Republic	4.755	-11.09
per	5.347	-2.12	ea	5.302	-0.86
ea	5.401	-1.13	V4	5.348	-
whole	5.447	-0.29	whole	5.421	1.37
V4	5.463	-	Poland	5.456	2.02
Hungary	5.521	1.06	Hungary	5.538	3.55
Poland	5.655	3.51	Slovak Republic	5.643	5.52
Slovak Republic	5.666	3.71	per	5.850	9.40

Source: own calculations.

[11] Alternatively, we calculated several more robust measures of the size of shocks, e.g. the inter-quantile range for 0.9 and 0.1 quantile. This exercises, however, produced results congruent with the basic analysis.

The magnitude of the demand disturbances reveals a higher variability across the sample than for the supply ones. The core of the EMU is again characterized by the lowest magnitude, 21.53% smaller then the V4 Group. On the contrary to the supply shocks, the demand disturbances for the peripheral countries of the EMU are 9.40% stronger than for the V4 group. The evidence supports the notion that the V4 economies demand shocks could be mitigated by a common monetary policy. Among the four countries, Czech Republic reveals the lowest, and Slovak Republic the highest size of the demand disturbances.

c. Adjustments to shocks

The estimated bivariate SVAR system may be also used to bring evidence on the adjustment processes to economic shocks across countries. The identified shocks follow the theoretical AS-AD framework. We define them as reaction functions to structural disturbances, as presented in the section 3. The expected reaction function to supply shocks is based on the assumption that the shocks have permanent effect on output[12] (Fig. 5). Demand shocks, on the other hand, only temporarily influence output (Fig. 6). The pace of adjustment to shocks in particular economies depends largely on their structural characteristics, such as the degree of economic openness, elasticity of production factors or their foreign-exchange regime. These differences are captured by heterogeneous shapes of the estimated functions, which we report for all the V4 countries and compare them to the selected EU economies.

The shapes of the supply disturbance for the V4 economies strictly follow the theoretical pattern. The initial effect of supply shocks on output is significant and stabilizes in each country after maximum ten quarters (Fig. 5). There is a clear evidence the largest economy in the V4 (Poland) possesses the highest ability to absorb shocks, while in Hungary supply disturbances reveal an increasing effect on GDP up to eight quarters after their detection. The adjustment to supply shocks was fastest in the core EMU countries (France, Germany), where the ratio of the value of response function to their long-run level is around 0.99. The functions for Poland and the Czech Republic can be consider similar to some of the smaller EMU economies, for instance the

[12] In order to keep the discussion of results concise, we focus solely on the responses of output to structural shocks and omit corresponding functions for prices, which are of lesser interest to this paper.

Netherland. The entirely different adjustments can be identified for the peripheral EMU countries (Greece, Spain). Their functions absorb only c.a. 75% of shocks in the first eight quarters, and are still non-stationary after four years of adjustments. Confronted with the reaction functions of the peripheral countries, the response patterns of the V4 countries to supply shocks seem to be relatively smooth and homogenous.

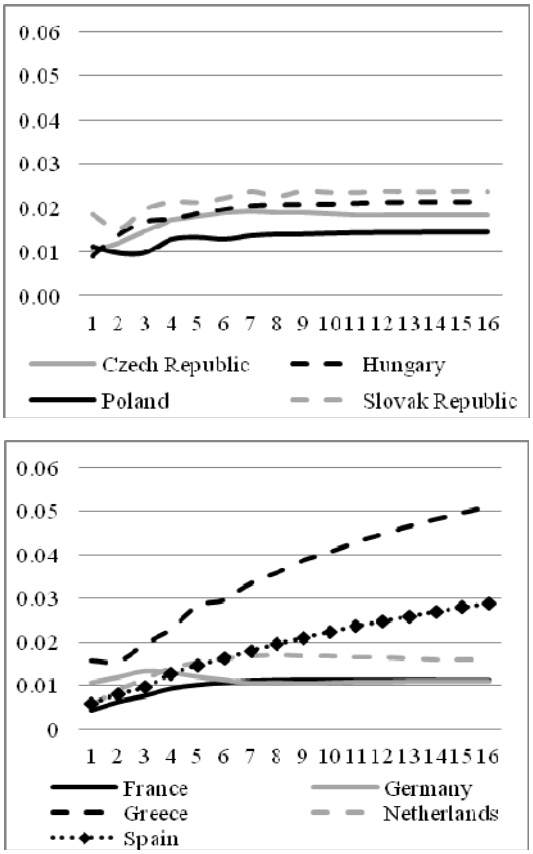

Figure 5. Supply shocks: impulse response functions of output in the V4 and selected EU economies

Source: own elaboration.

The response functions built for demand disturbances in the V4 countries also fit the AS-AD framework (Fig. 6). Except for the Slovak Republic, which oscillates around the equilibrium substantially longer, the shocks in the V4 Group gradually extinguish and return to the

baseline after c.a. six quarters. The demand disturbances in other EU economies are considerably more idiosyncratic. There are examples of high sensitivity to shocks (Greece), their long-lasting persistence (France), and strong overshooting in the adjustment (Germany). The reaction of these economies to demand shocks, as measured in the sixth quarter, are either above or below the level to which V4 economies converge. Overall, when compared to other EU economies, the V4 countries are characterized by relatively elastic adjustment to demand shocks and absence of any significant volatility.

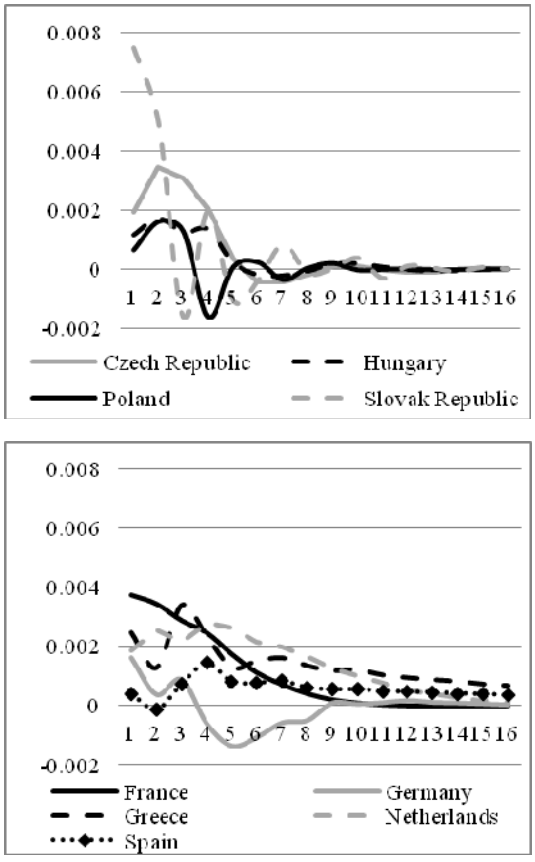

Figure 6. Demand shocks: impulse response functions of output in the V4 and selected EU economies

Source: own elaboration.

5. Conclusions

The main goal of the paper was to assess a degree of coherence of macroeconomic supply and demand shocks in the V4 economies from 1995 to 2013. The investigation was based on the SVAR model with the long-run, theory-based restrictions. This framework allowed us to identify the underlying disturbances in the V4 countries and additional 19 EU economies. The comparative analysis and assessment of the shocks characteristics led us to numerous conclusions, the most important of which we present below.

Concerning the supply shocks, we find that the average correlation among the V4 Group is lower than in any other chosen sub-sample of countries, particularly the core EMU economies. This result was confirmed successively using the static and dynamic approaches. The pairwise analysis also revealed that the V4 countries are characterized by low values of correlation coefficients both with each other and with the remaining EU economies. Furthermore, the magnitude of supply shocks in the V4 Group is significantly stronger than in the 'old' member states. When compared to the peripheral EMU countries, the V4 economies show fast adjustment to this type of shocks.

In spite of the differences identified with respect to the supply shocks, the demand ones give a better justification for the readiness to form a monetary union by the V4 countries. The demand shocks within the four economies are described by the highest correlation among all the chosen sub-samples. The dynamic approach showed that over the entire period of 1996-2013 the synchronization of the demand shocks in the V4 Group was getting tighter, even when compared to the EMU core, often exemplified as an optimum currency area. The pairwise correlations exposed that the Czech Republic and Poland are eligible to unify their currencies, and they also constitute, among all the analysed countries, the best two partners for Hungary to join a currency union. The magnitude of the demand shocks in the V4 economies is higher than in the EMU core, but significantly lower than the corresponding values for the peripheries of the Eurozone. It should be noted, that the adjustments to the demand shocks in the V4 countries are relatively elastic and these economies tend to converge to long-run equilibria in a fast pace. Our findings generally imply that, regarding cohesion of economic shocks, V4 countries as a whole fulfil substantial criteria of an optimum currency area and could benefit from the adoption of a single currency.

The authors are, however, aware of the limitations of the undertaken methodology which allows for extraction of only two main economic shocks. The analysis could be enriched if we considered separately more types of shocks, specifically real and nominal ones. The future research could be also enhanced by employing Bayesian inference techniques and the European regional-level data.

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(RECOMMENDED CITATION)

INNOVATION IN RURAL TOURISM – EVIDENCE FROM CLUJ COUNTY

VALENTIN TOADER[1], OANA ADRIANA GICĂ[2]

ABSTRACT. Innovation in rural tourism represents a source both for increasing productivity and for improving tourists' satisfaction as well. The main benefits reported by innovators are a significant increase in the number of tourists and in the length of stay, while the others are struggling to attract tourists. The purpose of this paper is to analyze the innovation activities implemented by the units acting in Cluj County's rural tourism. We applied a semi structured interview with business owners based on OECD approach of innovation. We focused on the identification of innovative activities (product innovation, process innovation, organizational innovation and marketing innovation) and on the innovation's sources, obstacles and results. We also tried to describe the profile of the innovator in terms of age, level of studies, experience in tourism before starting the business or training in tourism.

Keywords: product innovation, process innovation, organizational innovation, marketing innovation, rural tourism

JEL Classification: L83, O31

1. Introduction

Tourism makes an important and increasing contribution to economic growth and accounts for about 30% of international trade in services in the European area. It also represents one of the best opportunities to create income and employment for less developed

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countries and regions (Korres, 2008:136). Also, the major sectors driving developments in the rural regions of European Union are: energy, tourism, transport, industry, and agriculture (Korres, 2008:137).

Many rural areas are among the most dynamic territories in the European Union, whereas many others suffer due to low population density, a lack of basic services, an inadequate labour market and low basic infrastructure. Innovation activities and new technologies contribute substantially towards the modernization process and the competitiveness level. It is quite important to develop the countryside as a space for recreation and "green tourism", in order to support the renovation of the villages, encourage agriculture and forestry in their function of maintaining landscapes and respect the environment and natural resources (Korres, 2008:137).

Small and medium sized enterprises, dominant in tourism sector, have to achieve economies of scale and scope in order to reduce transaction costs, increase productivity and gain market power in order to survive in an increasingly competitive and global environment. Horizontal and vertical integration and also flexible structures that encourage product, marketing and organizational innovation help enterprises to adapt to changes and increase their competitiveness (Weiermair, 1998).

Tourism is considered a highly competitive sector therefore companies acting in this field need to be innovative. However, research on the fields of innovation behavior in tourism has been limited and insufficient (Weiermair, 2004).

The purpose of this paper is to analyze the innovation activities implemented by the units acting in Cluj County's rural tourism. We focused on the identification of innovative activities (product innovation, process innovation, organizational innovation and marketing innovation) and on the innovation's sources, obstacles and results. We also tried to describe the profile of the innovator in terms of age, level of studies and experience in tourism before starting the business or training in tourism.

2. Literature review

Innovation activities and the new technologies are closely related with market competitiveness and the productivity level. Innovative activity has been one of the most important components for the long-term economic growth (Korres, 2008:136).

OECD considers that 'An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations' (OECD & Statistical Office of the European Communities, 2005, p. 46). Four types of innovations are identified:

(1) Product innovations – new or significantly improved goods or services;

(2) Process innovations – new or significantly improved methods for production or delivery (operational processes);

(3) Organizational innovations – new or significantly improved methods in a firm's business practices, workplace organization or external relations (organizational or managerial processes);

(4) Marketing innovations – new or significantly improved marketing methods.

Product or service innovations refer to changes directly observed by the customer and regarded as new; either in the sense of never seen before, or new to the particular enterprise or destination. Product or service innovations are perceptible to tourists to such an extent that they may well become a factor in the purchase decision (Hjalager, 2010). Studying innovation in tourism, Decelle (2004) emphasized that product innovation is the most common innovation type in tourism, but in the same time is the easiest to imitate. Blake, Sinclair and Soria (2006:1107) reached a similar conclusion, the entrepreneurs in tourism considering the product and marketing innovations the most important types of innovation for tourism sector.

Process innovations refer typically to backstage initiatives which aim at escalating efficiency, productivity and flow. Technology investments are the anchor of mainstream process innovation, sometimes in combination with reengineered layouts for manual work operations. Process innovations may be platforms for improved services that will be recognizable to the customer and add to the value of the product (Hjalager, 2010). Studies conducted on the topic of innovation in tourism conclude that technology is used to improve employee productivity and enhance revenues and limited strategic priority is given to technologies designed to improve guest services in the case of lodging units (Martin, 2004; Sundbo et al., 2007).

In the category of organizational innovations are included new ways of organizing internal collaboration, directing and empowering staff, building careers and compensating work with pay and benefits (Ottenbacher & Gnoth, 2005), as well as new ways of improving workplace satisfaction and nurturing internal knowledge and competence assets (Hall & Williams, 2008; Shaw& Williams, 2009). A main challenge for many tourism enterprises is to develop methods to retain staff, maintain flexibility and control costs (Hjalager, 2010). From a different perspective, the development of networks and clusters represents a more frequent type of innovation in tourism, creating new opportunities for small and medium sized tourism companies (Novelli, Schmitz, Spencer, 2006; Thomas, Wood, 2014).

Barriers to innovation are related to internal factors in all most of the cases. Weiermair and Peters (2002) argue that the major barriers that firms had to face in their innovation activities are lack of time, money or know-how, and risk aversion. Blake, Sinclair and Soria (2006:1103) add to these factors shortages of skilled employees and the resistance to change. Chathoth et all (2014:190) emphasize the role of technology and firm's organizational structure, seeing the top-down approach as a significant barrier to innovation. Regarding the outside forces, particularly in Europe, bureaucracy and politics were pointed out as possible obstacles that prevent the realization of planned innovation activities.

The market needs represent one of the main sources of innovation in tourism (Camisón, Monfort-Mir, 2012:784). The dynamics of tourists' needs represent an incentive for tourism entrepreneurs to develop new products, to improve the existing one or customize their products according to their clients' needs. As a result, experiential learning or "learning by doing, using and interacting" is increasingly used as innovation source in tourism sector. Marketing innovations based on the integration of technology developments into firms' activity bring the tourism suppliers near its clients and provide in the same time opportunities to increase the firm's knowledge base (Aldebert et al, 2011:1206). The support of public institutions and the focus of public policies on tourism facilitate knowledge developments and an appropriate support for tourism innovation activities.

3. Material and method

As we mentioned from the beginning, we consider the innovation an essential source for productivity and tourists' satisfaction improvement. As a consequence, our purpose is to analyze the focus on innovation of rural tourism accommodation units from Cluj County during the time span 2009 - 2012. To achieve our goal, we applied a semi-structured interview to the business owners. We started from the 190 touristic chalets, villas, touristic boarding houses and agro-touristic boarding houses registered in Cluj County and we selected the units developing rural tourism activities (97 units). We contact them and 26 units accepted to participate in our study. The questionnaire was focused on three aspects: what type of innovation was implemented, which were the source of innovations and which barriers and innovation effects were identified in the process of innovation implementation.

During our visits to these businesses, we observed some aspects related to the services provided to the customers, allowing us to make some assumptions about their innovative orientation. We also studied their websites or different other promotional materials.

In order to highlight the characteristics of innovation in rural tourism, we compared our results with the results obtained by Negrusa, Yolal and Rus (2012) when they investigated similar aspects of Cluj Napoca hotels' innovation.

To identify the innovative activities, we followed the OECD and Eurostat taxonomy (2005). There are four main types of innovation: product innovations, process innovations, marketing innovations and organizational innovations. We are in the presence of innovation if following criteria are met: to have a degree of novelty, to generate a significant improvement, and to diffuse it on the market (OECD:2005, 46 - 47). The degree of novelty has three levels: on the first level of innovation, something is new to an institution; on the second level, it is new to the market, on the highest level, it is new to the world (OECD:2005, 57-58).

Next we will present some of the demographics of the investigated sample. The first characteristic is the classification of the accommodation unit; most units (46.2%) are classified in the category three daisies followed by those in the category of two daisies. Over 50% of the businesses were established after 2006. The age of the owner is

between 46 and 60 years for 57.7% of the units and between 30 and 45 years for 26.9% of them. In our sample predominate women owners (61.5%) and owners with high school studies (42.3%) or undergraduate studies (34.6%). In terms of previous experience in tourism before starting the business the majority (65.4%) declared they didn't had any experience but 76.9% stated they received specialized training in tourism.

4. Results and discussions

The most present type of innovation is product innovation. Only 3 companies declared that during the analyzed time span they did not introduce a new product/service or they did not improved any of the products/services provided.

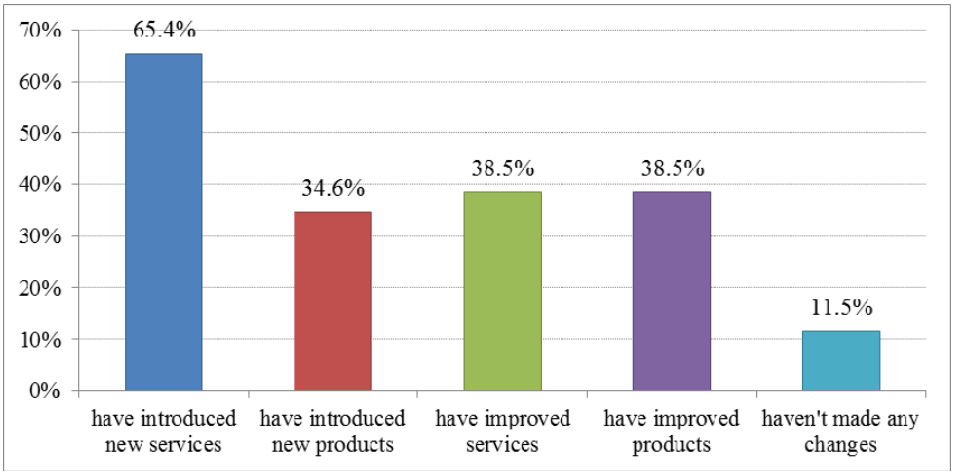

Fig.1. Product innovation

Most of the units declared that before the economic crisis, the demand for their services increased, some of them investing and developing the infrastructure of their units. When the crisis effects reduced the demand, the only option for most of the guesthouses was to increase tourists' experience (the value added of the tourism package) and they began to introduce new or improved products/services.

In terms of innovators' characteristics the results show that most of the businesses (40%) that introduced new services were

established in 2009; the age of the owner is between 46-60 years for approximately 47% of them; 52.9% of the owners are women; 47.1% of the owners have high school studies; 66,7% didn't poses any experience in tourism before starting this business and 86.7% received training in tourism. Those who introduced new product have been established after 2005, have owners with an age between 46 and 60 years (55.6%), are male (55.6%), have an undergraduate degree (55.6%), didn't poses an experience in tourism activities before stating the business and 85.7% pursued training in tourism. Approximately 90% of the businesses that improved their products were established after 2004; 50% of the owners have an age between 46 and 60 years; 80% are women; 50% have an undergraduate diploma; 60% had previous experience in tourism before starting the business and 80% received training in tourism. The characteristics of the businesses that improved their services are the following: 40% of them began their activities in 2009, 70% of the owners are aged between 46 and 60 years, 60% are women, 40% have post high school studies, 70% didn't had any previous experience in tourism and 70% of the owners undertook training in tourism.

Comparing our results with the one obtained by Negrusa, Yolal and Rus (2012:45) – 42% introduced new services/products and 47% implemented improvements in products/services, we observe a higher orientation to introduce new services, the main reason being the previous (before 2009) poor supply of the guesthouses. Also, a characteristic of rural tourism is the presence of customized services. Usually, the hotels are standardized, while the rural units discovered that the characteristics or the rural atmosphere and the focus on the tourists' needs may be a winning option. Previous research on this topic (Toader, Sofica, Petrescu, Negrusa and Balint 2013:515) emphasized that the product innovation in Cluj County is focused on providing a "tourism experience" and not singular tourist elements (Weiermair, 2004), the tourism packages being spiced up with genuine features and characteristics of Romanian rural areas.

The process innovations have also a significant presence in Cluj County rural tourism. The most present innovation involves new or significantly improved kitchen equipment and heating systems. This aspect emphasizes the focus on satisfying the clients' basic needs (accommodation and meal) - 16 units have a restaurant, while the others provide an equipped kitchen to their clients.

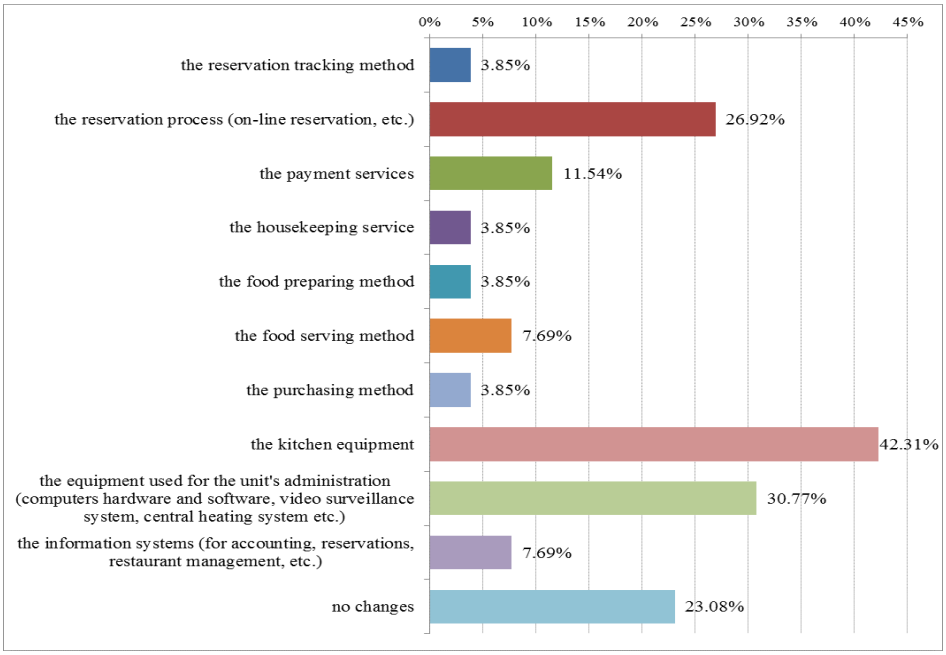

Fig. 2. Process innovation

The profile of the businesses that innovate their reservation system look like: 83.33% were established after 2005; the age of their owner is between 46 and 60 years for 57.1% of them; the owners have high school degree (42.9%) or undergraduate degree (42.9%); 83.33% did not have tourism experience before starting the business and 66.7% of the owners were the beneficiaries of training in tourism. The businesses that improved or introduced new kitchen equipment began their activities after 2004 (88.8%), are owned by women (63.6%); have owners with an age between 46-60 years (63.6%); their owners have undergraduate studies (45.5%); had previous experience in tourism before starting their own business (55.6%) and 77.8% received training in tourism. Another form of process innovation was through improving or introducing new equipment for business administration. This form of innovation was present in mostly all businesses that have owners with an age between 46 and 60 years (62.5%), are owned by females (75%), their owners have after high school or undergraduate studies (37.5 % for each category) and did not poses any experience in tourism before starting the business (71.4%) but benefited from training in tourism (85.7%).

The most common process innovation adopted by the Cluj hotels is the innovation in the reservation process (Negrusa, Yolal and Rus 2012:47). While in the case of hotels we discuss about the introduction of on-line reservation systems or the improvement of the reservation systems – these being the most prevalent front-office application in hotels (Rus 2009:893, [2]), in the case of guesthouses we observed a minor progress from reservations made exclusively by phone to reservations made by phone and email. Also, regarding the information system used, Cluj Napoca hotels use them in their daily activity (Rus 2009:58, [1]), while the majority of guesthouses are using the classical methods, based on paper registers.

Even if they are present in a significant number, unfortunately they have a low added value to the tourists' experience. Because most of the units have a reduced level of financial resources, they do not have the possibility to invest in developing or introducing new activities to enhance the tourists' satisfaction, so they focus on satisfying as good as possible the tourists' basic needs. Unfortunately for these units, the actual tourist became more demanding and they will have to find a way to compensate this weaknesses.

The organizational innovations are less frequent in Cluj County's rural tourism. A half of the units did not implement any change, while from the other half, most of the units tried to initiate or to develop different types of collaborations with the local community or with other units. As a result of the cooperation with local producers, the guesthouses are able to provide to their clients traditional fabrics (cloths - hats, fur coats; carpets; wood carvings), healthy meals (with meat and dairy products, forest fruits and mushrooms, lavender, strawberry, honey, wine, oil) or equestrian services. This type of cooperation describes the process of rural tourism integration in local community: "tourism is explicitly linked to the economic, social, cultural, natural and human structures of the localities in which it takes place" (Saxena and Ilbery, 2010:260). The results show that businesses introducing or improving relations with other companies or institutions have the following characteristics: the age of the owner between 46 and 60 years (62.5%), the owner didn't had any previous experience in tourism before starting the business (75%) and 87.5% of the owners benefited from training in tourism.

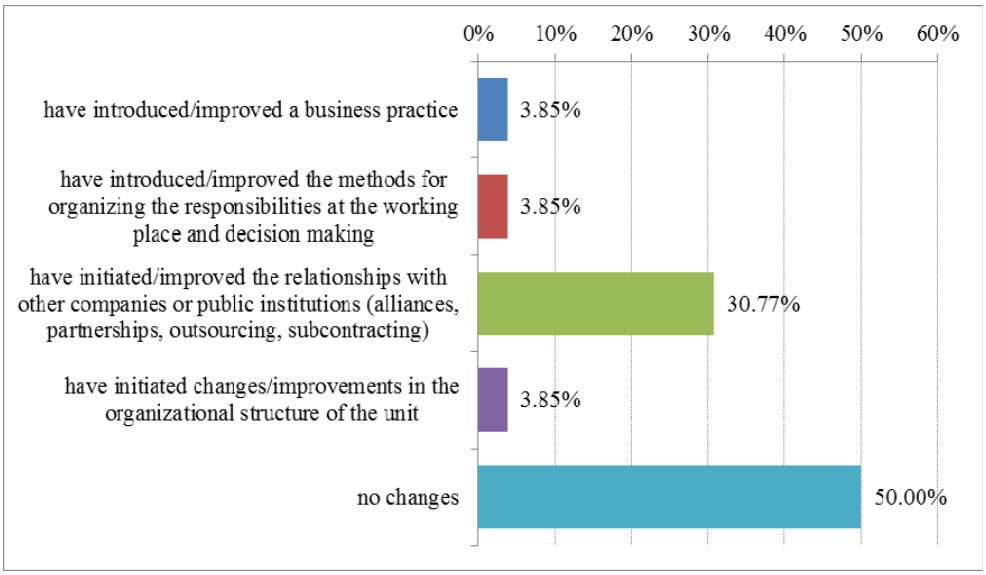

Fig.3. Organizational innovation

Another type of cooperation is with similar units. The "co-opetition" (Decelle, 2004) is present in villages Sancraiu and Marisel, where the accommodation units are working together in developing different activities for tourists (in Sancraiu they developed common tourist packages), events and even infrastructure elements (a village museum in Marisel or a traditional Hungarian house in Sancraiu). It is important to stress the high value added of this type of innovations, increasing tourists' experience and the attraction capacity of the area.

The marketing innovations identified in rural tourism are similar with the results obtained by Negrusa, Yolal and Rus (2012:47) for hotels in Cluj Napoca, the guesthouses concentrating their actions on introduction/improvement of advertising and promotion techniques and introduction of new sales channels. The social media is used more and more to develop connections with potential clients and to promote the provided services. Other web instruments are also used with the same purpose: Google AdWords, presence on specialized tourism websites (TripAdvisor), media websites (YouTube) and blogs.

The businesses that improved or introduced new forms of advertising are mostly owned by persons with an age between 46-60 years (53.3%), are owned by women (60%), the owners have high

school degree or undergraduate degree (40% each category), 76.9% of the owners had previous experience in tourism before starting the business and 84.6% of them received training in tourism.

Those accommodation units that improved or introduced new sales channels were mostly established after 2005 (52.5%), have owners with an age between 46-60 years, 77.8% of the owners are women, the owners have high school or undergraduate studies (44.4% each category), 75% of them did not have experience in tourism activities before starting the business and 87.5% benefited from training in tourism.

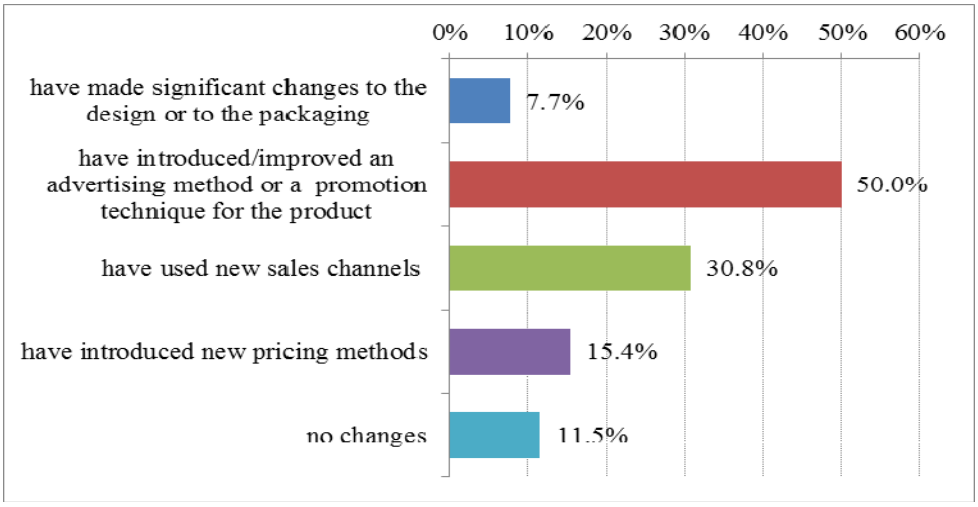

Fig.4. Marketing innovation

Williams and Shaw consider that internationalization is a form of innovation, successful internationalization requires innovation, and internationalization requires firms to have superior knowledge (2011:27). The units mentioned previously in Sancraiu and Marisel innovating at local level by cooperating and using in common the local resources, discovered the opportunity to compete in the tourism industry at global level. The participation at international touristic fairs, the partnerships made there and not in the last, the Internet, allow them to be present in the international market.

Analyzing the main source for the innovations implemented, we conclude that the personal experience and concerns of the guesthouse

owners and the clients' observations represent the main source of innovation in rural tourism. This is typical, if we consider that almost all the units are managed by one or more members of the owner's family, the number of the employees outside the family being reduced. In conclusion, we believe that the entrepreneurial characteristics and the vision of the owner become very important in the process of innovation in rural tourism.

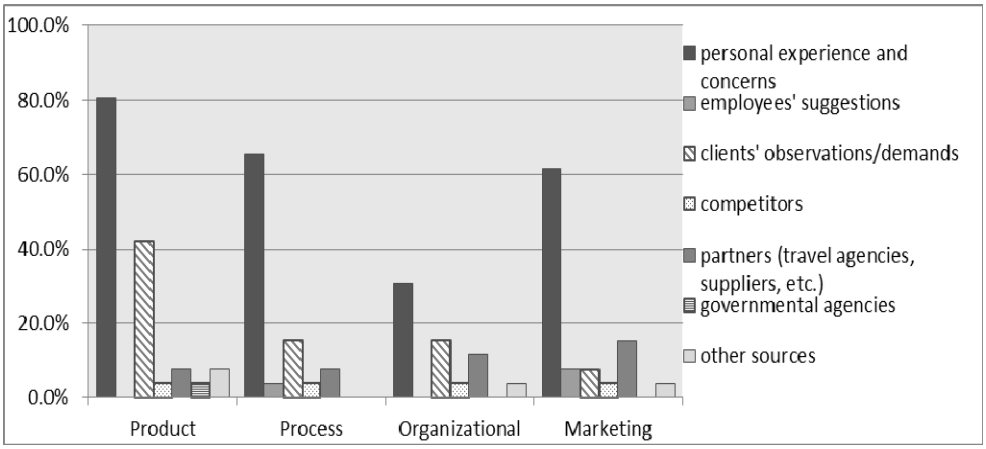

Fig.5. Sources of innovation

Clients are another important source for innovation in rural tourism. Paying attention to their needs, the guesthouses have the opportunity to be on trend, to provide the most appropriate services and to satisfy the clients' needs at a higher level. Customizing the services and including the genuine elements of the area in their products, the units became more competitive, being easier for them to compete with the units form other regions.

The main benefits obtained as a result of innovative activities implemented are presented in Figure 6. In the perceptions of guesthouses owners', the rise in the number of clients, the increase of the guesthouse notoriety and the growth of loyal customers are the main benefits they have as a result of innovations implemented. This conclusion is similar with the results obtained by Negrusa, Yolal and Rus (2012:49-50) in the case of hotels from Cluj Napoca.

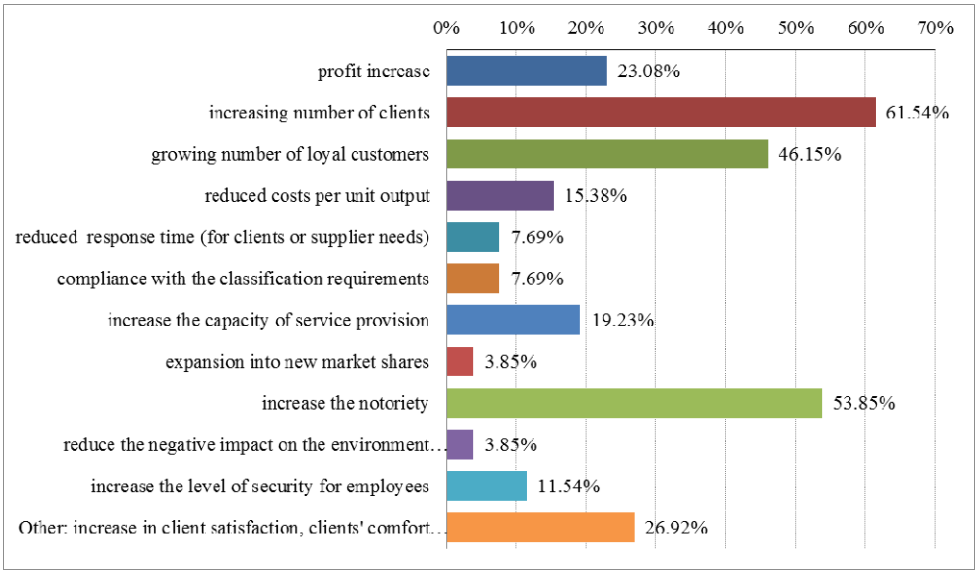

Fig.6. Effects of innovation

Implementing innovations is not always easy – Figure 7 presents the main impediments encountered by the entrepreneurs in rural tourism. Seasonality is the main problem faced by the tourism. In Cluj County rural area, the peak season is developing between June and September and during the winter (especially for holidays). As a result, the owners of guesthouses mentioned that it is not worth to invest in making radical changes or improvements in infrastructure as the tourists' flows are fluctuating along the year.

This aspect may affect also the sources of innovation. In a previous research (Sofică and Toader, 2013:67), we observed that seasonality determines fluctuations of labor force and a negative selection of the specialized workers – the educated and skilled employees tend to migrate to other countries (where they can earn enough money in the peak season) or they choose units which provide them a job for the entire year (in the cities, for example). In this situation, we cannot expect too many suggestions for innovations from the employees of the rural accommodation units.

Another impediment in innovations is the lack of financial resources. We already mentioned this characteristic of the SMEs acting in rural tourism, and it seems that the owners of the guesthouses

perceive the situation in the same manner. Moreover, they consider that usually it is too costly to innovate, especially when they are not able to access EU funds.

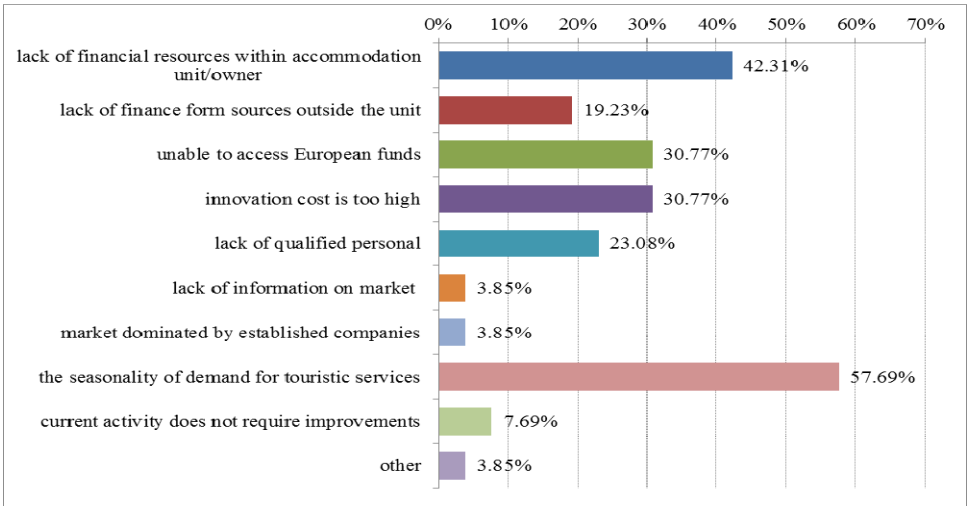

Fig.7. Impediments for innovation

5. Conclusions

The tourism industry is changing, driven notably by new consumer requirements and information technologies. A new tourism is emerging - one which takes into account the complexity and segmentation of tourism demand. Tourism entrepreneurs have realized that innovation is becoming a key element to survive and compete in a dynamic and radically changing environment (Korres, 2008:149).

Analyzing the activity of accommodation units in Cluj County rural tourism, we conclude that the guesthouse owners experience and concerns represent the main source of innovations. The clients' demands have also an important role in introducing new or improved products/services, processes, organizational or marketing activities. An important difference as reported to hotel industry, is the fact that in the rural tourism the employees' suggestions for innovations are almost inexistent.

Comparing the different types of innovations, we observed that the most frequent are product innovations. Before crisis, most of the

units in rural area were providing only basics services (accommodation and food), but the competition and the decrease of demand since 2008 have determined them to identify different ways to attract clients. The product diversification through the inclusion of traditional elements of the area and the creation of additional services to increase the added value of tourists' experience represented the main approaches in the case of product innovation.

Remarkable are also the organizational innovations implemented. The development of rural tourism networks which strengthen the collaboration with local producers, local authorities and most important with similar units, represent a modern and successful way to develop the rural tourism.

The social media represent at this moment a key instrument for marketing activities of many accommodation units.

An innovative tourism policy has to promote coherence and synergy which means that policy makers need to encourage all partners (as for instance, regions, municipalities and the business community) to co-operate more proactively.

The profile of the innovator in rural tourism is the following: established heir business after 2005, has an age between 46-60 years, possesses high school or undergraduate degree, didn't had any previous experience in tourism before starting the business and received training in tourism.

Anyway, there are some methodological limits which constrain the generalization of the results. As we mentioned only 27% of the potential target group accepted to participate to our study. Based on our observation, we consider that these are the open-minded persons, who even have a strong entrepreneurial sense and do not want to give up to their investments or who are really passionate about the tourism.

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FINANCING ENVIRONMENTAL PROJECTS IN ROMANIA. NEW PERSPECTIVES IN THE FRAME OF THE 2014-2020 PROGRAMMING PERIOD

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ABSTRACT. In its efforts to faces the challenges of emerging from the crisis, the EU tries to put the European economies on a sustainable growth path through the 2014-2020 Common Strategic Framework (CSF), sought as an instrument for implementing the Europe 2020 Strategy. According to the CSF thematic objectives, the European Commission proposed for 2014-2020 a new Multiannual Financial Framework, through which thematic concentration and performance incentives are expected to result in more effective spending. The CSF Funds will provide an important source of public investments not only in growth and jobs but in areas supporting them, such as environment protection or resource efficiency.
The paper offers a insight of the financing of environmental projects in Romania in the frame of the new Programming period and according to the EU Cohesion Policy objectives for 2014-2020. According to the learned lesson from the previous programming period, for a successful implementation of CSF Funds, with an optimal impact, an appropriate policy and a legal and administrative framework in place are needed.

Key words: environmental projects, financing, EU Cohesion Policy, environmental policy.

JEL classification: Q56, Q 28, E 61

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1. Introduction

Romania has valuable natural assets, but environmental and biodiversity are not appropriately protected trough investments targeted to preserve them and to enhance their benefits for people living standards. Rational management of natural resources represents critical environmental, health and competitiveness challenges for Romania, being an important potential for growth and job creation. Environmental protection needs to be enhanced and environmental infrastructure has to be improved in respect of quantity and quality. Biological diversity, natural habitats, wild fauna and flora species have to be conserved and protected areas, including Natura2000, effectively managed.

Accordingly, investments have to be oriented to environmental infrastructure, ecological restoration, Natura2000 plans, biodiversity protection and conservation.

The present paper explores the challenges for Romania in the next EU financial planning period regarding the environmental protection and resources efficiency. It is organised as follows: after a short introduction, latest studies on funding environmental project in Romania and the EU are presented. In the third section, the EU financing policies are exposed: the EU resource efficiency agenda, the 2014-2020 EU Cohesion including the EU Environmental Policy. Issues related to the environment projects funding in Romania are described in the section 4, including environmental priorities for Romania and the financial instruments available to cover them in the next period. The final section is dedicated to Discussion and conclusions.

2. Studies on funding environmental projects in Romania and the EU

The topic of financing environmental projects in Romania was treated by Melnic (2013) through a comparative analysis of the main financial and economic instruments for available for in Romania in the period of 2007-2013. SOP Environment was mentioned as one of the most important programs in terms of operational and financial allocation and represents the most important source of funding for the environment, as well as LIFE+ program of the Environment Fund or Global Environment Facility. The author developed a case study of the

Neamt County Water Serv Company which highlighted the features of the environmental projects for water field and the variety of sources for funding them.

A group of researchers from the Romanian Academy (Piciu et al, 2012) dealt with the risks of financing the investment projects for environment protection, revealing the interdependency and interaction between the flows and circuits financing the environmental projects and showing the necessity for punctual, and distributive, correlative and multiplicative financing of the environmental protection, related to the funding from European Union.

A team of researchers from the Centre of European Policy Studies (CEPS) and from the Institute from European Environment Policy (IEEP) (2012) carried out a study in order to analyze the proposed expansion of innovative financial instruments in the EU Multiannual Financial Framework for the 2014–2020 period. The authors presented the economic rationale, governance principles and criteria that these instruments should follow and compares these with proposals from the European Commission. Based on this assessment, they made recommendations for the proposed instruments.

The way in which the European Union allows the access of Member States to financing instruments for the environmental policies for the period 2007-2013, in the frame of the Sixth Community Environment Action Programme (6th EAP), taking into consideration various criteria (such as: the size and density of each member state's population, the importance of certain communitarian surfaces) was analyzed by Bruciu et al (2010). The financing instruments (Cohesion Fund, European Regional Development Fund, and European Agricultural Fund for Rural Development, the European Maritime and Fisheries Fund, LIFE Programme) were viewed as essential in maintaining the environment policy's sustainability, as well as in sending a clear signal to the investors and consumers.

A great debate on the priority given to environment at the EU level, including to the "greening" of EU budget was started with the agreeing process on the post-2013 Multiannual Financial Framework (MFF), related the size of the budget, directions of expenses, precise source of funds (Baldock et al, 2011). The most pressing worry for heads of states and governments was how Europe will get out of the economic crisis.

For a sustainable economic recovery and consequent action to promote competitive industries, innovative technologies and stable jobs, a key priority for the next Multiannual Financial Framework (MFF) was to achieve a shift in the European economy so that it is greener measured both by carbon efficiency and by overall environmental performance and is also creating new skills, jobs and investment towards recovery. Therefore, the environment, including the climate dimension, is an integral part of the 2020 agenda and the 2014-2020 MFF is more important for the environment and the sustainability of the European economy than any of its predecessors (Baldock et al, 2011).

3. The EU environmental policy: financing issues

3.1. The EU resource efficiency agenda

The EU launched in 2011 a resource efficiency roadmap, which is placed alongside to other EU strategies, such as that for climate change to 2050 and within broader strategies as Europe 2020, which is responding to the economic crisis. This was not the first attempt to conceive a strategy for in this policy area, because in 2005 a Natural Resources Thematic Strategy identified the main problems but it was not focused on concrete actions on resource use, and in 2008 a Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan stressed the need for better information and benchmarking, but not clear political targets. Due to this state of facts, a roadmap of resources efficiency was conceived to set up targets for specific resources as well as for the overall efficiency of resources use in different economic sectors (Farmer, 2011).

At the heart of the EU's resource efficiency agenda is the principle of 'true costing', and this requires that the costs/prices of resources and products better reflect their negative environmental and social impacts as well as their benefits. Economic and fiscal tools such as national budgets, market-based instruments (MBIs), environmentally harmful subsidies (EHS), and state aid are among the instruments available to governments to take this agenda forward (Fedrigo-Fazio et al, 2013).

The economic and financial crisis in Europe has demanded closer attention from national governments to their handling of public debt, and the more considered allocation of limited public funds

together with stringent application of more coordinated EU fiscal management rules through the Stability and Growth Pact. A range of market-based instruments (MBIs) including environmental taxes are applied in Member States across different sectors, especially the energy and transport sectors. Direct and indirect environmentally harmful subsidies (EHS) remain an issue in all EU Member States and occur across various sectors (Fedrigo-Fazio et al, 2013).

Given the complexity of state aids and the numbers of cases available for detailing, the study provides only a course comparison of some examples of recent cases, focusing particularly on the area of climate change, for both renewable energy (positive state aid) and for fossil fuels (negative state aid). This climate change focus supports efforts led by the G20 on phasing out EHS to fossil fuels, and state aid can constitute a type of EHS (Fedrigo-Fazio et al, 2013).

3.2. The EU Cohesion Policy for 2014-2020

The new EU programming framework for 2014-2020: main lines

On 29 June 2011, the European Commission adopted a proposal for the next multi-annual financial framework: A Budget for Europe 2020 (European Commission, 2011a).

The assessment of the previous period (2007-2013) highlighted the need for: (i) improving the capacity of the policies to deliver European added value, (ii) increasing the performance of the policies and (iii) simplification – reducing administrative costs and minimizing the risk error (European Commission 2011 c).

Accordingly, the European Commission proposed a number of important changes, such as:

- concentrating on the Europe 2020 Strategy's priorities of smart, sustainable and inclusive growth;
- rewarding performance;
- supporting integrated programming;
- focusing on results – monitoring progress towards agreed objectives;
- reinforcing territorial cohesion;
- simplifying delivery.

The multi-annual budget for 2014-2020 aims to fund the objectives of the Europe 2020 strategy for a smart, sustainable and inclusive growth. This strategy sets objectives in the following five

areas: employment, research and development, climate change and environment, education, poverty and social exclusion.

Meeting the objective of simplicity, the proposals for the 2014-2020 programming include the following major trends:

- A decrease in the number of separate programs through a grouping of the 2007-2013 programmes: Erasmus for All programme will include all branches of the 2007-2013 Lifelong Learning Programme (Erasmus, Comenius, Leonardo, Grundtvigt) and the Youth in Action Programme; the 2007-2013 Culture and Media programmes will be grouped together in the 2014-2020 Creative Europe Programme. Horizon 2020 will be the big new 2014-2020 programme dedicated to research and innovation (former FP7);
- The simplification of procedures and the application of common principles for funding;
- The decentralization of the management of funds, with an increased role given to executive agencies;
- The system of Structural Funds (ERDF, ESF, EAFRD) remains almost unchanged for the next programming period 2014-2020.

The new legislative architecture for Cohesion Policy comprises:

- an overarching regulation setting out common rules for the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund, the European Agricultural Fund for Rural Development (EAFRD), the European Maritime and Fisheries Fund (EMFF), and further general rules for the ERDF, ESF and Cohesion Fund;
- three specific regulations for the ERDF, the ESF and the Cohesion Fund;
- two regulations on the European territorial cooperation goal and the European Grouping of Territorial Cooperation (EGTC).

Following the Cohesion Policy proposals of October 2011, the European Commission presented in March 2012 the Common Strategic Framework (CSF), setting up strategic directions for the next financial planning period 2014-2020 in Member States.

Strategic objectives and budget of Cohesion Policy

The objective of Cohesion Policy is to reduce disparities between the levels of development of the various regions, in particular for rural areas, areas affected by industrial transition, and regions which suffer

from severe and permanent natural or demographic handicaps and to contribute to achieving the targets set out in the Europe 2020 strategy of smart, sustainable and inclusive growth, and in particular towards the achievement of quantitative headline targets identified in that strategy (EC 2011, c).

Comparatively with the previous period, the 2014 Cohesion Policy architecture is simpler, as objectives and financial funds allocation (Table 1).

Table 1 - Cohesion Policy Architecture

Objectives	**Funds**	**Goals**	**Regions**	**Funds**
Convergence	ERDF ESF	Investments in economic growth and employment	Less developed regions	ERDF ESF
Convergence phasing out				
Regional competitiveness and employment phasing in			Regions in transitions	
	Cohesion Fund			Cohesion Fund
Regional competitiveness and employment	ERDF ESF		More developed regions	ERDF ESF
Territorial economic development	ERDF	Territorial economic development		ERDF

Source: EC, 2011 a

The Commission's proposal for a multi-annual financial framework foresees an amount of EUR 376 billion for economic, social and territorial cohesion for the period 2014-2020.

Table 2 - The 2014-2020 Cohesion Policy budget

Proposed budget 2014-2020	**EUR billion (in constant 2011 prices)**
Less developed regions	162,6
Transitions regions	39,0
More developed regions	53,1
Territorial cooperation	11,7
Cohesion Fund	68,7
Extra allocation for outermost and sparsely populated regions	0,9
Connecting Europe Facility for transport, energy and ICT	40,0

Source: EC, 2011 c

3.3. The EU 2014-2020 environmental policy: objective and instruments

The European Union's environmental policy contributes to the Europe 2020 objectives of smart, sustainable and inclusive growth. Investments in environmental protection are thought as investments in the modernization of the European society and will help to transform Europe into a knowledge-based, resource-efficient economy. They are indispensable for protecting and improving the quality of the environment (European Commission, 2011 c).

The main areas of the EU's environmental policy are: reducing environmental costs, protecting biodiversity and strengthening the resilience of ecosystems, restoration of ecosystems, climate change challenges mitigation and adaptation.

In the next period, environmental policy priorities will be 'mainstreamed' into all the major EU funding instruments, including *cohesion*, *agriculture*, *maritime and fisheries*, *research and innovation*, as well as into *external aid programs* (European Commission, 2011 c).

Environmental policy is seen as a component of *cohesion policy.* The Europe 2020 priorities, including making the EU a more resource efficient, green and competitive economy will be achieved by environmental policy objectives. These objectives include *promoting the implementation of the environmental acquis (water, waste, marine, nitrates, Industrial Emissions Directive, air quality, flood legislation) and funding the related environmental infrastructure; protecting and restoring biodiversity and ecosystem services*, including through the *development of green infrastructures and reducing and preventing desertification*.

Greening of direct payments to farmers is a major objective of the reform of the *Common Agricultural Policy*. 30% of direct payments will be made conditional on respect for a range of environmental best practices. In addition, *rural development* under the CAP will be refocused on delivering public goods, including through agroenvironment measures.

Environmental sustainability will be at the heart of the future *maritime and fisheries policy*, through reducing overfishing and overcapacity and reducing direct impacts, as well as supporting marine-protected areas.

Through the new Common Strategic Framework for *Research and Innovation* will continue the financial support for *eco-innovation*

and innovation partnerships, helping to deliver smart and sustainable growth, with a direct impact on resource efficiency (water, ecosystems, raw materials) and smart cities.

In *external action*, the Pre-Accession Instrument will help candidates to finance the environmental infrastructure and capacity building needed to respect the EU acquis.

The main financial instrument for the implementation of the EU' 2014-2020 environmental policy remains the LIFE+Programme, with the concern to align it more closely to Europe 2020 objectives. This instrument will work under the Environment sub-programme and will support two types of LIFE projects: *Integrated Projects* and *Traditional projects*.

LIFE Integrated Projects are designed to demonstrate the sustainable implementation of environmental action plans relating to major EU environmental directives, such as the Habitats Directive or the Water Framework Directive.

The traditional projects financed under the Environment sub-program are grouped according to the following priorities (European Commission, 2011 c):

(a) *LIFE Biodiversity*, while still focusing on Natura2000 and on the development and sharing of best practices in relation to biodiversity, will also target wider biodiversity challenges in line with the Europe 2020 biodiversity strategy target to maintain and restore ecosystems and their services;

(b) *LIFE Environment* will focus on supporting the implementation of EU environmental policy by the public and private sectors and in particular the implementation of environmental legislation relevant to the Europe 2020 resource efficiency objectives (such as the Water Framework Directive or the Waste Framework Directive);

(c) *LIFE Governance* will support the creation of platforms for the exchange of best practices for improved compliance with EU environmental policy priorities and enforcement, policy development and knowledge-based decision-making (e.g., wide dissemination of project results), with an emphasis on good governance.

The proposed budget allocation for 2020 is 2,4 billions Euro for LIFE+ Programme (under the Environment-subprogramme).

4. Environmental projects funding in Romania

4.1. Environments problems in Romania

Romania is faced with critical environmental challenges and problems, as follows:

- important difficulties regard the implementation of the Drinking Water Directive (DWD) and Urban Waste Water Treatment Directive (UWWTD): outdated and insufficient laboratory equipment for monitoring the drinking water quality at the level of the regional and county level public health institutions; a low performance in waste management, comparatively with other Member States;
- delays in assessing and approving the management plans of Natura 2000 sites, due to the capacity of the environment authority;
- the need to promote a green infrastructure in order to inverse the trend of biodiversity loss (green bridges, corridors and eco-ducts to re-connect natural areas that have been artificially divided, restoration of degraded natural areas) to create a new space for plants, animals and leisure activities and prevent disasters;
- in the forest sector, the difficulty to access compensation funds by forest owners for the lost income due to restrictions imposed in protected areas due to the lack of management plans; need for encouraging natural afforestation of grasslands and unused agricultural land; the need for measures for integrated management of mountain forests and watercourses;
- the need for biodiversity preservation: developing the fishing sector with minimal environment impact, preserving the aquatic habitat and ecosystems and measures for a sustainable environment protection;
- the challenges related to stringent objectives of the new emissions targets and the new approach of Directive 2008/50/EC on ambient air quality and Air Quality Directive -2008/50/EC;
- need for measures to address soil degradation and to ensure the implementation of standards related to Nitrate Directive and other relevant water and soil protection regulations and certain agro-environment measures.

4.2. Priorities of Romania for the next period

The Romanian global objective in the field of environment for 2020 is to maximize the benefits of the Union's environment legislation by improving implementation of the EU acquis regarding specific environmental protection legislation and enhancing the sustainability of the Romania's cities, as well as to ensure the integration of environmental protection aspects and requirements in all other relevant policies and policy initiatives.

The development needs in relation with the thematic objective (6) "Protecting the environment and promoting resources efficiency", of *2014-2020 Common Strategic Framework* (CSF), as they are mentioned in the first draft of the Romanian Partnership Agreement for 2014-2020 Programming Period are:

- Extend public access to water and wastewater services, in the context of the Water Framework;
- Directive and its River Basin Management Plans Facilitate transition of waste management to a market-led system based upon the waste hierarchy in the context of the Waste Framework Directive;
- Protecting, conservation, restoration and sensitively exploitation of Romania's cultural heritage and natural assets, including landscape, farmland, forests, inland and coastal waters, protected areas, biodiversity;
- Development and improvement of the air quality assessment;
- Addressing the legacy of derelict and polluted sites and to manage current sources of pollution;
- Exploiting public investment in environmental protection to create new markets potentially available to SMEs and social enterprises, particularly in Romania's less developed regions and in rural areas;
- Decrease abandonment of agricultural activities.

According to these needs, Romania will focus the investment priorities for 2014-2020 on the following areas:

- extension and modernization of the water and wastewater infrastructure;
- measures to improve the water quality;

- developing waste management system;
- restoring and conservation biodiversity, including green infrastructure measures;
- restoration and conservation of marine and inland water biodiversity within sustainable fishing, aquaculture and data collection and control activities;
- development and improvement of the National Air Quality Assessment optimization and development of the National Environmental Radioactivity Surveillance Network;
- measures for rehabilitation of polluted sites, including decontamination and reintroducing the sites into the socio-economic circuit.

4.3. Financial instruments for funding environmental projects in Romania in the next period

The main financial instruments available for supporting environmental projects in Romania in the next Programming Period are: *Cohesion Fund, European Regional Development Fund, European Agricultural Fund for Rural Development Fund, European Maritime and Fisheries Fund and LIFE+ Programme* (under the Environment sub-programme). These will cover the identified environment priorities as it is shown in Table 3.

Table 3 - Environment priorities and their financial coverage

Priority	Fund
Extension and modernization of the water and wastewater infrastructure	CF
Measures to improve the water quality	ERDF
Developing waste management system	ERDF
Restoring and conservation biodiversity, including green infrastructure measures	CF, ERDF, EAFRD, LIFE+
Restoration and conservation of marine and inland water biodiversity	ESF, EAFRD, EMFF
Development and improvement of the National Air Quality Assessment optimization and development of the National Environmental Radioactivity Surveillance Network	CF, ERDF
Measures for rehabilitation of polluted sites, including decontamination and reintroducing the sites into the socio-economic circuit	EAFRD, ERDF

Source: adaptation from Ministry of European Funds, *Romanian Partnership Agreement for the 2014-2020 Programming Period*, First Draft, p.116

5. Discussion and conclusions

It has to be mentioned that the main problems identified in projects implementation during 2007-2013 can be reiterated in the next period, if no appropriate measures will be taken the Romanian relevant National Authorities.

Some examples identified by the Environment Managing Authority in financing projects through the Environment Sectorial Operational Programme:

- lack of skilled personnel for large projects;
- lack of knowledge of beneficiaries regarding the public procurement procedures;
- delays in public procurement procedures;
- inconsistence between public procurement documentation and feasibility studies;
- unrealistic cost-benefits analysis;
- over-estimated investment unit costs;
- difficulties with property or administration rights of land assigned for investment.

The absorption rate was only of 6,14% for Environment Sectorial Operational Programme at 30.06.2012. The minister of European Fund declared in October 2013, that an amount of 441 millions of Euro were reimbursed for Environment Sectorial Operational Programme from the European Commission between first of January and October 2013 and the general absorption rate increased to almost 24%, comparatively with 21% of August 2013.

In this situation, it is hard to believe that in the next period the absorption rate could attain a level close to 100%.

At this moment, a critical issue to be solved by the Romanian Authorities is the setting up of the Operational Programmes under which there will be financed the projects contributing to the above mentioned priorities and their Managing Authorities. One of the breaking learned lessons from the 2007-2013 period is not only the limited capacity of Romania to absorb the European financial support due to multiple causes: fraud, corruption, bureaucracy, legislative incoherence, but the lack of efficiency and effectiveness, as well. For avoiding these shortcomings and for a successful implementation of CSF Funds, with an optimal impact, an appropriate policy and a legal and administrative framework in place are needed.

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FINANCIAL AUDIT AS PREDICTION TOOL FOR RISK REDUCTION IN PUBLIC FINANCE

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ABSTRACT. State budget is the fundamental document of state economy. State budget balance reflects state economy. Deficit reported in a state budget in the long-term threatens long-term effective functioning of a state. This article aims at pointing out risks arising in the public finance of Slovakia and at providing framework proposals of solutions by means of financial audit. Financial audit represents a supervisory tool of a state, as municipalities and self-governing regions are obliged to have financial statements as well as their budgets audited by a financial auditor. In line with the International Standards on Auditing, auditor is an independent person who verifies financial statements and budgets of organisations.

Keywords: financial audit, public finance, budget, risks

JEL Classification: H6

1. Introduction

Public finance is among the most frequent terms, as it regards economic issues of a state (Dornbusch & Fischer, 1994).

Statutory bodies of the European Union lead discussions on how to stop the increase of deficits and debts of individual states. Appropriate tools for better prediction of future trends as well as for

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the achievement of long-term fiscal sustainability, caused by unfavourable development of European population and competitiveness in the European welfare state model, are being searched. The given phenomena are strengthened by the financial and economic crisis in the European Union as a whole as well as in individual states. It is therefore important to draw attention to particular methods by means of which we diagnose or predict possible risks, which affect state budgets as the fundamental documents on the revenues and expenditures of a state, i.e. a complex document of public finance (Frey & Stutzer, 2002).

Audit is one of the forms of particular systems.

Financial audit evaluates whether they correspond to the actual state of assets and liabilities, resources of assets financing and managing, and compliance with the budget of an audited entity in financial statements of such an entity. **The objective** of the given audit is to evaluate whether the data recorded in financial or statistical records truly reflect the state of assets and liabilities of an audited entity, the level of managing these assets, as well as the process of budget management. The level of financial statements, the purposefulness of expended financial means from state budget and their economical usage are also evaluated (Medved & Nemec, 2007).

Financial audit needs to be comprehended as a creative and permanent process. Auditors are requested to know and understand all available technologies at a particular time and place, thus being able to fulfil the key audit objectives. In order to achieve financial audit objectives, it is particularly necessary to evaluate the internal control mechanisms of financial, accounting, budgeting and other nature.

It means in practice that they should evaluate:

- the level of carrying out preliminary, interim and subsequent financial controls of accounting operations within accounting processes. All accounting operations need to be verified by preliminary financial control.
- the content of issued internal managing acts regarding accounting and budgeting from the viewpoints of:
  - compliance with valid legal standards, the elimination of risks and illegal procedures, and the following of these procedures by responsible employees within the accounting process;

- the level of procedures setting in this document, i.e. to what extent the control mechanism set in these procedures enables efficient dealing with the accounting process so that control risk is as little as possible;
- the overall work management and human resources allocation in the sphere of budgeting and accounting (e.g. the number of employees, their qualification, experience, education, etc.);
- information systems used in this sphere and their compliance with valid legal regulations (e.g. upon changes of legal standards). This issue is very topical in public administration organisations within the integration process;
- the veracity, understandability, verifiability, completeness and logic of accounting records.

2. Financial Audit from the Viewpoints of State Administration and Self-Government

Audit represents a systemic process of independent collection and evaluation of evidence on tendencies regarding economic transactions and events. Its objective is to find out the level of compliance between statements and criteria stipulated in advance, as well as results distribution with respective responsible entities (Leffson, 1988).

Financial audit is the audit of financial statements, i.e. the audit of financial and accounting records, aimed at finding out whether recorded data truthfully reflect the state of assets and liabilities of an audited entity, the level of managing such assets, as well as the process of budget management, in our case regarding state administration and self-government.

State and public administration authorities are connected to state budget, which results in the fact that they manage public finance. It is therefore necessary for state to carry out financial audit in these organisations. The key legal standard regulating the sphere of financial audit in SR is the Act No. 540/2007 Coll. on auditors, auditing and supervision over audit execution as amended.

The general principle of audit is that it should be carried out with the approach of professional scepticism. It means that an auditor has to be able to recognise that there might be circumstances able to cause that financial statements will be severely incorrect or that transactions will be severely unusual.

The extent of audit is important upon financial audit execution.

Audit should be arranged and carried out for the purpose of obtaining sufficient, reliable and relevant audit evidence in order to achieve the aforementioned objectives effectively. Auditing procedures required for audit execution should be in compliance with the requirements of respective legislation, regulations or conditions of audit order, and requirements regarding financial reporting.

Auditor is responsible for providing an independent opinion on whether financial statements provide a true and veracious picture. Besides, auditor evaluates and submits a report in cases when:

- an accounting entity has not kept accounting records duly and fully;
- statements do not comply with basic accounting records;
- auditor has not been provided all information and explanations necessary to complete audit;
- information provided as the documentation supporting financial statements is not consistent with information in financial statements.

Audit extent has to be approved in a written audit engagement defining the conditions of auditing job, as specified in detail in the International Standards on Auditing, Standard 210 "Agreeing the Terms of Audit Engagements". An audit engagement summarises the responsibilities of auditor and management, the scope of engagement and the form of report to be issued at the end of auditing process.

Thorough knowledge of an organisation, of how accounting is recorded and how transactions are processed by means of an accounting system create the basis in initiating each financial audit (Frey & Stutzer, 2002). General auditing principles and approaches do not change depending on whether the accounting system is on a computer basis or not. Most systems function on a computer basis nowadays. From the viewpoint of ensuring that audit team is familiar with factors having an impact on financial statements and what they should include, thorough knowledge of activities and operations of each organisation, as well as the framework of administration they operate in are required. Audit risk includes the risk of significant inaccuracies in financial statements, the risk of semantic inconsistence, or the risk that an inaccuracy will not be found out. The audit process requires professional judgement upon proposing an audit approach, focusing on what could happen / go wrong, and the adoption of audit procedures as

a response to assessed risks for the purpose of obtaining sufficient and suitable audit evidence. Auditor deals with significant inaccuracies in financial statements. The significance determines a criterion for defining an acceptable boundary of mistakes in financial statements, and in relation to audit risk, it determines the scope and focus of audit work.

Municipalities, towns and self-governing regions are obliged, under special regulations, to address an independent financial auditor regarding the auditing of their financial statements as well as their budget.

Financial audit is interconnected with budget, and budget is a financial category and part of public finance management. We will therefore deal with the public finance in the following part.

Public finance represents a network of specific financial relations and operations in an economic system among individual governmental levels mutually, or between government on the one hand and other economic entities (i.e. citizens, households, companies, non-profit organisations, etc.) on the other. The given relations are based on the principles of voluntaries and irrevocableness.

Public finance is presented by state budget (Medved & Nemec, 2007). It creates a sphere of economy dealing with activities carried out by government in the sphere of revenues and expenditure. Care of state authorities and self-governments about the creation of financial resources is on the one hand, and reasonable financing of social needs in the form of the expenditure part of respective budget is on the other.

It represents a group of activities oriented on the processes of the creation of public revenues and the implementation of public expenditure. On the grounds of fiscal policy and public budgeting, the role of state is to develop such economic activities which would actively affect the creation and usage of resources necessary to ensure public services. Feedback on how individual institutions use these means is therefore important from the viewpoint of their functioning.

3. Analysis of Public Finance in Slovak Republic

The Slovak Republic has recently been reporting a public finance deficit. Moreover, gross public debt, and within it also national debt are increasing. Their development is shown in Table 1.

Table 1 - Development of general government gross debt in SR between 2010 and 2013(in million EUR)

	2010	2011	2012	2013
National debt	25,825	29,911	36,456	34,179
Overall general government gross debt (in EUR)	26,998	29,911	37,245	39,702
Overall general government gross debt (% of GDP)	41.0	43.4	52.04	49.6

Source: http://www.finance.gov.sk

General government gross debt reached the level of 52.04 % of GDP at the end of 2012. The Ministry of Finance of SR counts with reducing the speed of debt increase, under the condition that budget goals will have been fulfilled by 2016. Such a debt development would result in gradual crossing of some boundaries, defined by the Act on budget responsibility, which are connected to penalties. This Act No. 493/2011 Coll. on budget responsibility was approved by the National Council on 8th December 2011, and it came into force on 1st March 2012 (some provisions will come into force on 8th December 2015). The key objective of the act is to ensure effective functioning of fiscal policy and long-term sustainability of public finance.

The amount of general government gross debt is affected by changes of the state of emitted securities and loans and other resources, emission of government bonds, received loans, client deposits in the Treasury (those not included in public administration sector), repayment of liabilities resulting from government bonds, repayment of loans and exchange-rate differences. Besides, general government gross debt is also affected by the consolidated debt of municipalities and self-governing regions, and the debt of other public administration elements.

Solving this issue is quite difficult and influenced by various, also unpredictable, factors occurring in economics. In compliance with the consolidation objectives of general government budget, its gradual decrease is presupposed from 2011, which also results in the reduction of negative impact on debt.

Three groups of factors affect this development. **The first is the need to ensure sufficient liquidity** for the purpose of debt management, which results from the time difference between supposed payment of individual debt instruments and their emission programme. Relatively great need of securities payment at the beginning of 2011 requires the

possession of a sufficient amount of liquid means in the period prior their payment, i.e. at the end of 2010. It means that these means cannot be used to cover debt, which has a negative impact on the debt in the amount of EUR 2,004 million this year. **The second group of factors** is related to the inclusion of the EU means in Treasury loans. Over 2010, these means were provided in the amount of EUR 900 million by the Agency for Debt and Liquidity Management for the purposes of debt and liquidity management. Due to the fact that these means can be used to cover debt, they have a positive impact on the amount of debt in the given sum. **The third group includes factors** (shown in Table 2) which contribute to lowering the overall state of Treasury loans, and thus to the increase of gross debt in the amount of EUR 235 million. The decrease is particularly caused by year-to-year decrease of the means on current accounts of state budgetary organisations, National Property Fund and Social Insurance Company. However, in spite of significant acceleration of encumbrance growth, the debt in Slovak public administration has been kept under the average value of the European Union countries, which represented 73.6 % of GDP at the end of the last year, while the average debt in the EU countries increased by up to 12 percentage points last year. Slovakia thus still remains with a relatively great reserve under the reference value of Maastricht criterion set at 60 % of GDP.

The national debt of SR recorded an increase by EUR 4.5 billion in 2010. The given amount is quite alarming for SR.

Table 2 - Factors affecting increase of the national debt of SR

Factors affecting increase of the national debt of SR
Change of the state of emitted securities, loans and other liabilities: – state budget deficit on the cash basis, – Treasury loans used to cover debt, – deposits of the clients of Treasury not included in the public administration sector, – emission discount, – payment of bonds – discount, – other factors. *Exchange differences* *Other changes in the state budget*
Change of state debt

Source: http://www.finance.gov.sk

Debt of Other Public Administration Entities

According to the data shown in Table 1, it is obvious that public gross debt includes the debts of individual public administration entities. Radical deficit increase caused by amendments to individual acts was recorded in 2010. The following are among the most significant law modifications:

a) amendments made to the Act on Income Tax

Amendment to the Act No. 595/2003 Coll. on income tax as amended, in force since 1st March 2009, has had an impact on the decrease of state budget revenues:

- increase of the amount of employee bonus from EUR 70 at EUR 181.03,
- exemptions from the obligation to keep accounts,
- the implementation of tax exemptions for the revenues earned upon property acquisition.

b) amendments made to the Act on Social Insurance

- temporary decrease of the social insurance rate in solidarity reserve fund from 4.75 % at 2.0 % for the self-employed.

c) amendments made to the Act on Value Added Tax

- time for the refund of value added tax shortened from 60 days to 30 days.

Taxes are included in the revenue part of state budget, i.e. the tax amount significantly affects state management and has a great impact on the reported state budget deficit.

4. Analysis of Risks Affecting State Budget

Risk represents uncertainty, which is why it is important to deal with such an analysis within the state budget in order to prevent several factors which could cause an increase of public finance deficit.

Prior excessive deficit increase has caused the need to deal with possible risks, which can help prevent them in this situation. Audit as the key monitor of current situation also has its role fulfilling this task. All municipalities, towns and self-governing regions under the Act No. 583/2004 Coll. on budgetary rules of local self-government are obliged to have their financial statements audited by a financial auditor. Financial auditor carries out audit under the Act No. 540/2007 Coll. on auditors, auditing and supervision over audit execution and under the International Standards on Auditing (ISA).

Risks are monitored in the following spheres:

Ad A) in public budgets

- risks in the general government budget itself,
- risks in the structure of tax revenues,
- risks in the budgetary relations of SR and EU.

Ad B) in self-government budgets

- budgets of municipalities
- budgets of self-governing regions

A) in public budgets

a) risks in the general government budget itself

General government budget is affected by uncertain development of external environment, non-standard and uncertain development of the assets and liabilities of public administration entities. State budget has been deficit in the long term, which is also proved by the deficit development between 2010 and 2013 (Table 3).

Table 3 - Deficit development between 2010 and 2013

Billion EUR	2010	2011	2012	2013
State budget deficit	7.90	3.28	3.81	3.09

Source: www.finance.gov.sk

State budget includes general government budget. That is why risks are necessary to examine following the revenue part of state budget. Income tax represents the most significant amount of state budget revenues.

b) risks in the structure of tax revenues

The structure of tax revenues includes:
- income tax and tax on capital assets,
- tax on goods and services,
- tax on international trade and transactions.

The risk factors of expected tax revenues in the estimate of **tax on income and capital assets** are predominantly in the sphere of withholding taxes, as a result of annual decrease in the dynamics of macroeconomic baseline growth and related presupposed decrease of average interest rate on deposits. Decrease in licence fees revenues paid depending on the amount of revenues or as a lump-sum payment upon production launching can also have a negative impact (ESA 2000). The possibility of taxpayers to remit 2 % of paid income tax for public benefit activities of non-governmental non-profit organisations has a negative impact on income taxes of natural persons and legal entities. Slower growth of employment and average nominal monthly wage are negatively reflected in the sphere of personal income tax. Lower growth of final consumption of households and annual decrease in the needs of public administration sector and expenses of SR government related to investments, resulting from the government's consolidation measures, can reflect negatively **in the estimate of the tax on goods and services**. In case of value added tax, a great potential source of tax evasion risk is created, particularly regarding chain and carousel frauds upon excessive deduction drawing. Actual occurrence of this risk is also proved by unfavourable development of the share of value added tax on GDP, which has been decreasing since 2005 regardless of increased, respectively decreased GDP growth.

The risk of expected state budget revenues from penalties is the low success in their collection and enforcement, which is also confirmed by annual decrease in the revenues from penalty interests, laid in tax proceedings for individual taxes. Tax and customs administration records a high share of non-enforced arrears, which represents the share up to 68 % in the overall tax arrears in case of tax administration.

Table 4 - Tax and contribution revenues of SR state budget (in thousands of euros)

	2011	2012	2013
Taxes on income, profit and capital assets	**3,442,244**	**3,728,513**	**4,023,558**
Personal income tax	1,681,506	1,830,692	1,862,127
PIT on dependent work	1,622,054	1,744,885	1,787,883
PIT on business	59,452	85,807	74,244
into the state budget	111,812	234,068	223,100
into municipalities	1,176,434	1,196,096	1,227,866
into self-governing regions	393,260	400,528	411,161
Corporate income tax	1,617,538	1,730,677	1,978,138
Income tax withheld	143,200	167,144	183,293
Taxes on goods and services	**6,742,793**	**6,277,236**	**6,339,497**
Value added tax	4,741,352	4,298,797	4,395,625
Excise taxes	2,001,441	1,978,439	1,943,872
On mineral oils	1,073,667	1,042,786	1,032,642
On alcohol	203,665	199,307	193,448
On beer	57,653	56,629	55,569
On wine	4,028	3,985	4,118
On tobacco and tobacco products	623,374	635,507	617,395
On electricity	16,029	16,616	16,656
On natural gas	22,441	22,639	23,270
On coal	584	970	774
Taxes on international trade and transactions	**38,748**	**30,759**	**27,144**
Import duty	54	83	98
Import supplement	3	5	4
Share on collected financial means	38,691	30,670	27,000
Other customs revenues	0	1	42
Local taxes	**567,542**	**611,265**	**628,192**
Tax on property	274,564	304,478	315,284
Tax on specific services	164,707	172,162	174,738

	2011	2012	2013
Taxes on income, profit and capital assets	**3,442,244**	**3,728,513**	**4,023,558**
Tax on motor vehicles	128,271	134,625	138,170
Other taxes	**105,231**	**284,495**	**375,592**
Tax on emission allowance	29,438	10,028	0
Special levy of selected financial institutions	0	169,753	204,316
Special levy on trade in regulated industries	0	30,381	97,927
Payment of public services provided by RTVS	73,917	72,375	71,500
Tax on payments for mining area	598	743	507
into the state budget	104	104	101
into municipalities	494	639	406
Tax on payments for the storage of gas or liquids	1,186	1,021	1,010
Property taxes (into the state budget)	151	190	332
Other taxes	-59	4	0
Social and health insurance funds (SHIF)	**6,941,222**	**7,185,879**	**8,259,800**
Social Insurance Company	**4,567,706**	**4,758,063**	**5,658,622**
Economically active population + owed	4,567,706	4,713,829	5,418,895
economically active population	4,256,265	4,465,555	5,190,684
owed	311,441	248,274	228,211
transfer of savings from a pension fund management company to Social Insurance Company – from the withdrawn		44,234	239,727
Health Insurance Company	**2,373,516**	**2,427,816**	**2,601,178**
Economically active population + owed	2,373,516	2,427,816	2,601,178
thereof: annual account	18,531	34,846	52,229
Overall tax revenues of public administration	**10,896,558**	**10,932,268**	**11,393,983**
Tax revenues of the state budget	8,683,725	8,450,210	8,751,605
State financial assets	0	200,134	302,243
Tax revenues of municipalities	1,616,199	1,673,375	1,718,294
Tax revenues of self-governing regions	521,531	535,153	549,331
Tax revenues of STV	0	0	0
Tax revenues of SRo	0	0	0

	2011	2012	2013
Taxes on income, profit and capital assets	**3,442,244**	**3,728,513**	**4,023,558**
Tax revenues of Radio and Television of Slovakia (RTVS)	73,917	72,375	71,500
Environmental fund	1,186	1,021	1,010
Overall SHIF	**6,941,222**	**7,185,879**	**8,259,800**

Source: www.finance.gov.sk

Table 4 clearly shows that significant part of state budget revenues is created by tax revenues, which is a reason why national tax policy is essential. According to the given analysis, revenues in the income tax item have increased. The given tax revenue growth has been caused by an amendment to the Act on income tax. The following legislation changes have been introduced by the amendment to Act No. 595/2003 Coll.:

- The introduction of a possibility to apply lump sum expenses in the maximum amount of EUR 5,040 per year, respectively EUR 420 per month, and the cancellation of a possibility to apply lump sum expenses upon rental income.
- The application of non-taxable part of the tax base for the wife (husband) living in a common household with the taxpayer and taking care of an underage child also living in a common household with the taxpayer until the expiration of entitlement for parental allowance for child, or receiving attendance allowance in the tax period, or registered at the Labour Office.
- The implementation of a possibility to apply tax credit only under the condition that taxpayer amounts at a minimum statutory level of so called “active income”, i.e. from the revenues for dependent work under Section 5 of the Act on income tax and income tax on business and other self-employment under Section 6, Clauses 1 and 2 of the Act on income tax.
- The introduction of progressive taxation on income of natural persons with two tax rates, while the higher of these rates is applied for natural persons with above-standard income.
- The introduction of a special tax rate in the amount of 5 % for all selected senior officials (members of parliament, president, members of government, chairman and vice-chairman of the Supreme Audit Office).

- The increase of tax rate for legal entities (tax rate was 19 % in 2012, 23 % in 2013 and it will be 23 % in 2014).
- The exemption of income from mining deputations from income tax, including social and health payments; modification of the structure of income from dependent work so that non-financial income provided by an employer to former employees following employment termination, to pensioners as well as remuneration for members of election and regional commissions at elections and referenda were not involved the social insurance tax base.
- The taxation of profit shares (dividends) paid from retained earnings before 2004 by a tax rate in the amount of 15 %.

c) risks in budget relations between SR and EU

In line with the decisions of the Council of the European Union, budgetary revenues from the EU general budget are divided as follows (European Commission, 2010):

- those included in the revenues and expenditures of state budget, particularly revenues from agricultural funds and revenues for financing the programmes of National Strategic Reference Framework.
- those not included in the revenues and expenditures of state budget, particularly revenues from the EU domestic policies, revenues for the shutdown of V-1 block of Jaslovské Bohunice Nuclear Power Plant, revenues from the financial mechanism of the European economic mechanism, Norwegian financial mechanism and Swiss financial mechanism, and other means from abroad provided to SR on the grounds of international agreements executed between SR and other states.

Table 5 - Deductions and contributions of SR into the General Budget of the European Communities between 2010 and 2013 (in thousands of euros)

	2010	2011	2012	2013
Overall deductions of SR including traditional own resources	901,477.0	744,976.7	780,198.1	768,887.6
Overall contributions of SR in the Research Fund for Coal and Steel and the European Development Fund	0.0	6,363.0	8,500.0	8,500.0

	2010	2011	2012	2013
Overall deductions and contributions of SR including traditional own resources	**901,477.0**	**751,339.7**	**788,698.1**	**777,387.6**
Overall deductions and contributions of SR excluding traditional own resources	**771,877.0**	**656,539.7**	**692,002.1**	**678,757.7**

Source: www.finance.gov.sk

A risk factor in this sphere of receiving the revenues from the EU budget is dependence on the level of ambitious arrangement of withdrawing means from Structural Funds and Cohesion Fund by respective ministries fulfilling the functions of managing authorities. The role of SR is to acquire a sufficient amount of quality projects, functional system of management and control, able to operate not only ex-post but particularly preventively. To eliminate the given risk is to prevent wrong and illegal usage of financial means of the EU, thus ensuring the prevention of threat that the European Commission reduces part of the EC liability, or makes financial corrections in order to find severe discrepancies in relation to generally binding legal regulations and rules of SR and the EU. It is therefore necessary to identify inherent as well as control risks and purposefully focus on their management, which presupposes a reliably and transparently functioning financial management system based on coordination and cooperation of all involved parties. Risk factors can also include insufficient verification of the readiness of major projects, enabling the assessment of the EU resources withdrawal feasibility, extensive or unclear financing goals, and greater focus on inputs than on results.

B) in the budgets of self-governments

Legal regulation of the budgets of self-governments under the conditions of the Slovak Republic is ensured by the Act No. 583/2004 Coll. on budgetary rules of local self-government. Self-government budgets represent the budgets of municipalities and self-governing regions [7].

a) municipal budget

The basis of self-government under the Constitution is a municipality. The municipalities of SR function under the Act No. 369/1990 Coll. on municipal regulation as amended. Upon municipal budgeting, municipalities follow the Act No. 583/2004 Coll. on budgetary rules as amended.

Table 6 - Overview of revenues and expenditures of Slovak municipalities between 2010 and 2013 (thousands of euros)

Overall municipal revenues	**2011**	**2012**	**2013**
	3,998,577	**3,784,563**	**3,971,428**
▪ tax revenues	1,618,979	1,674,254	1,733,873
▪ non-tax revenues	411,852	501,053	471,276
▪ grants and transfers	1,453,242	1,310,702	1,307,279
▪ revenues from domestic loans repayments and from selling of ownership (FO)	29,757	5,600	10,000
▪ the balance of resources from previous years and transfer of resources from financial funds and others (FO)	150,680	114,135	233,000
▪ received loans (FO)	334,067	178,819	216,000
Overall municipal expenditures	**3,848,533**	**3,736,244**	**3,641,253**
▪ wages and deductions	1,278,602	1,285,652	1,236,924
▪ goods and services	940,607	944,393	848,009
▪ standard transfers	354,451	361,199	368,423
▪ interests payment	29,655	32,000	28,000
▪ capital expenditures	861,541	920,000	884,897
▪ loans and share on property (FO)	12,136	13,000	15,000
▪ principal payment (FO)	371,541	180,000	260,000
Overall surplus of municipalities	**150,044**	**151,650**	**331,895**
Exclusion of financial operations	***-130,827***	***-192,000***	***-184,000***
▪ exclusion of income FO	-514,504	-385,000	-459,000
▪ exclusion of expenditure FO	383,677	193,000	275,000
Inclusion of accruals and other modificaitons	***10,312***	***-10,000***	***-10,000***
Municipal deficit (ESA 95)	**29,529**	**-50,350**	**137,895**

Source: www.finance.gov.sk

As Table 6 shows, economy of municipalities between 2010 and 2013 was complicated, as municipalities are dependent on the state budget, because by means of transfer payments, they obtain financial means to cover expenditure resulting from transferred competencies. Besides these revenues, they also deal with tax and non-tax revenues.

Crucial revenues of municipalities are revenues from local taxes. Tax rates of local taxes are set by generally binding municipal regulation. Table 6 shows that the amount of municipal revenues, compared to 2011 and 2012, has an increasing tendency. The given development is caused by increased local tax rates.

b) the budget of self-governing regions

Self-governing regions follow the Act No. 583/2004 Coll. on budgetary rules of local self-government upon budgeting. The key

revenues of self-governing regions are revenues from the transfer of shared taxes and taxes on motor vehicles. The analysis shows that increased revenues from tax on motor vehicles were recorded in 2013, as individual self-governing regions increased the tax on motor vehicles by means of a generally binding regulation.

Table 7 - Overview of revenues of self-governing regions between 2010 and 2013 (thousands of euros)

	2010	2011	2012	2013
Overall tax revenues with penalties	**451,432**	**523,985**	**552,669**	**554,838**
transfer of personal income tax	332,825	394,515	422,840	421,139
tax on motor vehicles	118,607	129,470	129,829	133,699

Source: www.finance.gov.sk

Further income resources include non-tax revenues of self-governing regions. Non-tax revenues result from activities in organisations under the establishing authority of a self-governing region in the sections of welfare, education, transport, from capital income and interests on the resources of own management. Their overall amount in 2013 was EUR 89,000, amounting from administrative and other fees and payments in the amount of EUR 59,000, particularly in the section of welfare - from payments of people living in social services facilities for provided services like board, accommodation and care, in the section of education – from income obtained from registration and tuition fees at schools of arts, accommodation fees in homes of the youth, rent payments, etc. Income from managing the property of self-governing regions, from interests on own resources, from deposits, from own resources management amounted at EUR 11,000, and other non-tax revenues amounted at EUR 6,000 in 2013. EUR 13,000 is the amount of capital income (from property sales) in 2013.

5. Summary of Knowledge Obtained from Analysis and Proposals for Solutions

The aforementioned analysis shows that it is necessary to minimize the identified risks. Framework views of individual issues are provided in Table 9.

Table 8 - Framework proposals

No.	Type of risk	Framework proposals
1	Ad A) Public budget a) risks in the public budget itself b) risks in the tax revenues structure c) risks in budgeting relations	- to adopt measures in control mechanisms - to tighten up measures arising from the Act on budgeting responsibility - to support the activities of tax authorities particularly in the sphere of control and execution (effective recovery of tax-related claims) - to enhance a possibility to withdraw from the provided EU funds
2	Ad B) Budget of self-governments a) municipalities b) self-governing regions	- to strengthen the competencies of main inspectors in municipalities - to focus attention of financial audit on the monitoring of indebtedness of self-governing regions

Source: Authors

It is necessary in the present lack of financial means in the state to deal with risk factors affecting the state budget as well as the budgets of self-governments. Based on the aforementioned analysis, deficit reported in public finance requires, besides others, thoroughly carried out financial audit, which can reduce, respectively eliminate these risks.

6. Conclusions

Proposals of solutions regarding the elimination of risks of financial audit execution can be summarised as follows:

- to introduce an obligation of auditors to express an opinion on Section 17, Clause 6 of the Act on budgetary rules of self-government and on change and amendment of some laws, based on which a municipality and a self-governing region can only receive reimbursable resources for the fulfilment of their tasks, if
    a. overall amount of municipal or regional debt does not exceed 60 % of actual ordinary income of the preceding budgetary year, and
    b. the amount of annual repayments of reimbursable resources including the payment of revenues does not exceed 25 % of actual ordinary income of the preceding budgetary year.
- stricter rules of financial control in the sphere of economy, effectiveness, efficiency and expediency upon managing public means,

- to assess management and control processes,
- to enhance the effectiveness of risk management on the grounds of systematic approach,
- to use project management as an innovation form of risk audit.

The authors of the submitted article were dealing with the risks within financial audit and possibilities of their elimination. Any changes are necessary to be observed legislatively. It will therefore be a long-term process and current signs of possible solutions may only be the beginning of a long way towards improvements in this sphere.

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