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CONTENTS

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CUSTOMER PROFILING BASED ON THE CRITERIA OF SUSTAINABLE CONSUMPTION

The ever-increasing implementation of the concept of sustainable business development changes the market focus of many companies. This is the result of striving to serve a specific market segment with strong development potential – the "sophisticated" customers' market. The principle idea is that "sophisticated" customers have high ethical consciousness and intense sustainable consumption. This article attempts to determine whether a segment of "sophisticated" customers can be identified in a specific branch of the Bulgarian economy (sale of carbonated soft drinks) and what its characteristics are. On this basis, an original model (SMF-model) of customer profiling has been developed which reflects the concept of customer sophistication. The abovementioned model can be useful for optimizing the customer portfolios of the companies and for more effective financial planning.
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1. Introduction

Over the last two decades, the striving of a part of business and society to achieve a stable balance between economic, social and environmental goals became more and more tangible, which is the base of the concept of sustainable development. On the one hand, this process stimulates the modification of the profile of certain market segments. On the other hand, the dynamics of demand, manifested by a specific group of customers, determines the development of the concept of sustainability. Inevitably, these changes are accompanied by a new orientation of the market focus of many companies to supplying sustainable offers addressed to customers identified as "sophisticated". These customers can also be defined as "complex". Their requirements give reason to classify them as more complex in the service process. Sophisticated customers are distinguished by high ethical consciousness and intense sustainable consumption. The latter two features can be considered as a natural consequence of the evolution process in the profile of a significant proportion of customers.

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The ability of companies to identify segments with the specified features can add value to businesses in several ways: 1) it allows companies to better profile their market offers which creates prerequisites for higher customer satisfaction, repeated purchases, recommendations to potential customers, etc.; 2) optimizing customer portfolios of companies with a focus on higher-value customers or customers that require services related to specific competencies of the suppliers; 3) more effective financial planning based on knowledge of the characteristics of individual customer groups within customer portfolios etc.

2. Literature review

A series of scientific researches show that parallel to the development of markets, the profile of the customers is dynamic. Customers become: significantly more experienced in purchases (Sproles, Geistfeld & Badenhop, 1978); clearly more educated (Hirschman, 1980); they have major access to information and, as a result, they are better informed (Alba & Hutchinson, 1987); they are more competent in their customer's choice (Feick & Price, 1987); they are more value-orientated (Feick & Price, 1987). This leads different specialists to the conclusion that the proportion of modern customers who identify themselves as "sophisticated" is becoming larger (Titus & Bradford, 1996; Sauer, 1998).

To define the essence of the segment of the "sophisticated" customers in marketing theory, two schools were conventionally formed. According to the representatives of the first (Sproles, Geistfeld & Badenhop, 1978; Bames & McTavish, 1993), "sophistication" is a set of certain characteristics specific to customers. It is associated with possession of sufficient information, knowledge, education and user experience, based on which informed (and effective) purchasing decisions can be taken. Effectiveness of customer solutions is understood as getting the maximum benefit and satisfaction from the choices made.

Supporters of the second school (Titus & Bradford, 1996; Wu & Titus, 2000) do not reject the standpoint on the essence of "sophistication". They develop it further by pointing out that the basis for its formation are the afore-mentioned characteristics, but the true manifestation of "sophistication" is using these characteristics in "wise" consumer decisions and choices. In other words, the "sophisticated" customer is not just a well-informed, experienced user with high criteria and requirements when choosing a product / service. This is a person who, on the basis of accumulated information and knowledge, makes purchasing decisions in which he seeks a balance between meeting his or her personal goals and desires with those of proposers' future generations, and society as a whole. In the context of the sustainable development concept, it can be concluded that "sophistication" is a form of sustainability manifested at the level of "individual consumer behavior".

Liu (2010) contributes to clarifying the specifics of "sophisticated" customers by describing them as well-informed subjects who are constantly looking for and updating the information they have. They know the market well; have high product knowledge and experience. They tend to try new products, but they are always prone to values in their decision-making and purchasing choices. In the context of the afore-mentioned, three of the most relevant to consumer sophistication conclusions were made: (1) a higher perception of

the own "self"; (2) higher self-esteem which is inherent in "sophisticated" customers; (3) a tendency to reach a higher level of satisfaction with the purchases made. The latter is a prerequisite for "sophisticated" customers to be considered as a segment with a significantly higher potential for loyalty, which makes them an attractive target market for companies.

It is important to emphasize that the commented consequences are conditional. Conducted empirical studies show that "sophisticated" behavior can be highly influenced by the action of a set of socio-demographic factors such as gender, age, race, education, income level, religiosity level and political orientation (Kaufmann, Ali Khan Panni & Orphanidu, 2012).

For example, Kollmuss & Agyeman (2002) found that in the comparative perspective, demographic factors have the strongest impact on consumer demand for sustainable consumption. These authors explore the role of the said factors in the context of pro-ecological consumer behavior. They identify how and to what extent these factors provoke or deter consumers from choosing ecological / environmentally friendly products. For the purposes of this study, we assume that the pursuit of environmentally friendly products consumption is part of the overall striving to sustainable consumption. The basis for this assumption is the model of the three pillars of sustainable development.

Singhapakdi, et al. (2001) believe that gender, age and education are determining factors for shaping consumers' purchase decisions. While some authors do not see an objectively existing difference in male and female responses to companies' commitment to Corporate Social Responsibility (CSR)[3] which is reflected in their consumer behavior (Robin & Hunt, 1997), the majority of studies show that women are significantly "more sophisticated" in their consumer choice (Kaufmann, Ali Khan Panni & Orphanidu, 2012).

Age is a factor whose impact on sustainable consumption can be interpreted unambiguously. Some authors point out that "sophistication" is inherent in younger generations (Barksdale & Darden, 1972), while others identify older adults as "sophisticated" (Vitell, Lumpkin & Rawwas, 1991), for instance, Harris, Burress, & Eicher (2000) describe the "sophisticated" customers as "white women at a younger age", thus adding one more factor to the already commented demographic factors – namely race. Taking account of the regional location of this study in Bulgaria, it is important to emphasize that "race" remains beyond the scope of the research toolbox and is mentioned only in terms of a more comprehensive theoretical framework.

Education is another factor with an undoubtedly essential impact on sophisticated customer profile. In the early 70s of 20th century, the concept of sustainable development was in the initial stage of establishing. Even then, the importance of education in the formation of consumer purchasing decisions (Hustad & Pessemier, 1973) was discussed. Years later,

[3] Corporate Social Responsibility (CSR) can generally be defined as a strategy for achieving "sustainable development". It is widely accepted in the scientific community that the long-term survival and success of business organizations requires them to assume responsibility for the impact of their activities on all of their interested parties, which is precisely their social responsibility. Accumulating the effects of such behavior from all business units enables the achievement and keeping sustainable development of the entire economic system.

Mohr, Webb & Harris (2001) confirmed that the high level of education is the basis of "sustainable consumption". Furthermore, intelligent growth established itself as one of the leading priorities for modern companies. Thus, education is regarded as one of the main pillars of sustainability, and in this sense, it is an inherent characteristic of "sophisticated" customers.

In addition to a high level of education, "sophisticated" customers are also supposed to have a high level of income. The results of a survey on the role of income in „green" consumer behavior (Junaedi, 2012) prove that good education is at the core of "sophisticated" user behavior. However, it can be realized only in the presence of high income. To a large extent, this is explained by the fact that the predominant part of the sustainably produced items (as well as of the environmentally friendly produced ones) has a higher market price.

It should be mentioned that there are authors who pay attention to the feedback, indicating that income levels determine the importance of CSR among all factors, which have an influence on the decision to purchase. Only customers with stable financial status demonstrate an interest in the commitment of companies to CSR and reflect the importance of "sustainability" in their consumer decisions (Öberseder, Schlegelmilch & Gruber, 2011).

According to a research, another factor that influences the customers' "sophistication" is religiosity. Research results confirm that religious customers attach greater importance to the ethical aspect of the behavior of business organizations (Ramasamy, Yeung & Au, 2010) and have a more pronounced demand for "sustainable" consumption.

According to some studies, the political orientation of the customers also has an effect on "sophistication". Customers with left-wing political orientation are believed to be more positive about companies' engagement with CSR (Mueller & Theuvsen, 2014). This dependence has its logical conditionality. In the political context, the "left-wing" reflects the protection of the interests of all social groups. This largely corresponds to one of the widely accepted understandings of the nature of CSR as a form of corporate behavior where the companies perform their economic, legal, ethical and philanthropic responsibilities towards all their interested parties.

The commented formulations give reason to summarize that "sophisticated" customers correspond to a particular socio-demographic profile. However, this profile may be formed by factors of varying configuration and intensity. Therefore, even in a segment of customers who more or less have the characteristics of "sophistication" and/or identify themselves as "sophisticated", variations in appearance of the commented socio-demographic factors can lead to a situation of a "gap between consciousness and behavior" in the practical realization of the concept of "sophistication". This consideration has been taken into account in the design and implementation of the research toolbox in this study.

The afore-mentioned gives a reason to conclude that the verification of the hypothesis of an existing segment of sophisticated customers in a specific branch of the Bulgarian economy is also of scientific interest. What is more, the verification of this hypothesis gives grounds for concluding the applicability of trends in consumer behavior on a global scale in the context of the Bulgarian market environment. In this regard, the concept of consumer

sophistication is seen as one of the leading global trends in consumer behavior for 2019 (EUROMONITOR INTERNATIONAL – Top 10 Global consumer trends 2019).

Therefore, *the main goal of the article* is to design a research, to assemble, process and analyze data and to present and comment the results of the customer base profiling process in a selected business branch in Bulgaria and thus to determine whether a segment of "sophisticated" customers can be identified. The subject of the study are the consumers of carbonated soft drinks in Bulgaria. The choice of subject is determined by the following reasons: (1) According to data of the National Statistical Institute in Bulgaria, there is a steady trend of growth in the consumption of carbonated soft drinks per person in a household – from 50.9 liters in 2010 to 65.3 liters in 2017. These data give reason for assuming that in this market, conditions for developing consumer loyalty exist (i.e. repeated repurchase of certain brands and high probability of making recommendations). (2) The leader in market of carbonated soft drinks in Bulgaria with a market share of almost 50% (Coca-Cola) is among the companies that are the benchmark for socially responsible behavior worldwide. (3) The producers of carbonated soft drinks materialize CSR and make the effects of the use of this concept visible to the end-user by producing high-quality products, using recyclable, recycled and/or biodegradable packaging; engaging in social causes that are relevant to society and environment, charity events and care for the communities. Considering the chosen object of research, the concept of consumer "sophistication" is interpreted only in an „off-line environment", without taking into consideration the digital influences on the behavior of sophisticated customers.

3. Research methodology

The fulfillment of the formulated goal requires the implementation of a procedure for profiling the consumers of the carbonated soft drinks market in Bulgaria. User profiling aims to "shed light" on the following research issues: 1) Is it possible to define a segment of "sophisticated customers"? 2) What are its characteristics? The answer to these questions may direct the study to the question of what part of the market this segment constitutes. Having a sufficient number of "sophisticated customers" is an argument for appropriateness and profitability of investments aimed at developing the potential of the segment. Furthermore, this allows one to make relevant conclusions regarding the applicability of the concept of "consumer sophistication" in Bulgaria.

While designing this study, the user profiling process was done in three steps:

First. The respondents are distinguished by six socio-demographic criteria that theory establishes as determining consumer "sophistication".

Second. Additionally, information about the level of respondents' compliance with additional 10 criteria is collected and processed which the theory acknowledges as characteristics and consequences of consumer "sophistication".

Third. At the final stage of profiling, surveyed consumers of carbonated soft drinks are grouped into clusters according to the degree of their "sophistication" and the level of their

yield. This is essential in planning and implementing effective strategies of customer relationship management.

Data collecting was conducted by using survey forms. The end customers were approached through an online research platform where an electronic version of the survey was created. After a positive answer to a filtering question: "Do you consume carbonated soft drinks?" the sample consists of 276 respondents. In this sense, the results of the study are relevant for the aggregation.

The survey was designed in 5 blocks, covering issues related to: (1) consumer profile; (2) consumer choice factors when buying carbonated soft drinks; (3) the general understanding of the nature of CSR; (4) consumer loyalty and (5) consumer assessment of the CSR impact on consumer loyalty.

For the purposes of this study, which focuses on determining the relevance of the concept of "consumer sophistication" in Bulgaria, only data generated by block 1 and block 4 were used.

The statistical processing of the collected primary information was carried out with software products MS Excel 2007 and SPSS 17.0. The data from the empirical study were processed by a combination of statistical methods, including – descriptive, correlation, regression, and χ^2-analysis. Conclusions and summaries were formulated and presented using charts.

Convergence and criteria validation tests were conducted, which help to draw conclusions about the inclusion of various operational variables in the general „consumer sophistication" construct. The relative importance of the operative variables was determined by standardized ß-coefficients.

A SMF-method was applied in the final stage of the user profiling process. The name SMF derives from the combination of terms "Sophistication" (S), "Money" (M) and "Frequency" (F). Through the application of this method, users of soft drinks can be further grouped based on: (1) the level of their "sophistication" (S); (2) the money they spend on purchasing such type of products (M) and (3) the frequency of purchases (F). Each of the elements of the SMF-method is characterized by 5 dimensions, which are respectively coded with numbers 1 through 5 as follows: *Sophistication:* "I can identify myself as a" sophisticated" consumer (with options: "definitely no" , "Rather no", "I cannot identify myself", "rather yes", "definitely yes"); *Money:* "I spend … on purchase of carbonated soft drinks monthly" (options: "up to BGN 3", "from BGN 3.01 to BGN 9", "from BGN 9.01 to BGN 12", „from BGN 12.01 to BGN 25", „over BGN 25"); *Frequency: „*I buy carbonated soft drinks ....." (options: „once a month", „2-3 times a month", „once a week", „2-3 times a week", „every day").

For each of the described metrics (SMF), there is a corresponding question within each questionnaire, whose answers are ranged in the same way. This allows each consumer of carbonated soft drinks that took part in the study, to be labeled with an individual code after processing of the collected information. Individual consumer codes serve as a criterion for shaping clusters.

4. Survey Findings and Discussion

The consumers' perception of the level of their „sophistication" is interesting. The question „Generally, compared to other users, do you think you have the characteristics of a „sophisticated customer?" is measured by a 5-point scale (from 1 – „definitely no" to 5 – „definitely yes"). It was explained what the characteristics of the „sophisticated" customer include: a highly ethical consciousness; ethical consumer behavior; education, awareness, experience, competence; concern for society and the environment; a high degree of personal self-assessment and self-esteem; high level of satisfaction. A surprisingly high relative share (74%) of the participants in the study identified themselves as „rather sophisticated" (58%) and "definitely sophisticated" (16%). The magnitude of the average score for the scale is of 3.73 and is positioned in the positive part of the scale. Only 13% of respondents gave a negative answer and the same relative share of the answers were given by those persons who find it difficult to give an unconditional answer. Provided that such a high percentage of individuals included of the study identify themselves as „sophisticated", it is interesting whether their profile „overlaps" the profile established in other studies.

The 3-step methodology of consumer profiling in the selected market begins with a description of the percentage distribution of the sample of 276 respondents based on 6 basic socio-demographic criteria, established by the theory as determining consumer „sophistication" (Table 1). The summarized results, presented in Table 1, show that the majority of respondents included in the study: are 18-45 years old, have completed secondary education, have personal average monthly income between BGN 511 and BGN 1000; are religious and centrist politically oriented.

The profile shaped substantially differs from the profile which theory suggests as inherent to the „sophisticated user" and namely: (1) women; (2) at a younger or more advanced age (there is a lack of consensus in the scientific community); (3) with a high level of education; (4) with a high level of disposable income; (5) religious and (6) with left-wing political orientation.

Of course, a possible reason for this may be the profile of respondents included in the sample. On the other hand, one cannot underestimate the fact that even within the sample, a profile of respondents is formed which, based on the criteria „education", „income", „religious" and „political orientation", is significantly different from the typical „sophisticated" customer profile.

The high percentage of „sophisticated" customers (74%) can be regarded as a natural result of the relatively high level of relevance that consumers find in the statements presented in Table 2. These statements are assessed on a 5-point scale (from 1 – „entirely not relevant" to 5 – „fully relevant"). They describe the characteristics and the consequences of „consumer sophistication". The estimates of the degree of relevance of these statements to the respondents serve as criteria for the profiling of the latter.

Table 1

Socio-demographic profiling of the participants in the study

CUSTOMER PROFILE		
Criteria	Meaning of Criterion	Distribution of respondents (%)
Gender	Male	47.0
	Female	53.0
Age	Up to 18 years	1.0
	18-30 years	35.0
	31-45 years	35.0
	46-60 years	28.0
	Over 60 years	1.0
Education	None	1.0
	Primary education	6.0
	Secondary education	48.0
	Vocational training after secondary education (but not higher)	12.0
	Higher education – Bachelor, Master, Doctor etc.	33.0
Personal average monthly income	Up to BGN 510	17.0
	BGN 511 – BGN 1000	41.0
	BGN 1001 – BGN 1500	24.0
	BGN 1501 – BGN 2000	12.0
	Over BGN 2000	6.0
Religiosity	Religious	54.0
	Not religious	46.0
Political orientation	Hard left	8.0
	Left-centered	9.0
	Centered	44.0
	Right-centered	28.0
	Hard right	11.0

Table 2

Characteristics and consequences of consumer „sophistication" (%)

Statement	1	2	3	4	5	Mean
	1 – entirely not relevant 5 – fully relevant					
1. I have a high degree of ethical consciousness.	6	11	16	32	35	3.78
2. To a high degree, I have an ethical user behavior.	6	13	22	33	27	3.63
3. I belong to consumers who are constantly looking for information about products / brands and in particular about carbonated soft drinks.	10	16	30	27	17	3.24
4. I believe that I am well informed and aware of the market of carbonated soft drinks, which allows me to make reasoned consumer decisions.	6	16	28	28	22	3.43
5. I have vast experience because I have tried different brands of carbonated soft drinks.	8	14	23	30	25	3.50
6. I tend to try new carbonated soft drinks available on the market.	7	19	25	25	25	3.42
7. I belong to the consumers for whom price, quality and the effect of the product's consumption on people and the environment are equally important.	5	11	21	29	34	3.75
8. I have a high self-assessment	4	15	29	30	22	3.50
9. I have a high self-respect	4	12	31	30	23	3,55
10. I usually experience a high level of satisfaction with the purchases I make.	3	13	25	38	20	3.59

The data in Table 2 show that the mean scores for all statements ranged between 3.24 and 3.78. The positioning of the mean scores in the positive part of the 5-point scale means that in general, consumers of carbonated soft drinks in Bulgaria perceive themselves as people who: have a highly ethical consciousness; exhibit ethical consumer behavior to a high degree; are constantly searching for and updating information about the products they buy and use, and thus are able to make informed consumer decisions; have experience; are competent; tend to try new products in the market; are concerned about the effects which their use / consumption has on society and the environment; have a high self-assessment, a high degree of self-respect, and a high level of consumer satisfaction.

These characteristics complete the impression of the „sophisticated" customer profile. Moreover, the results from the tests of the convergence and criterion validity of the operational variables block confirm the relevance of each of the 10 statements in forming the overall idea about the essence of the „sophisticated" customer. The regression analysis gives a deterministic capacity of approximately 76% (R^2 = 0.757, α = 0.000), indicating that the operational variables sufficiently well describe the studied construct ("consumer sophistication").

The most significant weight for the formation of consumer sophistication are the following variables: (1) „degree of ethical consciousness"; (2) „ethical consumer behavior"; (5) „vast consumer experience"; (6) „tendency for tasting new products" and (10) "level of satisfaction from purchases" (the standardized β-coefficients are respectively: variable No. 1 (0,535); variable No. 2 (0,279); variable No. 5 (0,127), variable No. 6 (-, 109) and variable No. 10 (0.158).

The repeated regression analysis with eliminating the components, which are non-essential for forming a self-assessment of „sophistication", confirm the strong deterministic capacity (R^2 = 0,753, α = 0,000) of these five statements (respectively No. 1, No. 2, No. 5, No. 6, and No. 10). Table 3 presents the extent of their significance in percentages.

Table 3

Significance of the variables describing the characteristics and consequences of the „sophistication" in forming the self-assessment of the respondents

Variables	β-coefficients	Weight in % in forming consumer „sophistication"
(1) Degree of ethical consciousness	0.528	45
(2) Demonstration of ethical consumer behavior	0.268	23
(5) Vast user experience	0.126	11
(6) Tendency to try new products	-, 114	10
(10) Satisfaction from purchases	0.132	11

Based on the data presented, it can be concluded that consumer „sophistication" is predominantly determined by the degree of ethical consciousness (45%) and the degree of ethical consumer behavior (23%). This distribution somehow suggests that there may be a „gap between consciousness and behavior." Very often ethical consciousness has no practical projection in real behavioral actions, which raises the question of whether consumer „sophistication" is an objectively existing form of consumer behavior or exists

but rather has characteristics of a latent construct. As a latent construct, it cannot be monitored and measured directly, but only by means of multiple variables.

The commented data show that regarding the ethical consumer consciousness and ethical consumer behavior as determinants of „sophistication" (in its entirety) is an important aspect of the process of profiling of consumers of soft drinks in Bulgaria. However, at the same time, the question whether respondents, who have declared ethical consciousness and behavior, possess characteristics similar to the profile of „sophisticated consumers", described in other studies, must be answered.

The data in Table 2 show that 67% of respondents perceive themselves as people with high ethical consciousness; 60% state that they also exhibit a high degree of ethical consumer behavior. Despite the high percentages, the juxtaposition of these two criteria to the six socio-demographic characteristics which theory describes as inherent for the „sophisticated" consumer shows that of only two all 276 respondents correspond to the perfect profile of „sophisticated" customer (a woman, irrespective of age, highly educated, with high income, religious, left-wing politically oriented, high ethical consciousness and highly ethical behavior). Based on this, two conclusions can be formulated:

First. There is a significant socio-demographic discrepancy between the profile of respondents, participating in the study, and the theoretically defined profile of the typical „sophisticated" consumer.

Second. The said respondents form a high percentage of consumers who assessed themselves as „sophisticated" and have both high ethical consciousness and highly ethical consumer behavior.

The established contradiction raises the question if the theoretically justified relationship between the socio-demographic characteristics of consumers and the level of their „sophistication" exist indeed. χ^2-analysis was used to check this hypothesis. The respective χ^2 and Cramer coefficients are indicative and aim to confirm/deny the existence of a statistically significant relationship between the studied constructs (Table 4).

The results, summarized in Table 4, show that there is no statistically significant relationship between age, income level, religiosity and political orientation on the one hand, and ethical consciousness, ethical consumer behavior and consumer „sophistication" on the other hand. The tests indicate that, to a certain extent, the latter is predetermined by gender and educational level, but the found relationship is of low magnitude.

On the basis of the data presented, it can be summarized that in the market of carbonated soft drinks in Bulgaria, there is a segment of „sophisticated" consumers who have ethical consciousness and behavior but do not meet the socio-demographic criteria of „sophistication" which have been described as determinants of this form of consumer behavior by studies, conducted in other countries.

Table 4

Testing the relationship between socio-demographic factors and consumer „sophistication"

Determinants of consumers' „sophistication"	Consumer „sophistication"	Presence/lack of relationship *Pearson Chi-Square Asymp. Sig (2-sided)*	Strength of relationship Cramer's V
Gender	Ethical consciousness	Presence of relationship Chi-Square = 0.004	Weak relationship Cramer's V = 0.236
	Ethical behavior	Presence of relationship Chi-Square = 0.001	Weak relationship Cramer's V = 0.260
	Self-assessment about „sophistication"	Presence of relationship Chi-Square = 0.001	Weak relationship Cramer's V = 0.253
Age	Ethical consciousness	Presence of relationship Chi-Square = 0.022	Weak relationship Cramer's V = 0.163
	Ethical behavior	No relationship Chi-Square = 0.079	-
	Self-assessment about „sophistication"	No relationship Chi-Square = 0.521	-
Education	Ethical consciousness	Presence of relationship Chi-Square = 0.000	Weak relationship Cramer's V = 0.252
	Ethical behavior	Presence of relationship Chi-Square = 0.000	Weak relationship Cramer's V = 0.223
	Self-assessment about „sophistication"	Presence of relationship Chi-Square = 0.001	Weak relationship Cramer's V = 0.193
Personal average monthly income	Ethical consciousness	No relationship Chi-Square = 0.552	-
	Ethical behavior	No relationship Chi-Square = 0.341	-
	Self-assessment about „sophistication"	No relationship Chi-Square = 0.740	-
Religiosity	Ethical consciousness	No relationship Chi-Square = 0.958	-
	Ethical behavior	No relationship Chi-Square = 0.937	-
	Self-assessment about „sophistication"	No relationship Chi-Square = 0.919	-
Political orientation	Ethical consciousness	No relationship Chi-Square = 0.094	-
	Ethical behavior	No relationship Chi-Square = 0.088	-
	Self-assessment about „sophistication"	No relationship Chi-Square = 0.074	

The final step in the profiling of consumers of carbonated soft drinks in Bulgaria is connected to their differentiation in clusters according to the level of their „sophistication" and income. It is essential for companies for two main reasons: (1) it creates prerequisites for optimizing customer portfolio because the management of customer relationships is mostly aimed to the most valuable and the most profit-generation ones for the company; (2) it makes financial planning more efficient. The ever-increasing implementation of the

concept of „sustainable development" requires companies to invest in the sphere of CSR. These investments must be secured with a sufficiently high level of return, so the companies are not placed in a paradoxical situation – to be blamed as irresponsible because of failure to fulfill their economic responsibility

A SMF method, described in the Methodology section, is proposed for determination of clusters. The individual consumer codes serve as a criterion for shaping clusters. The latter are presented in Table 5, and there is information about the distribution of consumers in these clusters based on their individual encoding.

Table 5

Consumer clusters (SMF-method)

No.	Consumer Clusters (based on SMF parameters)	Number of consumers with individual coding corresponding to the cluster's coding	Distribution in %
1	Customers with code 555 for all three parameters	5	2
2	Customers with 5 or 4 in the first position of the code and a combination of following positions in the range 4-5	65	24
3	Customers with 5 or 4 in the first position of the code, a combination of following positions in the range 1-3 and 3 in the last position	71	26
4	Customers with 5 or 4 in the first position of the code, a combination of following positions in the range 1-3 and 2 in the last position	44	16
5	Customers with 5 or 4 in the first position of the code, a combination of following positions in the range 1-3 and 1 in the last position	18	6
6	Customers with 3 in the first position of the code regardless of a subsequent combination of positions	36	13
7	Customers with 1 or 2 in the first position of the code and a combination of following positions in the range 3-5	29	10
8	Customers with 1 or 2 in the first position of the code and a combination of following positions in the range 1-2	8	3

A total amount of 8 clusters were formed. Cluster No. 1 includes only those consumers who correspond to the encoding 555. These are the most desirable and valuable to producers/ bottlers of carbonated soft drinks customers, as they identify themselves as „sophisticated" and make daily purchases of great value. This cluster includes the lowest number of consumers – only 2%.

The distribution of the respondents in the next four clusters (from 2nd to 5th including) is interesting. These comprise consumers who express a positive opinion about the level of their „sophistication". The differentiation among them results from differences in their consumer behavior. Cluster No. 2 (24%) includes „sophisticated" customers that regularly (2-3 times per week) make purchases of high value, but not necessarily of the maximal said value. Cluster No. 3 (26%) also covers users who identify themselves as „sophisticated", but their frequency of purchase is lower (once a week), the amount of cash spent for carbonated soft drinks is smaller. Cluster No. 4 (16%) and No. 5 (6%) are similar. The difference is in the significantly lower frequency of purchases – 2-3 times per month for cluster No, 4; once per month for Cluster No. 5. This is an indication for the objective existence of the so-called „gap between consciousness and behavior", or in other words, the customers have high ethical consciousness, but in it is not reflected into real behavioral actions. It is possible to allow another interpretation of the data: consumers who identify themselves as „sophisticated" are seeking to consume products that have the most limited negative effect, including on their health; this suggests that a truly „sophisticated" consumer does not actually consume carbonated soft drinks or consumes such, but in a very limited amount and mostly in exceptional cases. In this sense, it is logical that the frequency of purchases is extremely low. In view of the concept of managing customer relationships, the profiles of these consumer segments are not attractive, as they do not generate the desired cash flow. In this case, companies should implement strategies to stimulate demand by offering products with a healthier profile (products with reduced calorie content, without sugar or with natural sweeteners, etc.). This is an opportunity to transform non-profitable „sophisticated" customers into profitable ones or reduce the percentages of clusters No. 4 and No. 5 on account of increasing No.1, No. 2 and No. 3.

Cluster No. 6 comprises consumers who cannot be attributed to the group of „sophisticated" consumers but not definitely differentiate themselves from this group. This cluster is of interest to the study only in terms of its size, which in this case has no worryingly high value (13%).

The final two clusters – No. 7 and No. 8 comprise customers who do not identify themselves as „sophisticated". They are differentiated into two groups: „non-sophisticated" customers, who often buy large amounts (cluster No. 7 – 10%) and „non-sophisticated" customers who buy rarely and are unwilling to spend a large amount on carbonated soft drinks (3%). Interesting for the study is cluster No. 7, because of the potentially high income of the consumers it comprises. The comparison of the percentage distribution of the 8 clusters shows that the ratio of „profitable/non-profitable" customers is in favor of „sophisticated" consumers – clusters No. 1, No. 2 and No. 3, which cover a little over 50% of all respondents. This means that the segment of „sophisticated" consumers has a higher income than the rest of the segments. Moreover, with appropriate strategies in the process of customer relationship management, the profitability of consumers from cluster No. 4 and 5, which comprise 22% of the market, can be increased by stimulating the frequency of their purchases and increasing the amount of money spent on each purchase.

5. Conclusions

On the grounds of the information provided by the empirical study, it can be concluded that in the market of carbonated soft drinks in Bulgaria the concept of consumer „sophistication" is realized. The implemented 3-step procedure for profiling of consumers in this market shows that there are segments, composed of a significant percentage of consumers, who identify themselves as „sophisticated". They are characterized by a strong ethical consciousness together with a high degree of ethical consumer behavior. However, the idea that these users meet certain socio-demographic characteristics, inherent in the „sophistication" according to the statements in the foreign scientific literature, were disproved.

It is interesting to note that the segment of „sophisticated" consumers bears the distinctive characteristics of a subculture that is gaining more and more popularity in society – the so-called „Hipsters." These are people who: are between 18 and 45 years old; belong to the so-called „middle class"; have a good education, good income, active citizen position, predominantly left political orientation. The theoretical overview of the subject shows that exactly these socio-demographic characteristics describe the profile of „sophisticated" customers, which gives reasons to attribute „hipsters" to this segment. This means that for companies, these consumers should have priority in managing customer relationships and market offers should be tailored to their demands.

An additional argument supporting the latter is the result of the last, third step of the implemented procedure of consumer profiling. It shows that „sophisticated" customers account for the more profitable part of the market for carbonated soft drinks which motivated companies to seek effective management of relationships with this particular segment. Moreover, the increasing popularity of the concept of „sustainable development" gives a reason with a high degree of certainty to claim that the applicability of the concept of consumer „sophistication" will also grow, or in other words, the segment of consumers identifying themselves as „sophisticated" and exhibit behavior corresponding to that profile will grow sustainably.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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LABOUR INTENSIVENESS OF ECONOMIC GROWTH IN BULGARIA: ESTIMATES, IMPACT OF THE GLOBAL CRISIS AND DRIVERS[2]

The study of the employment intensiveness of economic growth has become topical in the light of observed high inequalities in Bulgaria, as well as demographic challenges and tightening of the labour market in recent years. To study it, we estimate the elasticity of employment and total hours worked with respect to GDP. We find that economic growth has an impact on both indicators of the labour input with a lag of 3 quarters. However, the employment elasticity of GDP (0.81) is much higher than the elasticity of the hours worked with respect to GDP (0.29), which is attributed to certain inertia in the dynamics of the latter.

Our results furthermore suggest that the relationship between economic activity and labour weakens during economic crises. There even seems to be a disconnect between economic activity and employment after the global economic crisis. The latter conclusion is drawn based both on the insignificance of the parameters estimating labour elasticity after the crisis and on an analysis of the breakdown of the GDP per capita growth by productivity and employment growth, where the contribution of extensive employment growth to the increase of the GDP per capita significantly subsides after the global crisis.

Finally, estimating the employment elasticity of GDP, we find that it is highly unstable in time and depends on the structure of value added in Bulgaria, but also on labour supply, size of the informal economy and, more generally, on the phase of the business cycle. Taking into account the non-registered sector, in particular, we find that the responsiveness of employment to GDP becomes much higher, quicker and does not essentially change during economic downturns.

JEL: E24; E26; E27; J23; C22

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Introduction

The relationship between economic activity and job creation has been the focus of many empirical works, as it can have useful policy implications by providing insights on the structural composition of the economy and its capability to generate jobs. This issue has become even more topical in recent years given that major strategic documents, such as the Europe 2020 for example, target a certain level of employment.

Following the global crisis from 2008, there is evidence of changes in the relationship between growth and employment and even (temporary) decoupling of the two indicators.[3] During the crisis this was partly attributed to the measures undertaken for the protection of the workplaces across EU countries.[4] In the post-crisis years some studies[5] provide evidence that in Bulgaria, in particular, the decoupling of economic activity and employment is also due to slow economic growth with pronounced seasonal character.

More generally, however, relevant studies attribute the disconnect between economic growth and employment to the introduction of disruptive technologies, such as artificial intelligence, which explain the observed decoupling not only of growth and employment but also of productivity and wages. We find that the observed disconnect between the gross domestic product (GDP) and employment in economies with a relatively large share of the informal sector is also due to measurement errors, related to the non-reporting of the shadow activities and jobs.

Generally, jobless growth does not necessarily imply worsening of the macroeconomic situation and does not always have a negative impact on social indicators, such as inequality for example. It is often argued that weakening of the relation between economic growth and employment may be natural in economies that are overcoming the productivity gap.[6] Other factors, related to structural specifics of economic growth, labour market specifics and institutions and even macroeconomic variables, such as inflation have also been found to have impact on the GDP elasticity of employment. We touch upon the nature and possible channels of impact of these factors in the analytical section below.

Finally, it should be mentioned that there are arguments in favour of the estimation of employment intensiveness of growth, rather than Okun's law. They are based on some measurement problems of the unemployment rate (definition and estimation) and the possibility to estimate various breakdowns of the employment intensiveness, such as by economic sectors.

However, the measure of employment intensiveness of growth should also be treated with caution. As stated by Kapsos (2005), GDP elasticity of employment proves to be highly unstable in time and, moreover, data on employment in persons does not take into account the general trend for reducing the working time per employee. Finally, Kapsos also notes

[3] See, for example, ECB (2016).
[4] See, for reference, Beleva (2011).
[5] See, for reference, Beleva (2018)
[6] For example, in Hudcovský M., M. Lábaj and K. Morvay (2017).

that the employment intensiveness estimates the labour input only in terms of quantity and does not consider its quality, which might also lead to misleading interpretations.

Our literature review showed that the relationship between economic activity and unemployment, or Okun's law, and the employment intensiveness of GDP have been largely studied in economic literature. Prominent examples include Mourre (2004) for the Euro area and United States, Saget (2000) – for the transition economies in the Central and Eastern Europe, Perugini (2009) – at subnational level and Kapsos (2005), providing global estimates.

Mourre (2004) finds that employment intensiveness of economic growth has increased in the period between 1997 and 2001 in the Euro Area and attributes it partly to higher GDP growth and, partly, to the high deceleration in the labour cost hike. He also shows that the increase in the part-time employment, together with changes in the sectoral composition of the gross value added (GVA), improved labour market institutions and active labour market policies, have also contributed to the intensified relationship between employment and growth.

Saget (2000) estimates the employment elasticity of growth in transition economies, paying special attention to gender inequalities and also to the factors behind it. She finds that in the 1990s there was no relationship between GDP and employment in Bulgaria and Ukraine and attributed it to the presence of large informal sectors in these economies.

Perugini (2009) estimates employment elasticities of GDP disaggregated by the regions in Italy and the main economic sectors. His analysis supports the proposition of a job-rich growth after the mid-1990s.

Finally, Kapsos (2005) shows that the employment intensiveness of growth has decreased between 1999 and 2003 globally, although large differences are observed by regions. He also finds a positive relationship between labour force size and share of the services in GVA and employment elasticity. Meanwhile, the impact of high labour taxes and uncertainty, measured by inflation, on the labour intensiveness of growth is estimated to be negative.

There is rich literature on the employment intensiveness of growth, but few estimates are available for the Bulgarian economy in particular. The latter are mostly done more than 10 years ago and within a larger panel of countries (see, for example Saget (2000) and Kapsos (2005)). There is, however, a recent study by Tsanov (2018), which investigates the validity and stability of the Okun's law in Bulgaria. The paper shows that while the relationship between GDP and unemployment is statistically significant and negative, it is not stable in the period under consideration. This lack of persistence is attributed mainly to the economic cycle.

In terms of methodological approaches, the wide range of studies that focus explicitly on the employment intensiveness of growth employ varied computational and econometric approaches. They range from simple calculations of the changes in the two indicators, to error-correction models and structural models with unobserved components. We have considered three of the above-mentioned approaches:

- *Direct calculation of the employment elasticity* – this method is straightforward to apply but has two important drawbacks – computed in this way, the employment elasticities display large variability from year to year. Additionally, it does not provide a direct tool for estimating the lag, with which economic activity influences employment most.
- *Application of error-correction models (ECM)* – this approach is appealing as it allows us to distinguish between short-term and long-term employment elasticity of growth. However, in our case, GDP and employment were cointegrated only at the low significance level and, applying the ECM, we did not obtain statistically good estimates of the presumed relationships.
- *Application of an ordinary least squares regression* – while this method is less sophisticated than the previously discussed ECM, its application resulted in robust and statistically well fit estimates, which we present later in this paper.

In our work, we try to address the need to provide a more recent estimate of the employment intensiveness of economic growth in Bulgaria and also to study whether the relationship between GDP and employment differs from that between GDP and the total hours worked, i.e. whether there is evidence of decreasing work time. The impact of the economic crisis has also been investigated, as well as other factors underlying the employment intensiveness of GDP in Bulgaria, with a focus on informality.

This study is structured as follows: first, a brief overview of the historical trends in GDP, employment and total hours worked is presented. It is followed by some methodological notes, presentation and analysis of the estimation results, analysis of the drivers of the changes in the relationship between GDP and employment in Bulgaria and conclusions.

Historical trends in economic activity and labour demand

The Bulgarian economy has moved from a high-growth expansionary period in 2000-2008[7], resulting from macroeconomic stabilization and favourable implications of EU membership, to a more balanced, but lower growth pattern after the economic crisis of 2009-2013 (as it can be inferred from Figure 1). Given that there are indications that the structure of economic growth is changing, a natural question arises about the implications of this transformation for employment creation.

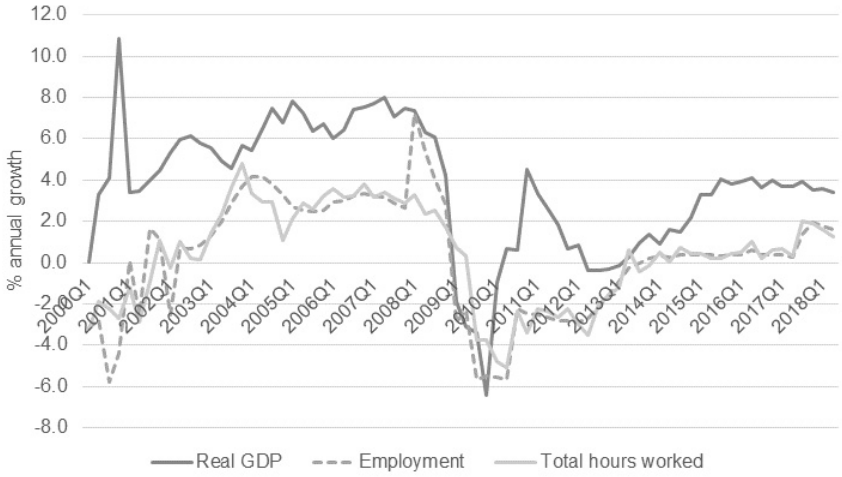
Comparing GDP and employment growth rates visually (Figure 2 and Figure 3), four distinctive periods can be discerned. The first one covers the years during and immediately after the financial and economic crisis of 1996 and 1997 that led to the introduction of the currency board in Bulgaria. It was characterized by a high variance in the relationship between GDP and employment. In the second period of economic expansion, coupled with positive expectations for EU membership and ongoing economic integration with the EU,

[7] For the period of the early transition, Beleva, Jackman and Nenova-Amar (1995) and Beleva and Tzanov (2001) provide an in-depth review and analysis of economic developments and policies on the labour market. Beleva et al. (2012) provide a thorough analysis of the labour market, incomes, social security and social assistance and education in the period 1990-2011.

there was high employment intensiveness of the GDP, where both GDP and employment growth rates were very much on the high side. A third period can be discerned when Bulgaria was hit by the global crisis after the second half of 2008. During this period, the relationship between employment and GDP again became volatile, although, not as much as during the previous crisis. Since 2014, GDP elasticity of employment seems to have become much more stable although somewhat lower as compared to the pre-crisis levels.

Figure 1

Annual non-seasonally adjusted growth of real GDP, employment and hours worked in 2000Q1-2018Q2

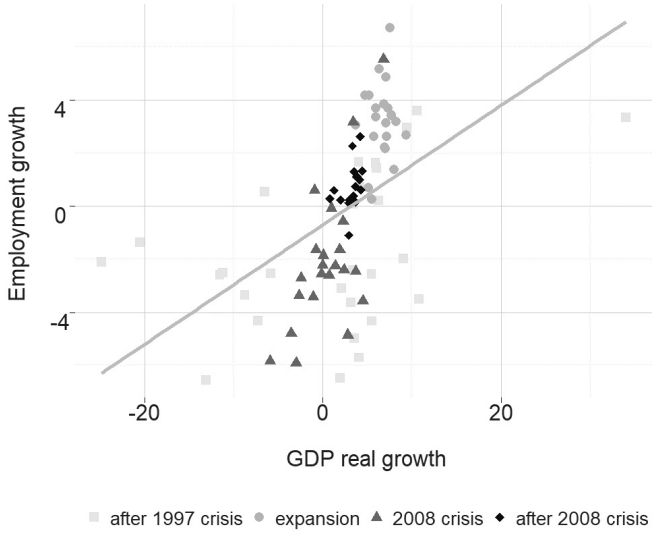


More generally, Figure 2 illustrates that Verdoorn law (1949)[8] did not apply to Bulgaria in the period under consideration. In the years of economic upturn, high economic growth came along with high job creation, thus limiting productivity gains. Meanwhile, after the global economic crisis, growth has been lower but to a higher extent productivity-driven. The latter observation provides indications of a decoupling of the economic growth and employment.

Following these visual observations, in the next sections we test the relationship between economic activity and employment, taking into account the four a priori identified periods. Dummy variables for the four identified periods would also provide numerical evidence on whether the Bulgarian economy is moving toward a less employment-intensive growth pattern, drawing on the reserves of the economy to boost productivity through innovations and on its slow but steady recalibration towards less labour-intensive economic activities.

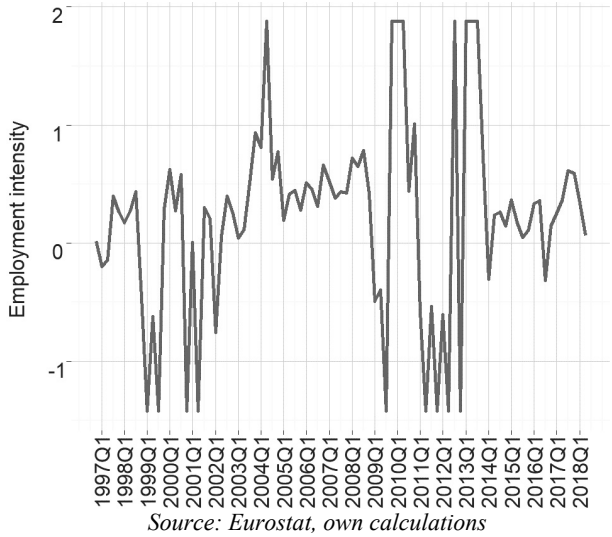
[8] Verdoorn law (1949) states that economic growth comes along with higher productivity, as it allows for higher labour division and specialisation.

Figure 2
Scatterplot of GDP and employment growth 1996Q4-2002Q4 (blue square), 2003Q1-2008Q2 (green circle), 2008Q3-2013Q4 (yellow triangle) and 2014Q1-2018Q2 (red diamond)



Source: Eurostat, own calculations

Figure 3
Calculated employment intensiveness of GDP (with 3 quarters lag, for which the correlation between employment and GDP is highest)



Source: Eurostat, own calculations

Methodology

In order to disentangle the relationship between GDP and employment and hours worked, we run a simple ordinary least square regression. The choice of this approach is justified in the introduction to this paper. We use non-seasonally adjusted quarterly data for the period 1995Q1 – 2018Q2. In particular, we take non-seasonally and calendar adjusted data for GDP in constant 2010 prices, employment in thousands of persons and total hours worked in number. All data is based on the national accounts, produced by the Bulgarian National Statistical Institute (NSI) and published on the Eurostat webpage.

We apply the following data transformations:

1. **Seasonal adjustment of the data**, using the 'seasonal' package under the software platform R. It presents an interface to X-13ARIMA-SEATS, which is a software for seasonal adjustment, developed at the United States Census Bureau.
2. **Testing and addressing of non-stationarity of the time series**. We applied the augmented Dickey-Fuller (1979) test. Its null hypothesis is for non-stationarity of the data series. Therefore, following the good practices in econometrics, we also cross-checked our findings with the KPSS (Kwiatkowski–Phillips–Schmidt–Shin (1992)) test, where the null hypothesis is for stationarity. Both tests confirmed the presence of a unit root in all used data series.

In order to smooth the data and remove the non-stationarity, we transformed the data in natural logarithms and then took first differences, proxying for growth rates of the respective variables.

Checking for non-stationarity again with the above-mentioned tests revealed the unit root of first differences as well. After a visual inspection of the analysed time series, the hypothesis of structural break in the time series was tested. We applied the test for stationarity with structural breaks, developed by Zivot и Andrews (1992). It showed that in all-time series we can reject the hypothesis of existence of a unit root, where the test also endogenously calculated probable periods of structural breaks. The results from the application of this test are presented in Table 1 below.

Table 1

Results from the application of the Zivot и Andrews (1992) test for stationarity with structural breaks

Time series	Test statistics	Critical level at significance level of 0.01	Potential structural breakpoint
GDP[9]	-10.0045	-5.34	2008Q3
Hours worked	-7.9764	-5.34	2008Q1
Employment	-8.0238	-5.34	2008Q3

[9] Excluding the period until 1998Q1 to avoid having a break in the time series due to the 1996-1997 economic and financial crisis.

Regression output

As already stated, the elasticity of the employment with respect to GDP is estimated by a linear regression using the least-squares method. All variables are taken in differences of natural logarithms to approximate percentage changes. In this way the obtained parameters can be directly interpreted as elasticities.

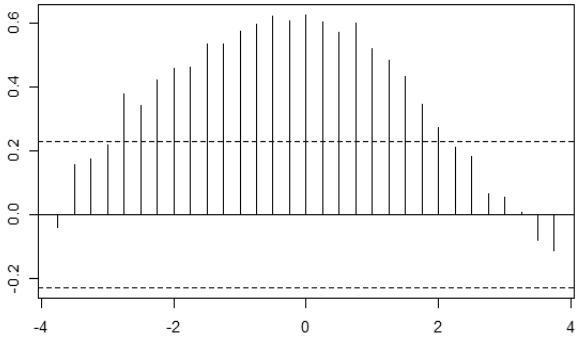
We tested for various lags of the GDP, ranging from simultaneous relationship to 8 lags (2 years). As it can be inferred from Figure 4, the correlation between GDP and employment was found to be strongest with a lag of 3 quarters.

We subsequently tested the specified regression models for serial correlation, heteroscedasticity and normality of the residuals and discovered both heteroscedasticity and non-normality of the residuals.

Concerning non-normality, we assumed that it is due to the presence of outliers. The latter is identified as the values that are outside the interval set by the interquartile range multiplied by 1.5[10]. The outliers were replaced by the corresponding values of the third (high values) or the first (for low values) quartiles, depending on whether the outliers were in the high or low end of the distribution of the values of the variables, included in the regressions.

Figure 4

Cross correlations between employment and lags of GDP (the numbers on the x-axis correspond to years)



Using the time series, cleared from outliers, we re-estimated the relationship between GDP and employment, treating the problem of heteroscedasticity by estimating heteroscedasticity corrected covariance matrices. They did not change the statistical implications of the model and the resulting model looks well fitted – the parameter values remained the same and statistically significant.

[10] For reference, see Tukey (1977).

Table 2

Summary of regression results for the estimation of the employment elasticity of economic growth

Variables	Estimate	Standard error	t-statistic	p-value	
Intercept	-0.005826	0.001178	-4.947	3.77e-06	***
GDP(-3)	0.811703	0.108790	7.461	6.79e-11	***
Dummy for 1996-1997 crisis*GDP(-3)	-0.511398	0.121540	-4.208	6.37e-05	***
Dummy for 2008 crisis *GDP(-3)	-0.637878	0.182494	-3.495	0.000755	***
Postcrisis dummy *GDP(-3)	0.124046	0.205997	0.602	0.548660	
Adjusted R^2:	0.3862	p-value of **F-statistic**:		2.579e-09	
p-value of the Durbin-Watson test for serial correlation *(H0: No serial correlation)*	0.1998	p-value of the Jarque-Bera test for normality of the residuals *(H0: normality of the residuals)*		0.7094	
p-value of the Breusch-Pagan test for heteroscedasticity *(H0: Homoscedasticity)*	0.09625	p-value of the Breusch-Godfrey test for serial correlation of order up to 1 *(H0: No serial correlation)*		0.7145	
Heteroscedasticity corrected covariance matrices					
Variables	Estimate	Standard error	t-statistic	p-value	
Intercept	-0.005826	0.0013239	-4.4003	3.120e-05	***
GDP(-3)	0.811703	0.0906584	8.9534	6.710e-14	***
Dummy for 1996-1997 crisis*GDP(-3)	-0.511398	0.1193893	-4.2835	4.821e-05	***
Dummy for 2008 crisis *GDP(-3)	-0.637878	0.2527445	-2.5238	0.01347	*
Postcrisis dummy *GDP(-3)	0.124046	0.1740851	0.7126	0.47807	

*Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1* **Error! Reference source not found.**

Table 2 presents a visual overview of the fit of the estimated regression and also confirms that it is broadly appropriate. The figure plotting the fitted values against the residuals does not show any specific patterns, so there is no evidence of non-linear relationships. In addition, the residuals seem to be normally distributed, according to the Normal Q-Q plot. The Scale-Location plot however provides indications of the existence of heteroscedasticity, which justifies the presence of heteroscedasticity corrected covariances in the table above. Cook's distance plot shows that there are no specifically influential observations.

The results from the estimation of the GDP elasticity of the hours worked are presented in the table below. Again, we corrected the time series for outliers. We also introduced dependent variable one- and two-period lag terms, as the regression diagnostics indicated the presence of serial correlation of the residuals.

Figure 5

Employment elasticity regression diagnostics plots

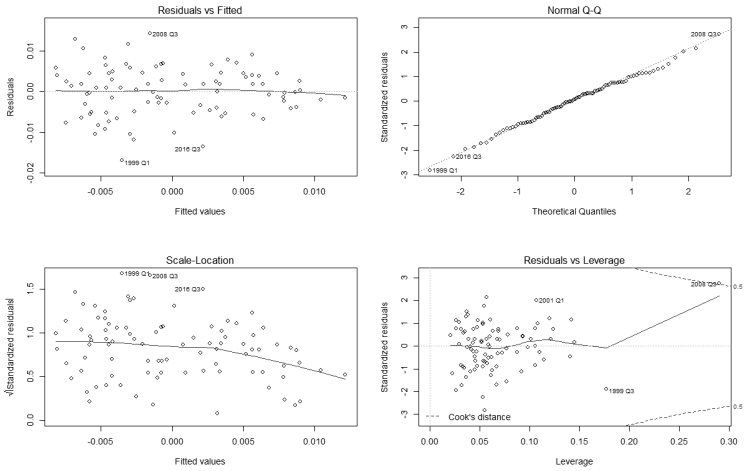


Table 3

Summary of regression results for the estimation of the elasticity of the hours worked with respect to economic growth

Variables	Estimate	Standard error	t-statistic	p-value	
Intercept	- 0.0021773	0.0009572	-2.275	0.025503	*
GDP(-3)	0.2907613	0.1022769	2.843	0.005626	**
Dummy for 1996-1997 crisis*GDP(-3)	-0.1815431	0.0989297	-1.835	0.070077	.
Dummy for 2008 crisis *GDP(-3)	-0.5946773	0.1365519	-4.355	3.78e-05	***
Postcrisis dummy *GDP(-3)	0.0783189	0.1370701	0.571	0.569287	
Hours worked (-1)	0.2720168	0.0990689	2.746	0.007401	**
Hours worked (-2)	0.3567967	0.0960751	3.714	0.000369	***

Adjusted R^2:	0.6946	p-value of **F-statistic**:	2.2e-16
p-value of the Durbin-Watson test for serial correlation *(H0: No serial correlation)*	n.a.	p-value of the Jarque-Bera test for normality of the residuals *(H0: normality of the residuals)*	0.7027
p-value of the Breusch-Pagan test for heteroscedasticity *(H0: Homoscedasticity)*	0.2301	p-value of the Breusch-Godfrey test for serial correlation of order up to 1 *(H0: No serial correlation)*	0.3343

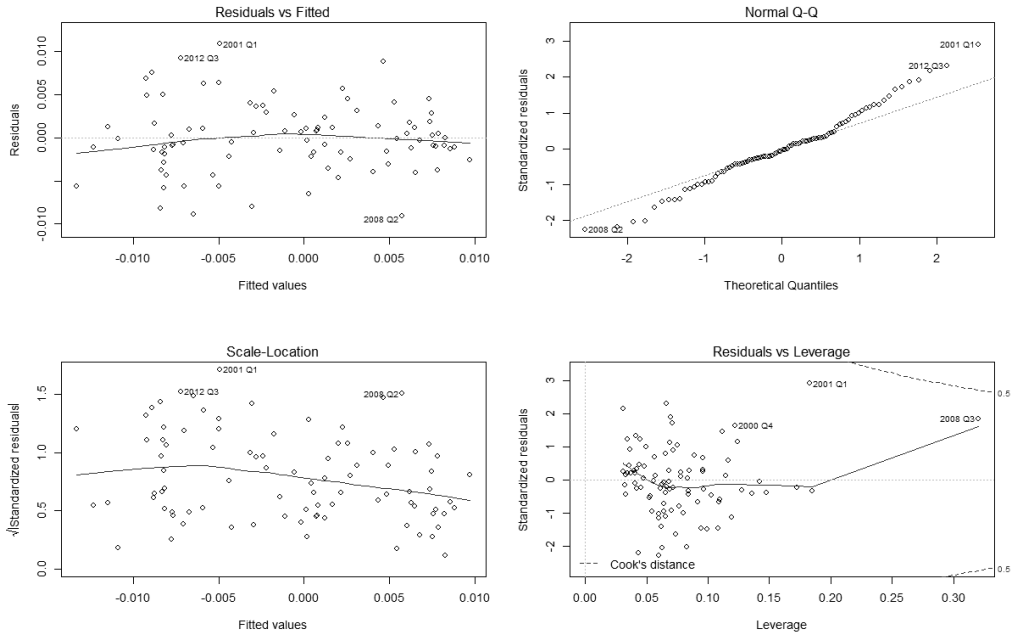
*Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1*

As in the case with the employment elasticity of GDP, Figure 6 also gives a visual illustration of the fit of the estimated regression. The results might be considered as good. Similar to the previous regression, they do not indicate any non-linearities in the studied relationships. Additionally, the residuals seem normally distributed. The Scale-Location

plot generally confirms the hypothesis of homoscedasticity, despite a small kink in the line. Cook's distance plot again shows that there are no extremely influential observations.

Figure 6

Elasticity of the hours worked of GDP – regression diagnostics plots



Analysis of results

The estimated employment elasticity of GDP implies that one percentage increase in GDP generated 0.81 rise in employment with a 9-month lag in the economic upturn. During the two economic crises of 1996-1997 and 2008-2013, the relationship weakened to 0.30 and 0.17. In the period after the last crisis, GDP and employment seem disconnected, as the estimated parameter is not statistically significant.

The elasticities that we have obtained are higher, but broadly in line with comparable studies. The analysis of ECB (2016) on the employment-GDP relationship since the crisis estimates an average pre-crisis elasticity of 0.58 in the Euro Area. This value is lower than our estimate for Bulgaria and might due to differences in the economic structure or labour market flexibility. Similar to our results, the authors of this study also find a negative impact of the crisis on the studied relationship and lack of coherence in the dynamics of the GDP and employment in the post-crisis period.

The values of 0.30 and 0.17 obtained for the periods between 1996Q4-2002Q4 and 2008Q3-2013Q4 relate more closely with the results of the estimates of Kapsos (2005). He

estimates a GDP elasticity of employment of 0.50 in Bulgaria in the period 1999-2003. Taking into account that 2003 is not included in our sample for this period, the outcomes of the two estimations might be considered as consistent.

Employment threshold

The first regression of employment on GDP allows us to calculate the so-called **employment threshold**, or the GDP growth that corresponds to constant employment.

The model specification that we have adopted is the following:

$$\Delta Employment_t$$

$$\alpha_0 + \alpha_1.\Delta GDP_{t-3} + \alpha_2.Dummy1997_t.\Delta GDP_{t-3} + \alpha_3.DummyCrisis_t.\Delta GDP_{t-3} + \alpha_4.DummyPostcrisis_t.\Delta GDP_{t-3}$$

,

In this case the employment threshold can be calculated as:

$$Employment\ threshold_t = \frac{-\alpha_0}{\alpha_1 + \alpha_2.Dummy1997_t + \alpha_3.DummyCrisis_t + \alpha_4.DummyPostcrisis_t}$$

Applying the above formula, we obtain the following employment thresholds:

Table 4

Estimated employment thresholds in Bulgaria

Period	1995Q2-2002Q4	2003Q1-2008Q2	2008Q3-2013Q4	2014Q1-2018Q2
Employment threshold	1.94	0.72	3.35	0.62

Based on the above table, it can be seen that in times of economic distress, much higher growth rate of GDP was required to induce employment growth. That is justified by the so-called labour hoarding. The latter refers to the fact that in economically unfavourable times companies do not cut on labour proportionally to their output decline, but rather tend to keep jobs in order to avoid adjustment costs, which would be related to laying off workers and then employing again when the economic situation starts to improve again. That is why in times of economic slowdown the growth rates needed to resume employment growth are much higher. Based on the employment threshold estimates, it looks that employers are more willing to employ currently, but these results should be treated with caution as the parameter before the last regressor $DummyPostcrisis_t.\Delta GDP_{t-3}$ is not statistically significant.

Elasticity of total hours worked with respect to growth

Turning to the results from the estimation of the elasticity of the hours worked with respect to GDP, we find again that there is no longer statistically significant relationship after the economic crisis that started in 2008.

However, the elasticity of total hours worked of GDP is much lower than that of employment and amounts to 0.29 in times of expansion. This result is contrary to the economic logic, as we would expect a priori that employers would adjust to fluctuations in economic activity by changing the hours worked rather than the number of employed persons. In our view, the difference is due to the inclusion of the two lags of the total hours worked in the regression. It was done in order to account for the serial correlation of the residuals but leads to the decrease of the elasticity of the total hours worked to GDP from 0.80 to 0.29.

Based on this, we can conclude that the responsiveness of the total hours worked to the fluctuations in the GDP is lower than the one of the employment, measured in thousand of employed persons, as the hours worked display much higher dependency on their past values.

Rolling estimation of the employment elasticity

To test the statement that employment elasticity of GDP and Okun's law is rather volatile over time[11], we have constructed a series of rolling regressions. We have chosen ex-ante a window of 24 quarters. The reason for this choice is that each period in the development of the Bulgarian economy after 1995 seems to last approximately 6 years: from 1995 to 2000 crisis and stabilization with the introduction of the currency board, 2001 – 2007 were boom years, 2008 – 2014 were years of economic crisis and recovery and during the period after 2014 Bulgarian economy has experienced moderate but stable economic growth.

The adjusted R^2 of the rolling regressions varies between 0 and 0.6 and is higher in the period before the 2008 crisis with the exception of the initial years prior to the introduction of the currency board arrangement in mid-1997. Respectively the p-value associated with the estimated employment elasticity of GDP is generally significant at 1% with the exception of the rolling regressions covering both expansion years and financial crisis, where probably the poor fit could be attributed to a structural break.

[11] See, for example Perugini (2009) for employment intensity of growth in Italy, Kapsos (2005) for international comparisons and Tsanov (2018) for the Okun's law in Bulgaria. They all find high variability of the estimated coefficients, based on the sample time period selected.

Figure 7

Estimated employment elasticity of GDP on a rolling basis

The estimated employment elasticity of GDP with the rolling regressions is presented in Figure 7. For the entire period, the employment elasticity of GDP averages 0.68, which is higher but comparable to the observed coefficient for the regressions starting after 2010Q1 (0.58), where the estimated parameters are also highly statistically significant.

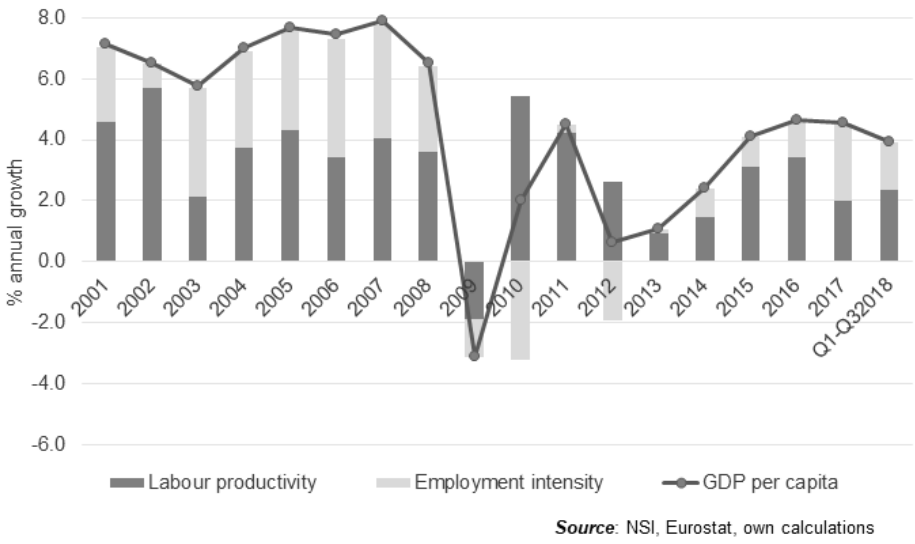
Breakdown of economic growth by labour productivity and extensive labour

In order to provide additional insights to the estimated employment elasticity of GDP and the results of the rolling regression, Figure 8 below presents a breakdown of the GDP per capita growth into labour productivity (GDP/employment) and extensive labour (employment/population) growth. It clearly illustrates the fact that before the 2008 global economic crisis economic growth in Bulgaria was more or less equally due to both labour productivity growth and increase of the employment and participation rates, i.e. increase in the quantity of the labour employed.

In the post-crisis period a clear tendency of a much higher contribution of labour productivity to economic growth is visually discernible. In the second half of 2017 there were signs that the employment intensiveness of the economic growth might recover, but these indications were not supported by the data for Q1-Q3 2018.

Figure 8

Breakdown of GDP per capita growth



Source: NSI, Eurostat, own calculations

Determinants of the employment intensiveness of growth

Informality

The shadow economy, its size and manifestations, is a natural starting point when investigating the factors that influence the employment elasticity of GDP, as it reflects also the extent to which the economic activity and employment are correctly measured.

The informal sector is commonly regarded as a buffer which facilitates the flexible adjustment of employment to changes in labour demand. Therefore, one could expect a threefold impact of a large informal sector of the employment elasticity of GDP:

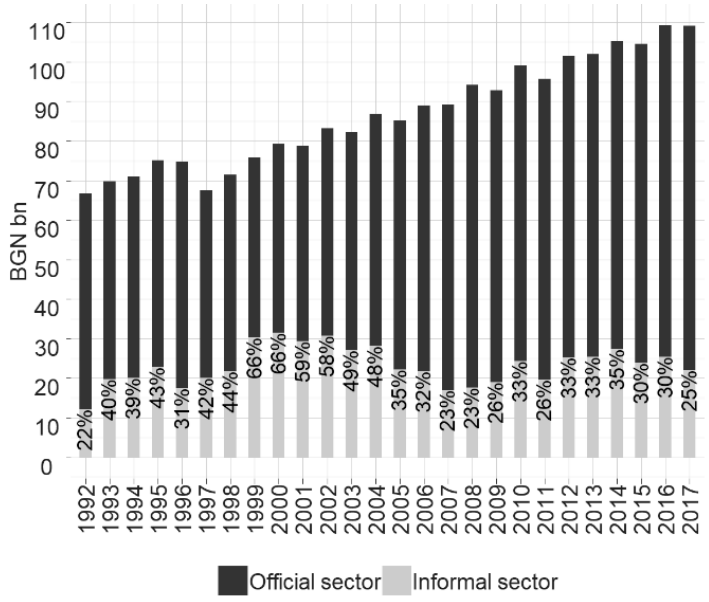
1. Higher shadow sector share increases the reactiveness of the formal employment to the official GDP, which means that the relationship between informality and the employment elasticity of GDP will be positive.
2. More spread informality in the economy would also imply that the relationship between GDP and employment would be less statistically significant, as neither of the indicators will take into account the development of the shadow sector.
3. The informal activities are concentrated in certain, typically labour-intensive economic sectors, implying a different relationship between output and employment at the sectoral level.

To estimate the size of the shadow sector in Bulgaria we apply Eilat and Zinnes (2002) approach. In particular, we regress the changes of final energy consumption against energy prices with one-year lag and the share of the industry (excluding construction) in the gross value added. All the changes in the energy consumption that are not due to either changes in energy prices, changes in the volume or structure of the GDP, are attributed to changes in the shadow economy. For reference value we take the estimate of the informal sector of 30.2% in 2016 in Bulgaria, provided by Schneider (2016).

Following this approach, we estimate that informal activities increased significantly during the economic and financial crisis of 1996-1997, reaching a peak in 2000, and subsequently gradually declined to below 20% in 2008. The 2008 global economic crisis has however again pushed the shadow activities on the rise, though they have lately subsided to an estimated level of 25.4% of the official GDP.

Figure 8

Informal economy size and share in official output



Taking into account that the informal activities tend to be mainly related to temporary employment[12], we can derive an estimate of shadow employment as well. In particular, we calculate it, based on the estimations of the shadow economy, taking into account the share of the compensation of employees by economic sectors and under the following assumptions:

[12] See for example Kyle et al. (2001), who establish such a finding, based on survey data.

- The informal activities are concentrated in the sectors with temporary employment. Under this assumption, the distribution of the shadow economy in Bulgaria in 2017 was[13]:

Agriculture	Manufacturing	Construction	Trade	Tourism	Other services
30%	10%	22%	10%	17%	11%

- The share of the compensation of employees in the gross value added is the same in the formal and unofficial sectors after correction for the employers' social contributions. This means that the production technology is the same, while the shadow sector employers gain additionally from unpaid social contributions.
- The net labour remuneration in the formal and informal sectors is the same. Otherwise, there would be shifts of labour between the sectors until the price of the labour is equalized.

Figure 9 depicts the share of informal output and employment in the officially reported GDP and jobs. It shows that shadow employment has been more volatile than the economic activities, where it was used. This is due to the fact that the economic sectors where informality is highest are predominantly labour intensive. Additionally, we note that there is some visual decoupling of the two indicators during the economic crises in the late 1990s and the one from 2009.

Based on this additionally obtained data on informal output and employment, we test the relationship between GDP and employment again in regression analysis. This time we find that, if we account for informality, employment becomes extremely responsive to changes in the economic activity, where the employment elasticity of economic growth stands at 1.37 and is highly significant. Contrary to our previous results, in this specification, we find that there is no lag in the response of employment to GDP and that the impacts of the previously identified subperiods are not statistically verified. Both conclusions correspond to our preliminary expectations that shadow employment is much more flexible and helps for the fast adjustment to economic activity and that in crises the previously observed decoupling between economic activity and employment are in fact due to informal job creation.

The results of the regression where the estimated informal activity and employment have been taken into account are presented in Table 5. The statistical properties of this model are much better as compared to the one, where informality is not accounted for (Table 2). However, it should be noted that, in order to tackle the problem of non-normality of the

[13] In our calculations, we assumed that although there is some temporary employment in the public services sectors, there are no informally hired people in these sectors, as they are much more strictly regulated.

residuals, we have excluded certain observations form this regression[14], which is acceptable in this case as the relationship is simultaneous and there is no autocorrelation.

Figure 9

Informal activity and employment shares in the respective official indicators

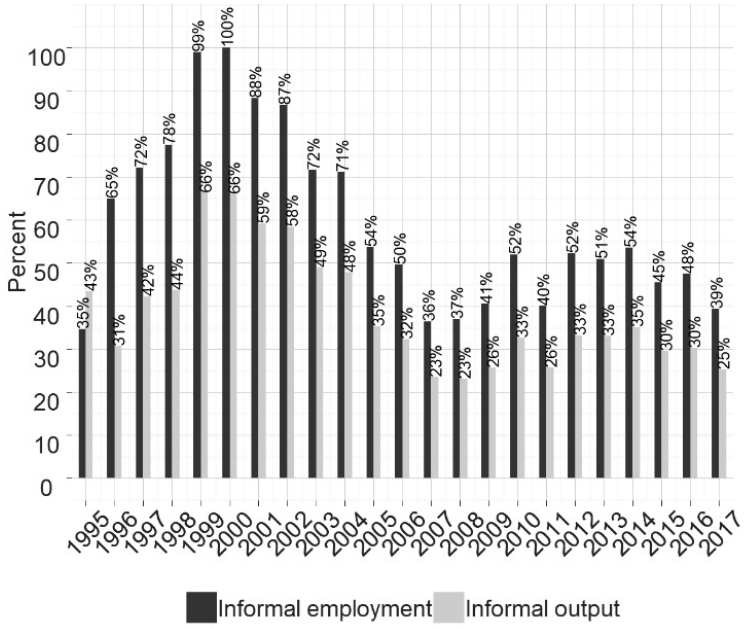


Table 5

Summary of regression results for the estimation of the employment elasticity of economic growth, taking into account informality in both economic activities and employment

Variables	Estimate	Standard error	t-statistic	p-value	
Intercept	-0.011928	0.001193	-9.996456	9.04e-15	***
GDP	1.371475	0.100701	13.619272	< 2e-16	***

Adjusted R^2:	0.7365	p-value of **F-statistic**:	< 2.2e-16
p-value of the Durbin-Watson test for serial correlation *(H0: No serial correlation)*	0.305	p-value of the Jarque-Bera test for normality of the residuals *(H0: normality of the residuals)*	0.5443
p-value of the Breusch-Pagan test for heteroscedasticity *(H0: Homoscedasticity)*	0.9561	p-value of the Breusch-Godfrey test for serial correlation of order up to 1 *(H0: No serial correlation)*	0.6802

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

[14] We tested for multivariate outliers, applying Wilks (1963) approach in R. We identified multivariate outliers in the following quarters: 2009Q1, 2009Q2, 2009Q4 and 2010Q4.

Other determinants of the employment intensiveness of growth

Looking into the other drivers of the variability in the employment elasticity of GDP, we found rich literature linking lower use of labour in the value added to technological progress, but also structure of output by economic activities, labour supply and other various institutional and macroeconomic factors[15]. With respect to the former, we tried to account for the technological progress by adding a trend variable in the regression estimating the employment elasticity of GDP, but it did not prove to be statistically significant.

As data on the employment elasticity of GDP is available only for periods of 6 years (based on the rolling regressions, discussed above), the theoretical drivers of the employment elasticity of GDP are hardly subject to econometric estimation. Instead, we simply compare visually the obtained elasticities with indicator averages covering the same time period and compute some correlations between the obtained time series.

From visual inspection, we note that the employment intensiveness of economic growth follows quite closely the share of labour-intensive industries[16] in the gross value added (Figure 10). The increase in their share until the early 2000s is due to higher value added in public administration, construction and information and communication technologies (ICT). Meanwhile, output in professional, scientific, technical and support activities declined considerably. During the first years of the new millennium, the output generated in the public sector declined, while that of construction stabilized, so that ICT becomes the only driver of growth of the labor-intensive industries.

The second noticeable hump in the share of the labour-intensive sectors corresponds to the cyclical movements in the construction. They are supported also by the acceleration in the value-added produced in ICT and professional and scientific activities. However, the increase is moderated to some extent by the slight but steady decline in the output generated in public administration, education, health and defence.

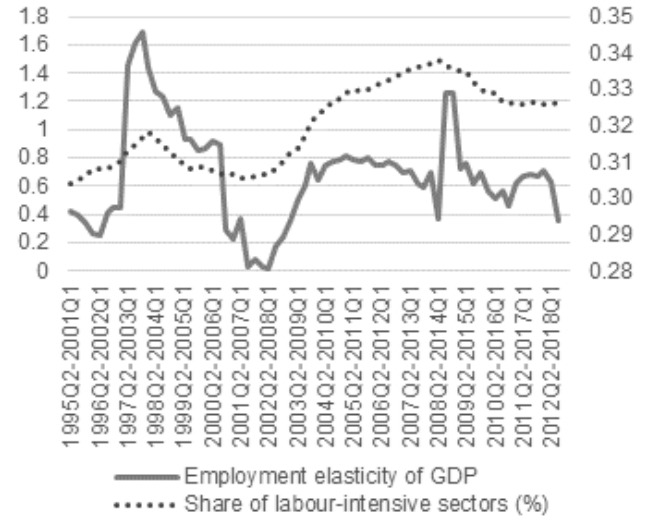
The supply of labour, measured by the size of the labour force (Figure 11), also exercises a significant impact on the labour intensiveness of economic activity. Labour force expanded until 2008, supported by high demand for labour and hiking wages. However, as a result of the economic crisis, the business sector implemented measures to optimize its operational efficiency and employment subsequently declined, which together with negative demographic developments took its toll on labour market participation as well.

[15] See, for example, Perugini (2009).

[16] The labour intensive sectors were identified by calculation of the share of the compensation of employees in the gross value added. They include Construction, Information and communication, Professional, scientific and technical activities; administrative and support service activities, Public administration, defense, education, human health and social work activities and Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies. Manufacturing is regarded as an aggregated sector, so that overall it is not considered to be labour intensive.

Figure 10

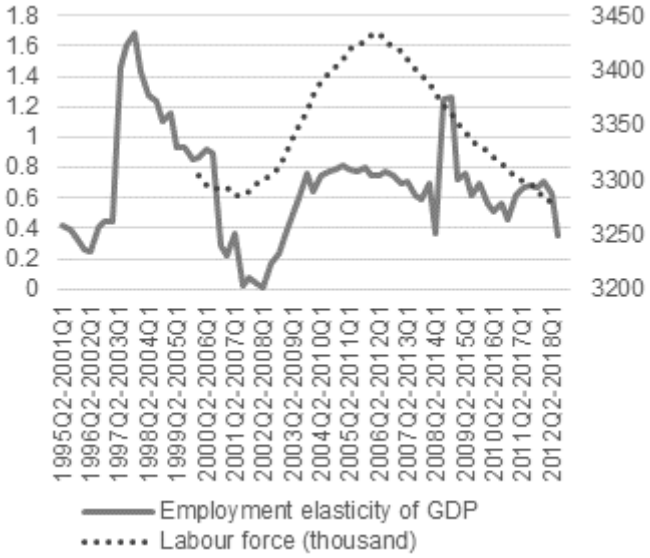
Labour elasticity of GDP and share of labour-intensive sectors in the value added



Source: Eurostat, own calculations

Figure 11

Labour elasticity of GDP and labour force



Source: Eurostat, own calculations

Labour costs, macroeconomic uncertainty and tradability of the goods and services produced are also generally estimated to have impact on the employment elasticity with

respect to GDP. However, these relationships are somewhat distorted in the case of Bulgaria. Below are some possible explanations.

With respect to labour costs (Figure 12), most studies[17] find a negative relationship with the employment elasticity of growth. This is justifiable given that when the labour becomes more expensive employers tend to look for ways to limit its contribution to output either by investing in new technologies or performing other optimizations. However, the share of labour in the GVA in Bulgaria has been low and still remains below EU average. Therefore, the observed positive relationship between employment elasticity of GDP and labour costs can be explained by taking into account that the observed increase in the labour costs in Bulgaria has been a result of the income convergence of Bulgaria with its EU partners and must have been compensated for by a decrease of the profit margins.

Figure 12

Labour elasticity of GDP and labour costs

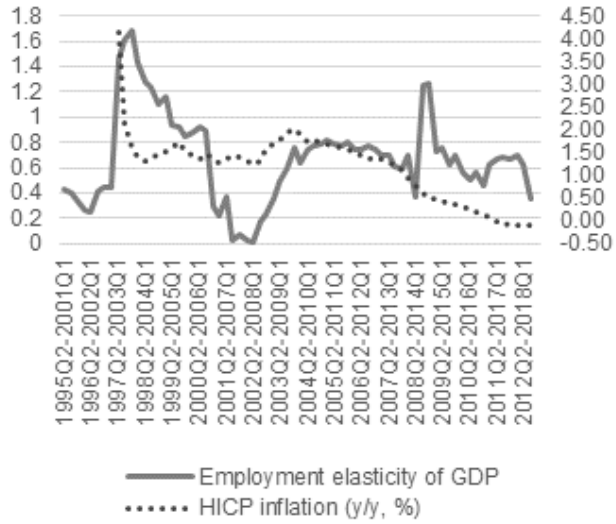
Source: Eurostat, own calculations

Inflation (Figure 13) is typically used as a measure of macroeconomic stability and is supposed to have a negative impact on the employment intensiveness of GDP. We can expect that as inflation (and therefore economy uncertainty) subsides, the employment intensiveness of GDP will be generally higher. However, empirically, we see that the relationship is actually positive. Maybe this is due to the fact that inflation has been low in the periods considered (below 4% on average even after the introduction of the Currency Board) and its dynamics was more or less determined by the phase of the business cycle and was not indicative of a lack of stability.

[17] See Dopke (2001) or Kapsos (2005), for instance.

Figure 13

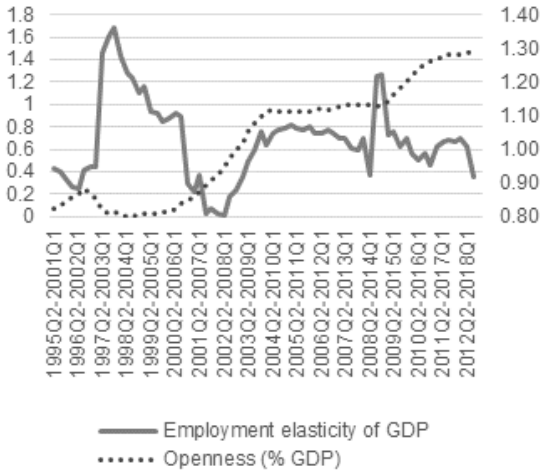
Labour elasticity of GDP and inflation



Source: NSI, Eurostat, own calculations

Figure 14

Labour elasticity of GDP and openness



Source: Eurostat, own calculations

Some authors [18] also claim that the employment elasticity varies depending on the tradability of the respective economic sector. We have tried to test this statement by

[18] See, for example, Dopke (2001) and Ait Ali, Ghazi and Msadfa (2017).

proxying tradability by the openness of the economy, calculated as the share of exports and imports in GDP (Figure 14). However, this variable also did not produce any significant link with the estimated employment intensiveness of growth. We think that this is also due to the significant reserves for internal restructuring of the output between labour costs and profit, while sustaining the competitiveness of the respective businesses.

Conclusion

In summary, we obtain an employment elasticity of GDP of 0.81 with a nine-month lag, which is somewhat higher but still comparable to other estimates of the GDP-employment relationship. Moreover, it is estimated to have been significantly lower during the two major crises experienced by the Bulgarian economy after the start of the transition – the 1996-1997 economic and financial crisis that lead to the introduction of the currency board and the downturn experienced after 2009 as a result of the global economic crisis. After 2014, the dynamics in the economic activity does not seem to be closely reflected in associated changes in the job creation.

The obtained regression model also allowed us to calculate the employment threshold in each of the four identified periods. We found that the GDP growth needed to start employing is around 0.60-0.75 percent, but it was expectedly much higher in the times of economic downturn.

An interesting observation can also be made, based on the results of the estimation of the elasticity of the total hours worked with respect to GDP. Contrary to our prior expectations, we discovered some inertia in the change in the hours worked, which is dependent on its past values and to a lesser extent is driven by fluctuations in the economic activity.

Testing the variability of the employment elasticity in time and the contribution of productivity and extensive employment growth to the increase in the GDP per capita, we confirmed the instability of this parameter in time and found that after the global economic crisis economic growth has been lower and attributed predominantly to labour productivity increases.

To explain the above observations, we briefly study the factors behind the dynamics in the employment elasticity of GDP. Informality stands out as a major cause for the change in the output-employment relationship during economic downturns. Our estimates show that if we take into account the non-registered sector, total employment adjusts to changes in total GDP much quicker and economic crises do not essentially change the relationship between the two indicators.

Without performing any rigorous analysis beyond correlation analysis, we also note that the sectoral composition of economic growth and labour supply tend to co-move with the employment elasticity of GDP. Meanwhile, we find that the sign and significance of the relationship with the labour costs, inflation and openness of the economy are distorted by the specifics of the development of the Bulgarian economy.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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COMBATING FINANCIAL STATEMENT FRAUD – AN ANALYSIS AND MODEL FOR THE REPUBLIC OF BULGARIA

This paper presents a research performed on financial statement fraud in the Republic of Bulgaria. The results of the questionnaire used to collect information have helped prepare a model applicable to the country. The model considers the role of different stakeholders in the organization, namely management, internal audit, board/directors and external audit and parties in the outside environment in the face of government and supporting institutions. Moreover, the main issues that have been identified in regard to each party have been summarized and linked with potential solutions that can be implemented in practice. Namely: more independence of board members and audit function in organizations, limited non-audit services by external auditors, increasing the consequences from such fraud and leveraging the benefits of professional organizations.
JEL: G00, G30

Introduction

Financial statement fraud is a global phenomenon with negative consequences for organizations and society. Such type of fraud perpetrated by a high level of management. The official definition by the American Association of the Certified Fraud Examiners is „the intentional, misstatement (or omission) of material facts or another type of data which when considered with other publicly available information would make the user of the information change or alter his/her's judgment. (ACFE, 2018) It is one of the three branches of occupational frauds used by the ACFE together with corruption and asset misappropriation.

The National Commission on Fraudulent Financial reporting (1987) states that fraud in the financial statements is reckless conduct by act or omission that is likely to result in materially misleading financials. Other definitions vary but the common thread is that it involves a deliberate misleading or omitting of information in the financial statement in order to misinform misdirect and „injure" the users of this information (investors, creditors, auditors and other stakeholders). Gravitt (2006) presents several schemes that are involved in financial statement fraud: 1) manipulation or falsification of the financial information and any supporting documents; intentional misuse of procedures, policies and relevant

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accounting principles used in the preparation of the financials and deliberate omissions or alteration of events and transactions that have relation to the reporting of the financial position of the company. Razaee (2002) expands on the schemes of financial statement fraud by including: the use of aggressive accounting techniques via illegal earning management and using loopholes in the accounting standards that allows the entities to conceal the real situation of the entity.

Financial statement fraud has been defined as financial crime. According to the Financial Services and Market act of 2000 passed in the United Kingdom it includes three aspects: 1) a fraud or dishonest action, 2) that includes misconduct or misuse of information that related to the financial markets, or 3) handling the proceeds of such crime. The UK fraud act of 2006 further reinforces the notion and definition of such crime acknowledging that such fraud incorporates 1) false numbers and/or representation; 2) inaccurate information that might lead to failure to disclose the correct information and 3) involvement on the side of the organizations' management or directors.

Studies from around the world have focused on analyzing the issue of financial statement fraud from different angles – examination and clustering of a variety of red flags (Murcia and Borba, 2007), investigating the factors affecting financial statement fraud in the light of the fraud triangle (Hogan et al., 2008) etc. This research uses a questionnaire to gather data based on which conclusions are reached for the context of interest.

Research Approach

Research approaches are generally divided into two main streams – deductive and inductive. Deductive begins with a theory which is then posed to a test in the light of the empirical findings whereas the inductive sets out with the observation of reality and then develops a theory based on the findings. However, no approach is better than the other. Vidal (2013) questions the practicality of using one approach over the other by suggesting that the division made is highly extreme and stylized. This is due to the fact that in real practice, researchers find themselves moving forth between both the approaches especially in the light of qualitative research where data collection and analysis are intertwined together. This research agrees with this proposition and follows Vidal's viewpoint thus allows for theory and research questions to improve and adjust as more analysis is done and data collected in the course of the research.

Research design

Qualitative research is the best method given the exploratory nature of the research (Ghauri and Gronhaug, 2005). It provides for a detailed presentation of the current conditions, opinions and processes within the field of interest. Methods associated with qualitative research allow for thorough detailed descriptions of the research topics since they are flexible and do not have to follow a predetermined path allowing for exploration of various aspects of the research topic Although some critics argue that qualitative research is less rigorous than quantitative-based one (Bernard, 2000) and applied statistical methods are

very useful for systematization, presentation and analysis of such data (Pavlova, 2016), qualitative methods used by in this study have allowed the researcher extract deeper meaning and understanding and contextualize the results in the light of the objectives. This is of crucial importance since the research encompasses factors that are impossible to quantify but rather require a qualitative analysis.

Data Collection Method

When undertaking research, data can be grouped into either primary or secondary depending on whether it comes from the original source or is collected and represented by someone else. The current research relies on primary data collected via questionnaires, since it is in many cases one of the best data collection methods when a response is required from a large number of individuals, together with a predetermined theme for exploration. The aim of questionnaires is to gain a general understanding of the chosen topic which is obtained only by using qualitative data. A semi-structured questionnaire is chosen as the optimal research strategy given the fact that it is particularly suited to the questions posed that require an understanding of processes relating to the phenomena studied together with analysis of the context in which the issues under question exist (Cassel and Symon, 2004). Moreover, the questionnaire allows for collecting data from a large number of individuals, where it is impractical to collect it using other more resource-intensive methods. Moreover, respondents can fill in the questionnaire in their own leisure which takes off the pressure element. Semi-structured questionnaires allow for insight into explanations for what is the participants' opinion, attitudes and perceptions in regard to the problems on hand.

According to Yin (2002) one of the main criticisms regarding qualitative methods of data collection is the difficulty of generalizing the empirical findings. This fact further reinforces the chosen method for study which allows for information collection that is comparable allowing for a better standardization of the findings. Although it is difficult to conduct a qualitative study of this kind due to the high rate of participation required, the benefits of doing so outweigh the drawbacks (Merriam, 1998). Moreover, such a holistic approach can enrich the user's experience and knowledge. Another limitation of qualitative research methods posed by Schaffier and Stebbins (1991) is that the personal bias of the researcher could steer the course of the data gathering process. However, this is eliminated in the current study since there is no face to face contact or interaction between the researcher and the respondents when the data is collected. Based on this discussion the author believes that the semi-structured questionnaire is the best way to tackle the research objectives of this paper.

Respondent Selection

The selection of respondents is based on a fundamental element of the purpose of this research – analysis of the financial statement fraud in Bulgaria. All respondents were approached by the researcher via email, phone, in person or using networking from professional bodies such as universities and organizations like the Institute of Internal

Auditors Bulgaria and the Association of Certified Fraud Examiners Bulgaria. Respondents come from both public and private intuitions including audit firms, banks consulting firms, governmental bodies and universities. Adequate comparability between the respondents is ensured. All of them have extensive experience in the financial statement fraud area and have dealt with a variety of cases concerning such fraud. Respondents were motivated by reminding them of the importance of the research theme and the benefits it could provide in their work to shed light on financial statement fraud in Bulgaria. Out of the 80 questionnaires distributed 50 responses were collected.

Questionnaire

According to Lincoln and Guba (1989) it is important the participants are able to understand the concepts and topics of the research investigation. Therefore, the questionnaire was sent to individuals having the needed knowledge and experience and able to shed light on the research themes. It was designed using Google forms and distributed in electronic format via a link which takes the user to the online form. The questionnaire's questions are written in English however an option was given to the respondents to fill in the open-ended questions in Bulgarian for convenience. Furthermore, following the recommendations of Bryman and Bell (2003) it was recommended to the participants the questionnaire to be completed in „calm circumstances" where the risks of interruption and/or distraction are minimized. The expected time for completion is about two and a half hours with a 10-minute break in-between. The location and time for completion of the questionnaire was a personal choice of the respondents. All respondents were given at least a couple of weeks to complete the questionnaire before no more responses were taken for the research. In case any of the respondents had any concerns or questions the researcher had given his email and telephone number and remained open for contact.

Sampling

Non-probability sampling was used since sample units were chosen deliberately, not randomly as no statistical representativeness is required but particular features of the units are sought (Ritchie, 2003). The main criterion was knowledge and experience in regard to the topics in question. Nevertheless, a range of different experts were contacted in order to cover as many institutional aspects of the industry as possible. Although non-probability sampling was used the number of collected responses – 50 is representative proportionate to the number of total experts in the area of interest. Theoretical sampling, was not used, meaning that further interviewees and other data sources were not chosen in the research process when provisional concepts had been developed and the need for furthers questions identified (Boeije, 2002). The reason behind this is that in order to ensure comparability between each answer of the questionnaire needs to be the same for every participant in the research.

Questionnaire Structure

The questionnaire has been structured in an alignment with each topic of interest by the research. As already mentioned, the questionnaires sent to the potential respondents are identical to ensure comparability and facilitate the summary of the findings. All questions represent one idea each and avoid unnecessary jargon and abbreviations. All leading questions are avoided besides the one based on specific theoretical frameworks. The questionnaire consists of both open and close-ended questions.

The following structure gives a detailed description of the topics covered by the 137 questions in the questionnaire. Those questions can be summarized into few categories regarding a common denominator concerned about the relevant aspects of the research. Questions are asked clearly thus no need for further clarification is necessary and are based on relevant theories and concepts discussed in the literature review.

Section 1 (questions 1-9)

The questions are aimed at getting important information about the respondent – what type and sector he/she works in, professional qualifications, years of experience and general opinions regarding similar research.

Section 2 and 3 (questions 10-22)

Here the questions are aimed at getting a general picture on a financial statement fraudster in Bulgaria based on the same characterless used by the American Association of the Certified Fraud Examiners in their surveys. Moreover, it enquires about which parties have primary roles in deterring detecting and preventing such fraud.

Section 4 (questions 22-94)

This section is the largest one with questions concerned with financial fraud case experiences that the respondents have as well as general ones regarding characteristics of the firms most susceptible to fraud in the financials.

Section 5 (questions 94-116)

Questions in this section concern the roles of the fraud prevention and detection bodies in organizations and what prevents them from being able to achieve their roles effectively.

Section 6 (questions 116-137)

Questions in section 6 wrap up the research together with an enquiry about recommendations for future research that would be helpful for Bulgarian context.

Data Coding and Analysis

The data from the questionnaires was collected after the access to them was cancelled. The data was coded and categorized into themes based on each topic of interest of the research in order to reach the aim of managing organizing and focusing on the most meaningful bits of qualitative data (Malhotra and Birks, 2007). Coding process proposed by Lofland et al. (2006) was used in order to organize the gathered data into various categories and themes

that emerged from the literature which later were the basis of the summary. The main focus was the constant comparison between the theory and data (Boeije, 2002) to ensure adequate comparability of the findings and research conclusions. The questionnaire structure was designed to complement this by making a clear distinction and seamless transition from one theme to the next. The answers from the questionnaire were first processed by the software provided by Google forms and then exported to Excel where additional analyses were done.

Ethical Considerations

Considerations regarding the qualitative nature of the study were addressed in terms of voluntary participation, informed consent together with anonymity and confidentiality (Vaus, 1996). All participants were informed about the purpose of and benefits of study and given a deadline before which they can withdraw their response. General issues of anonymity and privacy of the participants and storage and collection of data were negated making the questionnaire totally anonymous – only the date of completion and respondent's answers are kept. No names of institutions or cases were mentioned. Thus, no information could be linked to a particular individual or company. All of the participants agreed to participate provided they remain anonymous and no traceability to the company they work for could be found. Permission to use the data for this research was granted after each person has accepted to complete it.

Credibility and Authenticity of the data

Concepts like Credibility and Authenticity are of extreme importance when doing qualitative research (Bryman and Bell, 2003).

Credibility: the researcher made sure that credibility is achieved by ensuring concepts such as transferability, dependability and confirmability of the data. There is a distinction between transferability in quantitative and qualitative research. The former will be broader in nature with findings easier to put in general terms whereas the latter will be more detailed and narrowly focused (Bryman and Bell, 2003). The researcher believes that the number of responses taken was enough to give a more complete picture of the issues covered.

Dependability is achieved by a total transparency in the research process and steps taken. Furthermore, it is reinforced by the explanation of the research at the beginning of the questionnaire and topics covered by it.

Confirmability – it is impossible to reach complete objectivity in qualitative research (Bryman and Bell, 2003). The author gives assurance that all the research was done in the most bias-free and objective way possible.

Authenticity: the question of whether the researcher gives an adequate representation of the information gathered using the questionnaire. To ensure this is so we have made sure no misunderstandings were made in the data analysis as well that the data is accurately summed up.

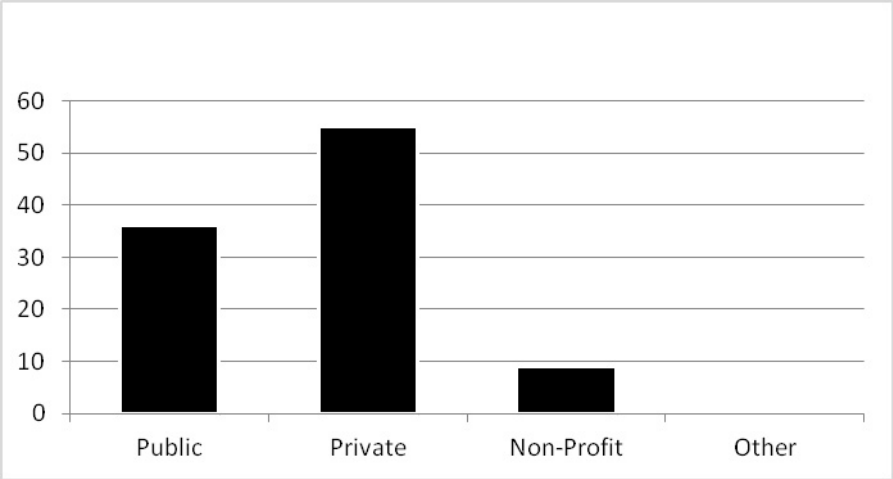
Empirical Findings of the questionnaire

Out of the 80 questionnaires sent out 50 responses were received in the period of response collection, which makes a 62.5% response rate. An acceptable rate gave the nature of the study and the time needed to respond to all questions in the questionnaire.

Respondents come from different types of institutions covering the public, private and non-profit sectors. 55% of the respondents work in the private sector, 36% in the public and 9% in the non-profit one (Figure 1). The distribution indicates the fact that the problem with financial statement fraud is a major concern primary to the private and public sectors in Bulgaria. The most represented areas are: financial (banking, investment intermediaries), audit (internal and external both for public and private institutions), education and consulting.

Figure 1

Type of Institution



Source: questionnaire.

Respondents have an average of eighteen years of experience in their respective fields ranging from four in two of the cases to forty years in one case. Given the general fact that about 10000 hours are needed to become knowledgeable in a field, the amount of experience that the respondents possess indicates that the answers provided to the questions set forth in the questionnaire are reliable. Moreover, about 60% of the respondents are affiliated with a professional organizations such as the Association of Chartered Certified Accountants (20%), Institute of Internal Auditors (10%), Association of Certified Fraud Examiners (20%), other (20%). Those respondents not only are affiliated with such organizations but also possess or are working towards professional and other qualifications including – FCCA, ACCA, CFE, EFE, CPA, CIAPS, Ph.D., CIA, CGAP. Only 20% do not possess any certificate relevant to the topics of interest in the research. 40% possess two or more different certifications (Figures 2 and 3).

Figure 2
Respondents; Affiliations

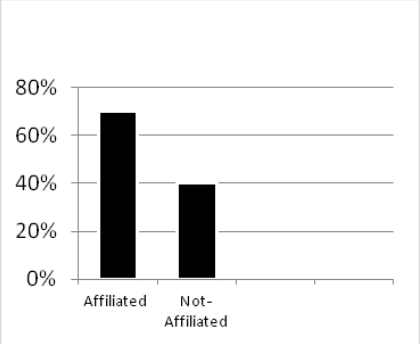
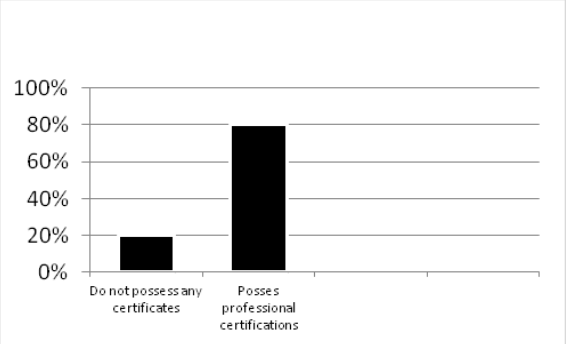


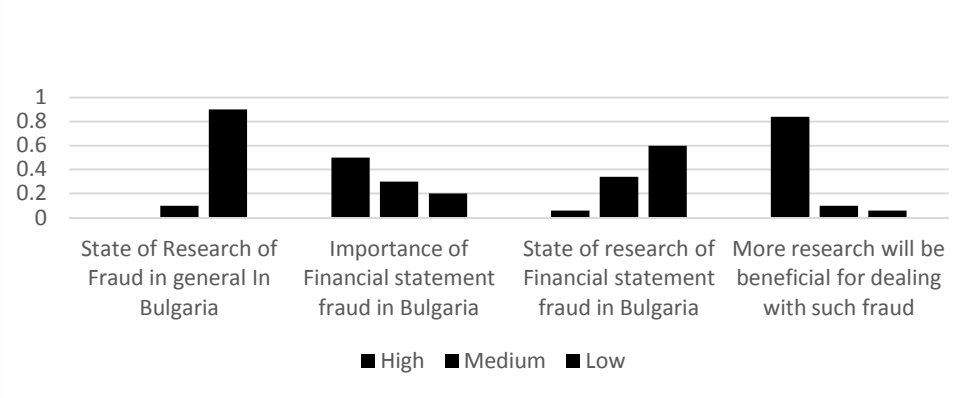
Figure 23
Respondents' Qualifications



Source: questionnaire.

90% of the respondents believe that the state of research on the topic of fraud in general in Bulgaria is not enough.

Figure 4
Opinions



More than 80% of the respondents find the problem of financial statement fraud on Bulgaria to be of a high importance (giving it either a 4 or a 5 on a five rating scale, the remaining 20% give it a 3 out of 5). 94% of the respondents believe that the state of research of financial statement fraud in Bulgaria is between 1 and 3 on a 5 rating scale. Only 6% believe that more research will not be helpful for improving the situation in regards to fraud in the financial statements (Figure 4).

A general profile of a financial statement fraudster

The general profile is based on the experience of the respondents in the following characteristics: gender, marital status, education level, age, position at the entity, time that the fraudster has worked in the organization. The dominant answers were picked from each category. Based on the responses the profile of a financial statement profile is: a male, married, with a master's degree, between 30 and 40 years taking a management position in the organization that he has worked for 5 to 10 years. This profile fits the general profile of fraudsters. A more detailed view on the top responses in each category is found in Table 1.

Table 1

Profile of Financial statement fraudster

Gender	74% – male, 26% – female
Marital status	48% – married, 22% – single, 14% – divorced
Education level	68% – Master's degree; 20% – Bachelors, 10% – Doctoral, 2% – other
Age Level	46% – between 30 and 40 years, 36% – between 40-50, 10% – less than 30 years, 8% – between 50 and 60 years
Position at the entity	62% – Management level; 22% – Mid-level employee 16% – Executive level
Time worked for the organization	62% – 5 to 10 years; 28% – 1 to 5 years;10% 10 to 15 years; 0% – more than 20 years

The results indicate that in the majority of the cases the perpetrators of financial statement fraud in Bulgaria appear to be male which follows the global tendency that males are most commonly engaged in fraudulent activities for various reasons especially when it concerns high value monetary fraud such as the financial statement one. The tendency continues with the marital status and education level – in the majority of responses the financial statement fraudsters are married possessing higher education. In the case of financial statement fraud, the majority of them have a master's degree showing that good education is correlated with the amount and magnitude of the fraud. Although individuals at any age can resort to fraud in the case of financial statement fraud in Bulgaria the tendency is that about 90% of the perpetrators are above 30 years old indicating the point that in order to pull of such level of fraud a critical amount of knowledge and skills are needed. Moreover, the majority of fraudsters in private entities have spent between 5 and 15 years in the organization which has allowed them to raise to higher positions giving them access to the needed knowledge of organizational controls and other tools that have allowed them to resort to financial statement fraud. Over this period the fraudster has established relationships outside the entity which have helped them such relationships are the ones established with: suppliers (46% of the cases), customers (40%), regulators (36%) and auditors (20%). The time worked in public institutions tends to be smaller between 5 and 10 years. Last but not least important the percent of people that commit financial statement fraud as first-time violation is about 25% which shows that the majority of such fraudsters have engaged in other types of fraudulent activities in the past. It has to be mentioned that the type of violations matters. In case of minor frauds, the percentage is lower which shows that the fraudster has made a transition from smaller caliber fraud before engaging in high caliber financial statement one.

General conclusions in regard to financial statement fraud in Bulgaria

In the Bulgarian context the three biggest consequences from financial statement fraud cases according to the respondents are:

First it jeopardizes the integrity and objectivity of the auditing profession especially that of auditing firms (the efficacy of financial statement audits)- Since they are considered to be the party that oversees companies in making sure that the financial information is free from any material misstatements due to error or fraud it is very it places them in a difficult situation when a large scale fraud case happens. The public confidence takes a hit whenever an alleged financial statement fraud case appears. This is especially true when the company is of a public interest and the auditor has a long history and reputation. Those two factors beg the question of whether financial statement fraud can be prevented at all for medium-sized companies using small audit firms.

Second it has a negative effect on Bulgaria's economic growth and prosperity by diminishing the confidence in the market and the financial information produced – the Bulgarian market participants' confidence (including investors, creditors and employees) is adversely severely affected but such fraud which leads to movement of capital outside the country in areas where the financial information transparency and stability are increased. Moreover, potential investors from outside Bulgaria are unwilling to invest capital inside the country and its financial system because they are afraid of being a potential victim of such fraud.

Third – the final but not least important reason is that such fraud not only causes operating problems of the entity experiencing it, but it has a ripple effect on other entities and individuals. These entities include suppliers, vendors, etc. – all that depend on the normal operations of the company. Given the size of the Bulgarian economy this appears to be especially true for financial institutions given the interconnectedness in Bulgaria's economic system.

Financial statement fraud in Bulgaria findings summary

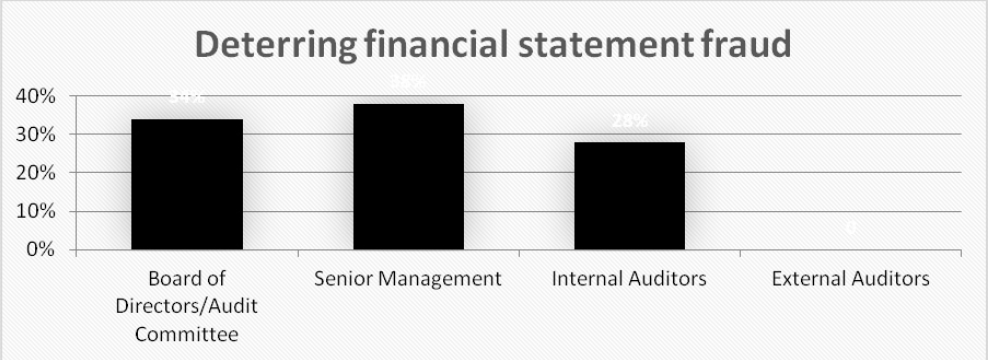
The results indicate that, in general the main reasons or combination thereof that allow financial fraud to occur are: most commonly acting fraudulently regardless of controls put in place in the organization (54%), weak internal controls present (40%), unclear rules of conduct and behavior in the entity, collusion to circumvent good controls (14%). In some of the situations such as collusion good controls can do little to prevent financial statement fraud. In the cases when the fraudster has acted fraudulently regardless of controls, he/she usually has established relationships most commonly with regulators followed by auditors.

On the opposite side of the fraudster are the parties responsible for coping with financial statement fraud in terms of deterring, preventing and detecting it. The results indicate that in those different aspects different parties have taken primary roles. In the case of deterring such fraud the Board of Directors/Audit Committee and senior management are perceived to have the primary role followed by the internal audit function (Figure 5). It has to be noted that external auditors were not even selected once as having the primary role which

indicates that deterring such fraud should be in the hands of organizations themselves rather than relying on an external party.

Figure 5

Deterring financial statement fraud



When the focus is changed to detecting the fraud, the primary role falls on the internal audit function (66%) followed by approximately equal percentages going to external auditors, board of directors and senior management. Interestingly the perception of major prevention role again is taken by the internal audit function (34%) (Figure 6) given the fact that the internal auditors are merely making sure that the organizational processes are followed as prescribed by management. Following are the board of directors and the senior management which are typically allotted the primary role in the prevention of organizational fraud no matter the caliber. This is so because they are the parties responsible to the shareholders to ensure that fraud does not occur in organizations. Detecting all caliber of fraud is a duty to everyone in the organization not to a particular party. Combinations of different aspects of each party's responsibilities towards ensuring a fraud-free environment are the way to effectively prevent deter and detect financial statement fraud.

When we talk about financial statement fraud, in particular the private institutions are the most susceptible by a large margin – 72% followed by the public and non-profit organizations with 14% respectively. When the focus is changed to industry level the results show a proportionate division between: all kinds of industry (with a particular emphasis on the publicly traded ones), financial services (banks), and construction/ manufacturing and governmental (including European funds) (Figure 7).

Figure 6

Prevention of FS fraud

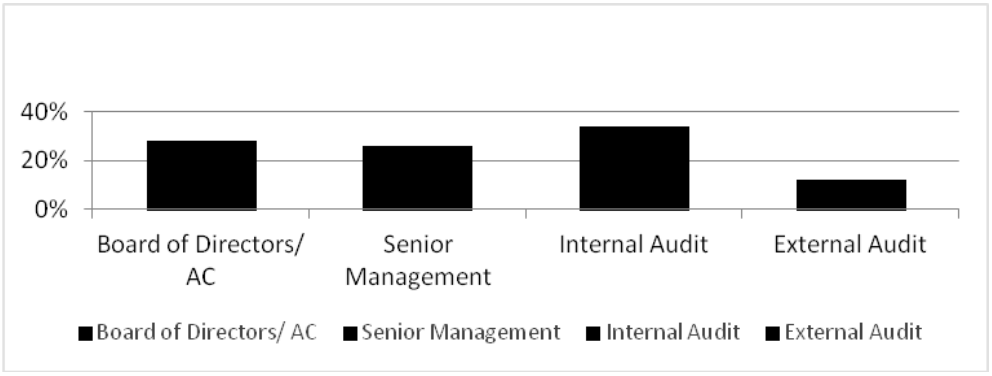
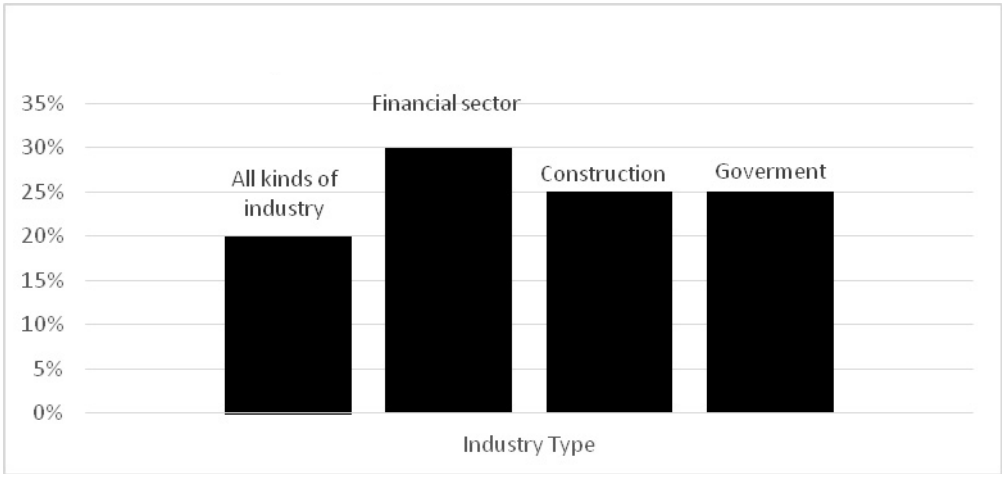


Figure 7

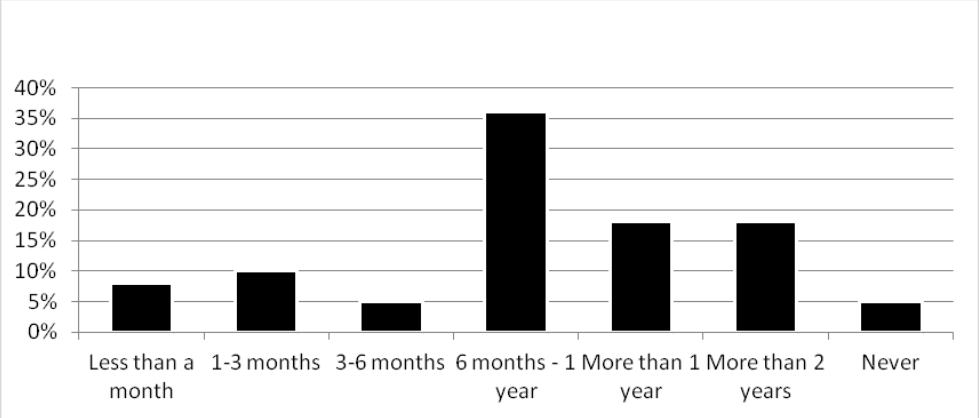
Susceptibility to Financial statement fraud



When talking about the size of the entities medium (between 50 and 250 employees) and large enterprises (more than 250 employees) account for 80% of the cases when compared to small (less than 50 employees) and micro (less than 10 employees) with 14% and 6% respectively. Usually, financial statement fraud in Bulgaria seems to be discovered early – in 36% of the cases it has been discovered between 6 months and 1 year after is has occurred. In 18% of the time it took more than 2 years before such fraud was detected (Figure 8).

Figure 8

Time before detection



The time before discovery varies depending on the industry with construction and governmental sectors needing most time before such fraud is discovered. In the case of the financial sector, it all depends on the specifics of the fraud.

In terms of the loss from the fraud many of the respondent's answers could not be used to determine an exact average estimate. The variance is from 50,000 BGN to 3 million depending on the size of the firm. Smaller firms have an average loss of 50,000 BGN to 200,000 BGN whereas bigger firms tend to suffer higher losses in between 1 million and 3 million depending on the sector. Finance and constriction sectors tend to suffer the highest median loss which could go as high as 15% of the revenue. Most commonly it is between 1 and 20%, especially in the financial sector. Construction companies tend to suffer around 2 to 15% revenue loss in case financial statement fraud occurs in the organization. Government institutions are estimated to suffer between 200,000BGN and 250,000 BGN loss from such fraud.

For individuals responsible in 78% of the cases a combination involving individuals from mid and high management was needed to perpetrate the fraud. In 56% the top management was involved – especially true for fraudulent financial reporting resulting in higher value frauds. Usually a collusion of at least between 5 to 10 employees (in 86% of the time) is needed to commit such fraud. Although anyone can potentially „help" financial statement fraud to occur in an organization, the major cases are made with the help of personnel with more decision/execution power. In private organizations the fraudsters include directors, chief accountants, payable managers, whereas in public institutions mostly the management and experts are involved. For smaller caliber frauds affecting the financial statements cashier, sales personnel and low-mid management are the main perpetrators.

The most common methods that result in fraudulent financial reporting across all sectors in above 90% of the time according to responses are:

Concealed liabilities and expenses are the first popular method for engaging in financial statement fraud in Bulgaria. This method is believed to be much easier to commit since missing transactions are generally harder to detect than improperly recorded ones since they do not leave any trail behind them. The most common techniques for doing so are omissions of liability/expenses and capitalizing expenses. The omission of liability/ expenses is easily done by simply failing to record them as such – invoices could be thrown away or shredded, in many cases the individuals hiding those try to compensate for the omitted items in future periods. The other common technique is to capitalize revenue-based expenses indirectly increasing the income and assets because of the bonus of amortization over a period of years rather than being expensed in one period (this however leads to an underestimation of income in subsequent periods as assets are depreciated). The opposite occurs as well – expensing capital expenditures. Some of the respondents have indicated that in some organizations, fraud has been done in order to minimize the net income due to tax and other considerations. The most common red flags that were present in companies that have engaged in concealment of liabilities and expenses are: unusual increases in gross margins in comparison with the industry average, assets, liabilities and other items being based on significant estimated that involve subjective judgments that are difficult to confirm.

Revenue manipulation is another method for that Bulgarian fraudsters use in order to commit financial statement fraud in order to make their financial position look better. This method is often (82% of the time) connected with establishing shell companies in Bulgaria or abroad those companies are then used to make fictitious transactions which included the payment of funds for assets while the same amounts were returned to the „parent company" as sales receipts. Another frequent technique listed by the respondents is the so-called sales with conditions where sales are booked even though the terms that are required to complete the sale are not completed. Recording expenses in the wrong period is popular for Bulgarian companies that were following strict budgets – the pressure to meet the expected goals makes them expense certain costs into periods other than the ones they should be expensed in. Last but not least frequently used technique is the premature revenue recognition where collectability cannot be reasonably assured – or in other words is dependent on some future events or the customer does not have the ability to pay (either because it has financial difficulties or is a shall company which does not have enough assets to justify the transaction). Most popular red flags for Bulgarian context are – unusual increases in ratios relating to margins, number of day's in receivables in relation to peer companies.

Improper disclosures – the management has the inherent obligation to make disclosures of all significant information. Improper disclosures relating to financial statement fraud in Bulgaria most commonly involve hiding of related-party transactions, liability omissions and management fraud. Related party transactions occur most commonly when a company does business with another entity whose management and other operating decisions can be significantly influenced by the former. In Bulgaria the financial interest between companies is not always transparent. Moreover, such related transactions are not always material to the financial statement as a whole, especially true for bigger companies, but represent a form of financial fraud nonetheless. Second is disclosure of management fraud – management of the organizations have an obligation to disclose significant acts of fraud committed by

officers, executives or other employees in key positions in an organization. In Bulgaria withholding such information from the auditors appears not to be an isolated incident. The third place is tied between omissions of liabilities and failing to discourse all accounting changes in terms of estimates and reporting entities. Typical omissions include the failure to disclose material contingent liabilities or loan covenants of the business. Typically the most common red flags given concerning this type of financial statement fraud by the respondents are: a history of violations of national laws and other regulations of the entity, its senior management of board members, significant bank accounts, operations of related parties of the company beyond Bulgaria's borders especially in tax-haven jurisdictions and formal or informal restrictions on the auditors that limits their access to people or needed information.

Improper asset valuation. The improper asset valuation schemes in Bulgaria fall in one of three categories – schemes with inventory valuation, schemes with accounts receivable and schemes with misrepresenting the nature of the assets. Inventory valuation fraud techniques involve failing to write down inventories or inflating the number or prices of different items. Those schemes typically involve the creation of fake documentation which includes reports and inventory count sheets. One of the respondents has shared that in of the cases involving inventory valuation fraud the company employees even have tempered with the generated computer inventory counts in order to misguide the auditors. Another way that Bulgarian fraudsters use to manipulate the financial statements is via accounts receivable – either by failure to write them down and accrue losses on their non-collectability or acknowledging fictitious account receivable in the cases where the bonuses of management are tied with sales figures. The majority of the respondents agree that the fraudsters tend to provide false confirmations of the balances of accounts receivable in case such fraud occurs in the organization in question. Improper asset valuation is often connected (44% of the time) with other assets such as the fixed assets – the most popular technique being misrepresenting the asset value (not recording at cost). In 14% of the cases connected with such fraud involve reporting fixed assets at market value or using fake valuations to support their value. Most frequent red flags in the above-mentioned scenarios are similar to the revenue recognition methods plus an unusual change in the fixed assets and depreciation.

The pressure is the main driver that leads to the occurrence of financial statement fraud in Bulgaria. Pressures come from a variety of factors including frequent changes in legislation, investor/market expectations, low salaries, bad business environment, loss of job, medical bills, greed, poor financial performance, requirements of regulatory authorities, debt with most common being the personal pressure factors that lead the individual to commit the fraud. In terms of rationalization one of the most common answers include a variation of the following statement – „everybody is stealing and no one is held accountable" or „in Bulgaria everybody does it why not me? Am I the biggest „shmatka" (loser). As mentioned beforehand weak internal controls play an important role in providing an opportunity to commit financial statement fraud in Bulgaria. Interestingly in many of the respondents answers the minimal sanctions by legislation and weak policy enforcement were listed as opportunity factors. Moreover, the social standards of behavior reinforced by the examples of the most recognizable highly positioned at every level play an intricate role in the rationalization aspect of the financial statement fraudsters. This is clearly reinforced by the fact that in 68% of organizations that have experienced such fraud

in Bulgaria had a written code of ethics for business conduct. In the rest of the cases 50% respondents do not believe that such code would decrease the probability of such fraud this is especially true for the public sector. Moreover, in half of the organizations that have experienced fraud in the financials no ongoing fraud awareness training was carried out periodically such training would decrease the probability of such fraud according to 82% of the respondents. More than half of the respondents indicate that new employees are made aware of the organization's view on fraud and fraud-related activities. Such onboarding is likely to have a positive impact on decreasing the probability of fraud occurring according to 86% of responses.

When financial statement fraud is concerned one of the most important impact factors is the example of management. Bulgaria is no exception. More than 60% of the respondents believe that management has not set an example and enforced a zero-tolerance approach to fraud issues in the organization. More than 88% believe such example would decrease the risk of financial statement fraud occurring in these organizations. This is even more important than the corporate mission statement where the majority of organizations had one (64%) and even so financial statement still occurred in the entity. Nonetheless, corporate mission statement is still found to be an impotent preventive measure in fighting financial statement fraud in Bulgaria since it guides not only the management but ordinary employees to commit to ethical leadership and actions.

In 72% of the organizations that have experienced financial statement fraud the corporate culture supported ethical behavior on the workplace, however, the results show that the culture could be improved by: regular meetings and awareness programs in regard to ethical values and principles. The topic of manifestation of fraud intolerance is key for decreasing the risk of financial statement fraud. Moreover, those principles need to be embedded in preventive controls such as constant monitoring and rotation of persons occupying certain positions. All in all it is a combination of factors corporate culture alone cannot eliminate the risk of financial statement fraud in Bulgaria it should be a combination of establishing a responsible corporate governance, vigilant board of directors and audit committee, diligent management, as well as adequate and effective internal audit functions using an alert, skeptical external audit function, responsible legal counsel, adequate and effective internal control structure, and external regulatory procedures implementing appropriate corporate strategies for correction of the committed financial statement fraud, elimination of the probability of its future occurrences, and restatement of confidence in the financial statement process. When these strategies are performed properly and effectively, the opportunity for financial statement fraud is substantially reduced.

Background checks of new hires were a common practice in organizations that have experienced financial statement fraud in Bulgaria. Although the majority of the respondents believe that indeed such checks are helpful in decreasing the risk of fraud in organizations (e.g. recommendations and other information provided by the potential applicant may contain false information) only 26% believe that they are helpful in decreasing the risk of financial statement fraud. This is not only due to the fact that this type of fraud is committed by the higher levels of management but to the fact that the many major financial statement frauds were committed by highly educated people with impeccable references.

Background checks are relevant to low-value fraud such as misappropriation of assets but not to fraud in the financials.

The results indicate that reporting is an issue in 42% of the organizations that have experienced financial statement fraud. The employees did not know how to report a suspected occurrence of such fraud. Fifty-six percent of the responses indicate that there were no adequate monitoring controls in place to identify any red flags. Even in the case that monitoring controls were in place in only 68% of the organizations those controls were enforced strictly by the management and supervisory staff – the lack of authorization mechanisms and making unilateral decisions beside formal separation of functions are two key issued that were identified. In many cases, the segregation of duties was not an efficient means to prevent financial statement fraud because the individuals were in collusion. The most effective monitoring controls pinpointed which are effective in deterring financial statement fraud are having a permanent independent internal control function throughout the year (with sufficient personnel to enforce the internal guidelines), regular external audits as well as real-time operation monitoring with correlation analysis and indebt oversight approach consisting of multiple analytical technicians and tools.

The attitude of management and its inability to display and communicate an appropriate stance on internal control and financial control process was the key to the occurrence of the fraud in the financials in organizations – true in 72% of the time. The most common failure was due to management being dominated by a single/small group of individuals followed/in combination with disregard of regulatory rules, inadequate monitoring of significant controls and failure to correct material internal control weaknesses. In case of intentional manipulation resulting in financial statement fraud internal controls are ineffective if the management in charge has the ability to override them.

High turnover of management, legal advisers or board members in a short period of time before the fraud was discovered took place in 66% of the organizations. Although financial statement fraud was discovered in 56% of the cases no strained relationship existed between the management and the current/previous auditor of the company. In the majority of the cases, the relationship was described as good and even friendly.

In Bulgaria financial statement fraud is the first incident of fraud on organizations in 48% of the time. Other types of fraud preceding were but not limited to – embezzlement, occupational fraud, loan granting, bribes, corruptions, supply chain fraud, theft of assets. In 50% of the time, the governing bodies of such organizations were explicitly involved. In 56% of the cases the bonus and incentive structure in the organization was such to foster the risk of fraud. It has to be noted that in only 46% of the time organizations resorting to financial statement fraud were in imminent threat of bankruptcy or foreclosure. Other threats to the entities were: pressure to win governmental or other contracts, revocation of license, competition, needing to deal with loans and debt.

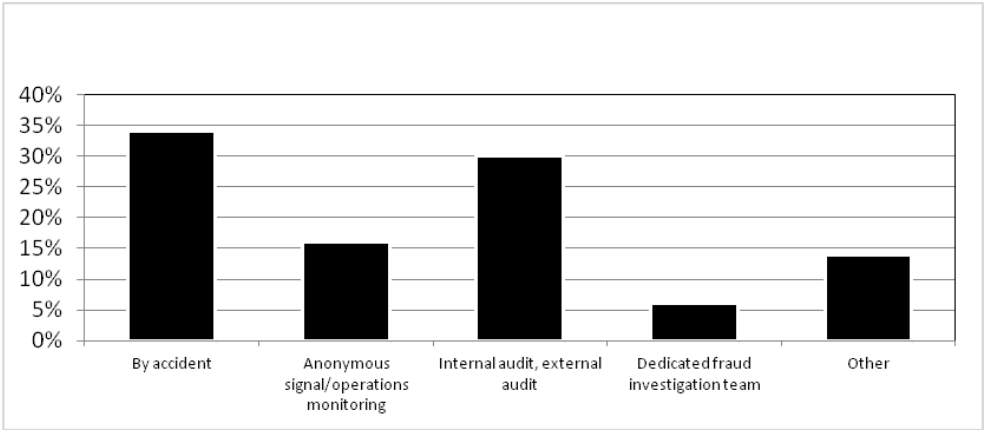
Although that an established fraud risk management program was in place in 60% of organizations that have experienced financial statement fraud in Bulgaria it was still not able to deter the occurrence of the fraud. According to the respondents it was due to a variety of factors prominent of which is that in many organizations such risk management program is only formal and is subject to override of controls by management in the entity.

The most common internal control framework used in those organizations was COSO which 30% of the respondents believe that is the most effective system to prevent and detect fraud in the financials in organizations. Second place is taken by COBIT due to its orientation towards business processes application of a holistic approach.

Most commonly financial statement fraud in Bulgaria was discovered by accident or in a case of bankruptcy of the organization (the organization could not continue to hide the fraud for much longer) (Figure 9). There were red flags present in before the discovery of the fraud in 58% of the cases. Most red flags are case-specific with few common ones including unused leave, lavish lifestyle, lack of segregation duties(one person performs different conflicting operations), unexpected revenue streams, too big/low profits accompanied with unusual activities, behavioral anomalies of employees, accounting anomalies involve irregularities in the accounting system, analytical anomalies, operational anomalies and other readily noticeable internal control weaknesses.

Figure 9

Discovery of Financial statement fraud



After the incidence of financial statement fraud measures were taken in order to prevent such fraud from occurring again. Those measures include new controls over the financial reporting process, improved rules and policies over procedures, rotation of job responsibilities and tasks, and more effective monitoring over the organization. Thirty percent of the respondents believe that these measures were not enough to prevent the incidence of financial statement fraud in the organization in future, 40% believe that the measures can indeed help in doing so whereas the rest have taken the stance that they can decrease the risk of such fraud but doubt that the measures will be enforced in the organization. Eighty-five percent of the respondents believe that in order such fraud to be prevented in future a more holistic change in regulations is needed besides just optimizing the process of fraud risk management and establishing new procedures controls and monitoring mechanisms.

Financial statement Fraud Prevention and Detection in Bulgaria

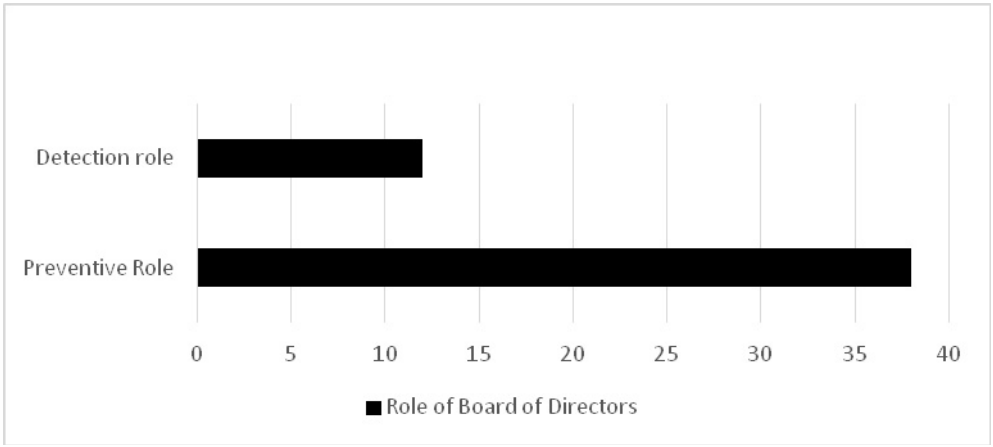
This part of the analysis takes into account the answers to the questions aimed at understanding the role of the major parties that play a role in the prevention and detection of financial statement fraud in Bulgaria. The most important considerations according to the respondents in order parties to successfully prevent and detect such fraud in general is to be able to correctly identify characteristics of fraudulent behavior in organizations together with addressing the risks that could lead to a material misstatement in the financial statements. Moreover, this section includes recommendations for improvements for each party based on the results of the study that would help their ability to combat financial statement fraud more effectively.

a) Board of Directors Role (including Audit Committee)

The results from the questionnaire indicate that the role of the board of directors plays a bigger role in the preventive measures against such fraud rather than being the body that detects it in Bulgarian context. A comparison can be found in Figure 10. The most important quality of the board of directors in combatting financial statement fraud is to establish proper tone in the organization which is then reflected in the policies and procedures adopted for daily operations of the entity. It is the party responsible for reducing the rationalization of such fraud by establishing a strong ethical context in the organization.

Figure 10

Role of the board of directors



There are several main reasons that are preventing the board of directors from combating financial statement fraud in organizations effectively. Leading is their inability to see and observe the day to day operations of the company and together with insufficient staff to make sure that all procedures and internal controls are monitored effectively. When a purposeful financial statement manipulation is done the board of directors is unlikely to prevent it since its members have most likely participated in committing the fraud. In order

this to be improved and the board to be truly capable of decreasing the risk of financial statement fraud the answers indicate three big areas of improvement that should be focused upon in organizations that wish to remain free from such fraud. The first area is the selection of the board members – since the board is one of the parties responsible for establishing the organizational culture it is important that the members have a clean history, relevant experience in the industry and zero tolerance for fraud. This includes any conflicts of interest that each board member might have. The question of whether the member of the board makes his/her decision for the better of the stakeholders' needs to be in focus. Second – board members need to implement financial and other penalties in order to motivate management, which is closer to daily operations, to develop and systematically apply models tailored to the organization aimed at preventing fraud in the financials. The third area is the role of the board of director to educate not only the organization but society about the importance of fraud-free environment and the benefits deriving from it. Thus, the community will become intolerant to fraud and will demand responsibility for fraudsters taking part in such fraud.

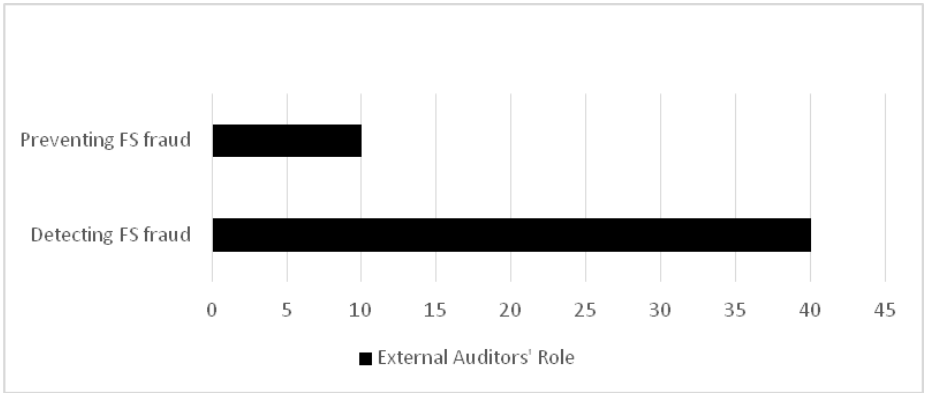
Similar are the results of the role of the Audit Committee – it plays a larger role in the prevention of financial statement fraud. It together with the board of directors plays an important role in establishing the governance principles, values, ethical culture in the organization which some of the respondents argue that are the topmost factor in the prevention of such fraud in Bulgaria. Willingness to comply with the law is a preceding factor which applies to an effective role of the board of directors and audit committees of companies in Bulgaria. Audit committees in Bulgaria are in communication with individuals on key management positions, what they are lacking is a direct and open way of communicating with one or two levels below senior management. This would certainly facilitate the transition of suspected wrongdoing in the organization by bringing it to the attention of the audit committee. Moreover, the role of the audit committees in Bulgarian companies seems to be lacking the initiative and empowerment to investigate any alleged fraud in the organization. Around 20% of the respondents believe that the members of the audit committees need to possess more knowledge and experience in fraud prevention and managing the risk of such. Moreover, both the board of directors and audit committee members should more openly declare their responsibility to the users of financial statement information and their role in the prevention and detection of any fraud related.

b) External Auditors' Role

The external auditors are expected to play a different role than the board of directors in the prevention of detection in financial statement fraud (Figure 11). 10% of the respondents believe that external audit is not necessary for organizations.

Figure 11

Role of the external auditor



The two most important characteristics that an external auditor needs to possess in Bulgaria in order to combat financial statement fraud effectively are: exercising professional skepticism (or the mindset that acknowledges that fraud could be present in the organization) together with the ability to make inquiries to management and other parties in the organization about how the risk of financial statement fraud is addressed. The latter includes questions about whether management has knowledge of fraud or suspected fraud occurring in the organization and how management communicates to employees its stance on appropriate ethical and business conduct. It is very important for the external auditors not only to be able to identify how and which financial statements items might be susceptible to fraud in the specific organization but know-how management could try to conceal this.

Half of the respondents believe that the size of the external audit firm has an effect on its ability to detect financial statement fraud. The slogan „bigger is better" is true given the fact bigger firms possess higher capacity by possessing/having access to more expertise and knowledge. However, the size of the firm will not matter in cases where the auditors are helping in the financial statement fraud. Another common response which prevents the external auditors from combatting effectively fraud in the financials is that the market in Bulgaria is quite small. This leads to a stance that „a client is always right" which results to an inherent limitation of the external audit and non-diligent performances of its duties and even collusion with the fraudsters in cases where the fraud is significant (many of the respondents were referring to a recent financial institution that went bust).The inherent lack of independence of the external auditors (they are paid by the firm) together with unfamiliarity with specifics of certain businesses (more relevant to smaller audit firms) is another common problem. In regard to the necessary analytical procedures – usually they are performed on account level where only the significant deviations are delved into. 60% of the respondents believe that more detail on the analytical producers could be a way of detecting financial statement fraud in Bulgarian firms. Moreover 30% of the respondents believe that the use of predetermined checklists/procedures could be dysfunctional because it limits the auditor's ability to expand their critical thinking beyond them- especially when

making adjustments to audit plans as a result of higher fraud risk assessment in the organization. External auditors are rarely trained in investigation (they are not forensic accountants) which undermines their ability to react accordingly after detection of such fraud. Last but not least many of the audit firms are following specific budgets for each engagement which in some cases can lead to understaffing which puts pressure on the engagement team which might lead to missing or overlooking important information.

Respondents believe that many of the aforementioned problems can be solved on a governmental level including changes in regulation and/or creating an agency to act between the companies and external auditors leading to higher independence. The independence will be greater as well whenever the external auditors provide as few as non-audit services to the client. Respondents agree that some of the non-audit services can affect the independence of the auditor distracting them from their main role which is giving an opinion on the correctness of the financial statements. The lack of knowledge regarding certain industries can be solved by allowing only auditors specializing in the relevant industry to be able to audit those sectors or hiring outside specialists. The problem with understaffing can be easily solved by sacrificing profit margins in order to hire additional staff. For an external auditor it crucial to prioritize efficiency of the work rather than trying to squeeze extra profit.

c) Internal Auditors Role:

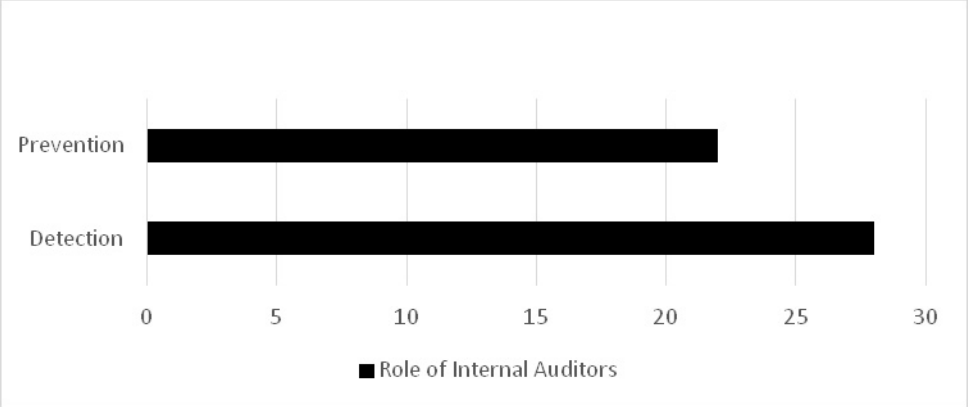
Internal auditors appear to have a split role in financial statement fraud prevention and detection in the Bulgarian context (Figure 12). Sixteen percent of the respondents have indicated that it is not a job of internal auditors to audit the financial statements of the company (this statement relates to internal audit expectation gap). Although it is not their explicit purpose to audit the financial statement of the organization an argument can be made that internal auditors play a key role in accessing operating procedures, regulations and standards that relate to the process of putting together the financials of an organization. The most important qualities of the internal audit function in order to combat financial statement fraud efficiently are the ability to be able to question management decisions and especially those that motivate the employees of the company with what attitude to perform their day to day activities.

The majority of the respondents believe that there are three main problems that prevent internal auditors from being fully capable of combating the financial statement fraud in Bulgarian companies. The first one is a lack of independence (same problem but different context as the external audit) or too much dependence on upper management when determining the scope of the engagements. The second discussed in 40% of the time is the lack of experience and knowledge over the financial reporting process. In 34% of the cases a solution is given to correct this by establishing a Subdivision of internal control in larger organizations specifically aimed at giving assurance for the correctness of the financial statements. Third – the results indicate that mostly the internal audit function in Bulgaria is concerned with testing controls that relate to ensuring that the financial statement process is operated accordingly. However, this does not provide assurance of the accuracy in the financial statements. The role of the internal audit function is significant in decreasing the

risk of financial statement fraud thus the increased need for substantive tests alongside the internal auditing process are desired. Those tests could involve detailed testing of transaction and account balances and/or analytical procedures. That is not to say that the internal audit is not capable of preventing different types of fraud, in fact they are more likely to catch smaller caliber frauds and noncompliance with the internal policies than external audits. This is due to the fact that external auditors typically use specific materiality in their procedures which in many cases is quite high which decreases the risk of catching small frauds, which although are „immaterial" are still fraud. Although the major responsibility of the auditor is not to prevent and detect financial statement fraud it is closely connected to it by making sure that the financial statements are reliable. After all the internal control is a process that is affected by the board of directors, management and other personnel which aims at providing reasonable assurance in three areas: achieving effectiveness and efficiency in operations, compliance with laws and regulations and reliable financial reporting. Fraud in the financials jeopardizes the latter two which decreases the role of internal control as a whole.

Figure 12

Role of Internal audit



d) Mid to top Management role:

The role of management is important not only for committing financial statement fraud but also in the opposite direction. Management is the only body believed to have equal role in financial fraud prevention and detection due to three reasons given by the respondents 1) they are the ones that are closest to daily operations 2) they are the ones that communicate the right ethical tone and set the standards of behavior in the organization to the rest of employees. 3) In smaller and mid seized companies' owners are part of the management of the company – they have an inherent interest to keep such fraud outside the company unless they are the ones committing it. Without the support of the management no fraud can occur in organizations. Most commonly what prevents them from effective prevention and detection of financial statement fraud in Bulgaria is the fact that in many of the organization where such fraud occurred the management had engaged in related party transactions where

some form of vested interest was present which lead to transactions which purpose was not to follow the correct policies which are established in the organization but to bend them for specific reasons. For higher caliber fraud, higher levels of management are involved. Management, in general, is the party that follows the directions of the board of directors and executive directors – if they do not have the correct raw model of how to conduct business accordingly, they cannot be expected to prevent and/or detect financial statement fraud in Bulgaria effectively. It is worth noting that in the majority of the cases it is up to management to implement any corrective measures after an incidence of fraud in the organization which further bolsters their organizational role in combating financial statement fraud.

e) Roles of parties outside the organization

Results indicate that last but not least important role goes to parties outside the organization. Those organizations include governmental, professional organizations and other:

i) Government – the respondents believe that it is the player that can influence the external organizational environment the most when talking about fraud in the financials. In order to do so the government needs to work in three areas: First, it needs to increase its sanctions towards companies and individuals that engage in such fraud. More than 60% of the respondents believe that increased sanctions in terms of fines and jail time are needed for its successful prevention. Those fines should not be limited only to parties in the organization but to all related parties that have allowed it to happen including the external auditors and other organizations. Some of the respondents have compared the consequences of such fraud in western counties like the USA where all involved including the board of directors and external auditors have faced tremendous penalties. More than two-thirds of the respondents believe that to some degree the current level of law enforcement resources directed at financial reporting are deficient and should be increased. This not only includes faster adoption of the latest international regulation in regard to reporting but also soft preventive controls like propagating the theme of the importance of the correctness in the financial statements and the consequences to the society and economy of Bulgaria. These consequences do not only include erosion of the confidence in the ability of different institutions to enforce the law and detect such a fraud but the decreased willingness to businesses and investors to move to Bulgaria where environmental factors such as the labor force and low tax rate provide the opportunity for increased margins. Last but not least is the problem of whistleblowing, which has been found to be one of the most frequent ways of detection financial statement fraud. There is a lack of means that individuals can use to report suspected fraud of such caliber together with lack of confidence that there will be a follow-up inquiry into the signal.

ii) Role of professional organizations – the results indicate that the potential ability of professional organizations is underused in Bulgaria. Those organizations due to the combined expertise of their members, not only can help the government implement new more efficient regulation but can act as a source of information/ education to individuals from all organizational levels for fraud and fraud-related issues. In Bulgaria such

independent organizations are the chapters of the Institute of Internal Auditors and the American Association of Certified Fraud Examiners. Members from these intuitions may provide invaluable assistance to organizations in terms of fraud prevention and detection due to their extensive knowledge and experience that might not be otherwise found in-house. Moreover, they can provide a more objective input into management's evaluation of the risk related to financial statements (especially when involving parties such as senior management/board of directors) and assist the audit committee and board of directors in the evaluation of the measures implemented by management. Certified fraud examiners may conduct independent examinations to resolve allegations or signals of suspected fraud by reporting either to the appropriate level in the organization or outside it. The major reason why entities are not seeking help from such professionals are privacy concerns. Those privacy concerns can easily be eliminated with non-disclosure agreements.

iii) Media – 54% of the respondents believe that media can play a preventive role when financial statement fraud is concerned. Newspapers shows, programs devoted to financial statement fraud and other fraud in general- can create buzz around the problem and with constant exposure prevent potential fraudsters in engaging in such fraud.

iv) Educational establishments – last but not least as mentioned the majority of the respondents believe that the state of research in financial statement fraud and fraud in general is not enough. Researchers need to focus their efforts and share their studies on different means of fraud prevention and detection with governmental institutions and professional organizations.

Model for financial statement fraud prevention and detection for Bulgaria

A new research a model is proposed which takes into account both the findings of this study hoping to shed light and help on prevention and detection of financial statement fraud's ecosystem in Bulgaria. A visual simplification of the model containing one entity is found on Figure 13.

The model takes into account the environment both on organizational and environmental levels. The organization level is represented by a triangle in the center of which is the management of the organization since they are the party that is involved in committing financial statement fraud. For fraudulent financial reporting it is the mid-high management, for misappropriation of assets it is the mid-management that is usually involved. However, they are the party that is most efficiently being able to detect and prevent provided with proper motivation due to their daily interactions with the operations of the company and making sure that the prescribed policies are followed. The three apexes of the triangle represent the three other parties that play, to a different extent, role in the prevention and detection of financial statement fraud, that need to keep management in check – the board of directors/audit committee, internal audit function and external audit. Board of the directors/audit committee set the foundation in the organization in terms of not only tone and ethical culture but prescribing actions to detecting and deterring fraud in the financials in organizations. The internal audit function not only has the responsibility to question the decisions of management but also make sure that all processes in the organization are

adhered and followed. The external audit is the outside assurance that vouches for the correctness of the financial statements. A special focus needs to be paid on concealed liabilities/expenses, revenue manipulation techniques improper disclosures, improper assets valuations and the red flags associated with them. Table 2 summarizes the main points found by the research that prevents the parties from achieving their role.

Figure 13

New model for dealing with FS fraud

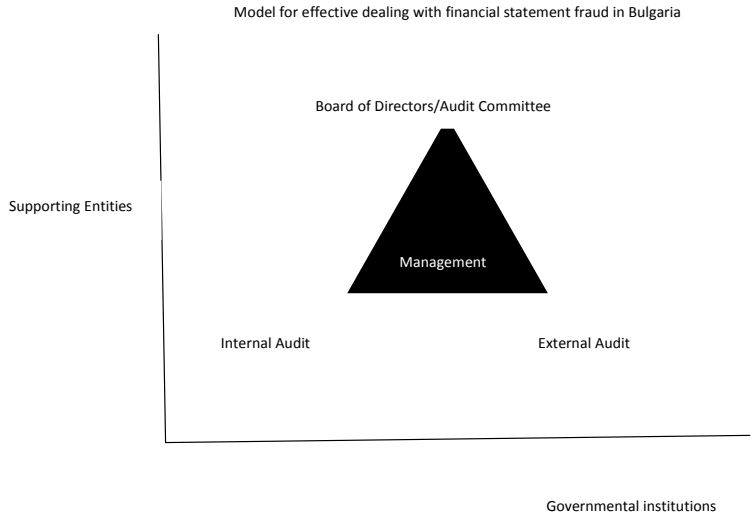


Table 2

Issues and Solutions

	Board of Directors/Audit committee	Internal Audit Function	External Auditors
Issues	Participants in the fraud, lack of participation in daily operations, lack of knowledge and experience in managing fraud risks	Lack of independence, lack of experience and contact with the financial reporting process, do not provide assurance of the accuracy of the financials	Lack of independence, „Client is always right stance", collusion in fraud, rarely trained in investigation, understaffing
Potential solutions	Independent board members with no vested interest, set an example both in and outside the organization on high integrity and educate the community in regard to the benefits of fraud-free environment. Make communication easier between them and lower organizational levels.	More independence on the audit function, establish a subdivision that is concerned with the accuracy of the financials, more training on detecting fraud. Ways to report high caliber fraud outside the organization. Red flag detection trainings, Periodic reviews and risk assessments.	Limit non-audit services provided to audit clients, indebt analytical procedures, training in fraud detection and risk assessment, hire more staff. Red flag detection training

In the case that all three parties take their role accordingly the management's pressure, opportunity and rationalization to commit fraud in the financials are severely limited.

The outside environment of the model is comprised of the government (and related bodies) on the X axis and supporting institutions on the Y axis. The government is the party that influences the external organizational environment the most, it establishes the foundation and regulations on which firms operate in Bulgaria. The supporting institutions include professional organizations and the media. Professional organizations can not only be a used as a means for education on prevention and detection methods of financial statement fraud in organizations but help the governmental ones establish a better legislation and requirements over the financial statement process. Moreover, they can be used as a means to share experience among different organizational levels and provide training on issues concerning the risk and importance of financial statement fraud prevention. Last but not least specialist from such organizations can be brought in organizations to provide independent valuation and assistance in the prevention of such fraud in companies. The role of the media needs to be taken into serious consideration as well – individuals representing different stakeholders in the problem of financial statement fraud can propagate this problem into the community. Table 3 summarizes the main points taken from the research:

Table 3

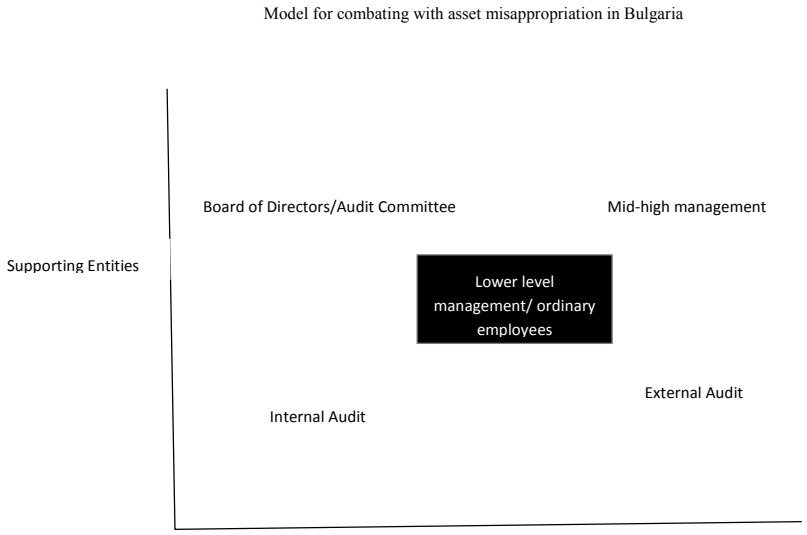
Issues and solutions – parties outside the organization

	Government	Supporting Institutions
Issues	Lack of consequences for financial statement fraudsters, more enforcement measures, low public confidence in governmental institutions	Not enough involvement by organizations in Associations, not enough leveraging associations' resources in terms of experience and knowledge in dealing with the problem. The media needs to play a higher preventive role. More research needed on the problem
Solutions	Increases sanctions (monetary jail, license revocation), faster and clear adoption of changes in the international accounting standards, taking an affirmative stance on the problem, establishing channels for efficient whistleblowers and follow up action mechanisms. Partnerships with the supporting institutions and collaboration with them with the goal of dealing with the problem. Proposing insurance for organizations in case such fraud occurs in them (similar to auditor assurance of mistake in the opinion)	Foster participation and sharing of experience in professional organizations including red flags and risk management techniques. Using them as a source of information and independent consultation even in case where an investigation is needed. Education the community by talking about the problem in shows, articles and other means of communication more research on the problem by researchers. Act as an in-between intermediary between government and organizations

For misappropriation of assets the model can be adapted by altering the center of the organization aspect (see Figure 14). Here again, the parties that participate in such fraud are in best role to prevent and detect such fraud. The other elements of the model remain the same.

Figure 14

Adapted model



As seen by the findings combating financial statement fraud in Bulgaria is a group effort needing several parties to keep the risk of such fraud in check. The more tighten up the ecosystem is and the critical mass of factors in place the more likely financial statement fraud is to be detected and most importantly prevented in Bulgaria.

Research implications

The contribution from this study research has direct implication for further research in several general directions:

i) First, it enriches the academic literature by shedding light on the state of the financial statement fraud in Bulgaria – its occurrence (perpetrators, most popular ways of financial manipulations), detection (red flags other means) and prevention (potential problems and solutions). Moreover, it proposes a model for a way of looking into the problem of financial statement fraud in Bulgaria plus relevant recommendations based on the research results.

ii) Second, it provides the parties in organizations responsible for fraud detection and prevention of financial statement fraud recommendations based the, analysis of the results, on what to improve in order to be more efficient in dealing with the problem.

iii) Third, is the implication to the external organizational environment represented by government and supporting institutions that desire to decrease the risk of financial statement fraud. Issues were identified and factors that can be influenced the most

identified that need to be taken into account in order to successfully prevent financial statement fraud in Bulgaria

iv) Forth, it provides potential topics of interest which researchers can use as the basis for future research in the area of financial statement fraud and fraud in general in Bulgaria.

Limitations of the research

There are also a number of limitations of this research. The first limitation of the research is the questionnaire used – it gives a picture on the problem of financial statement fraud and does not delve into more details in each theme as other methods. However, the scope of research would limit this. Moreover, the research has been conducted only in Bulgaria. Both of these reasons impede the exploratory research from ensuring that the data is comparable and suitable for generalizations in different contexts.

The second limitation concerns the underlying qualitative nature of the research and the nature of the results. All necessary steps have been taken to limit this risk, but enduring total credibility and authenticity of the data and analysis based on it is hard to be achieved due to the variety of factors that could potentially influence the results.

The third limitation is the fact that the research mainly was steered to fraudulent financial reporting fraud rather than on fraud resulting from misappropriation of assets. Moreover, it does not aim to resolve a specific financial statement fraud case/method but rather analyses the overall situation of such fraud in Bulgaria.

Conclusion

Financial statement fraud has been an important focus of research due around the world due to its negative impact on organizations, regulators and other stakeholders. This research has provided analysis on financial statement fraud in the Bulgarian context – its occurrence, detection and prevention – using information gathered from different viewpoints on the problem.

Issues related to parties inside (board of directors, internal audit) and outside (external audit) have been identified and potential solutions presented based on the information collected. The role of the government and supporting institutions in the prevention of financial statement fraud has been emphasized as a major factor of prevention of such fraud. Although that, there are many steps to be taken which will reduce the risk of fraud in the financials the risk of collusion and override of controls (both preventive and detective) still persists.

The research is only the first step out of many towards the successful combating of financial statement fraud in Bulgaria. It establishes the basis which should be used by the relevant parties that play a key role in the prevention of such fraud in order to reduce the risk of this phenomenon occurring by proposing a model and potential solutions to the identified problems.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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ARE THE NEW MEMBER STATES READY TO JOIN THE EURO AREA? A BUSINESS CYCLE PERSPECTIVE

The present research employs a vector autoregression (VAR) approach to assess the degree of business cycle synchronization between the new member states (NMS), which have not adopted the single European currency, and the Euro area (EA). The main fiscal and monetary factors affecting the business cycle coordination between the NMS and the EA have been identified. The causality between the business cycle convergence of the NMS and the EA and the implemented fiscal and monetary policies has been investigated in the short and in the long term. Recommendations and conclusions on the readiness of the NMS to join the EA have been made.
JEL: E32; E42; E50

Introduction

In 2004, 2007 and 2013, thirteen new Member States (NMS) – Poland, the Czech Republic, Hungary, Slovakia, Slovenia, Lithuania, Latvia, Estonia, Malta, Cyprus, Bulgaria, Romania and Croatia, were admitted to the European Union (EU). Seven of these countries – Slovenia, Malta, Cyprus, Slovakia, Estonia, Latvia and Lithuania, have already joined the Euro area (EA). The rest six countries – Poland, the Czech Republic, Hungary, Romania, Bulgaria and Croatia, are also required to introduce the single European currency after meeting certain requirements (the Maastricht convergence criteria). Hence, the question is not whether, but when these six countries will become members of the EA.

When assessing a country's readiness for a EA membership, it is advisable that not only the Maastricht convergence criteria but also the optimal currency area theory criteria be employed. The simultaneous use of the two groups of criteria contributes to combining their strengths, to avoiding their weaknesses and to obtaining a complete and credible assessment of the readiness of the Economic and Monetary Union (EMU) candidate countries.

One of the most important criteria for a currency area's optimality is the similarity between the economic cycles of the participating countries. If these cycles are not synchronized, it is

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likely that the currency union will be affected by asymmetric shocks. Asymmetric shocks make common monetary policy ineffective and pro-cyclical in countries whose cycles are not converged with the aggregate cycle of the currency area. During an economic expansion, common monetary policy will create inflationary „bubbles" and danger of „overheating" the economy, and in a downturn will further exacerbate the recession in countries with divergent economic cycles. It is not recommended that countries whose individual business cycles are not sufficiently correlated with the aggregate currency area cycle join the currency union. One of the reasons for the debt crisis in the EA was the insufficient synchronization of economic cycles of peripheral countries with the aggregate currency union cycle.

The objective of this research is to estimate the degree of readiness of Bulgaria, Romania, the Czech Republic, Poland, Hungary and Croatia for a EA membership from the standpoint of the convergence of their individual business cycles with the aggregate EA cycle. To achieve this goal, the study is structured as follows:

- Review and systematization of the theoretical and empirical studies on the coordination of the economic cycles of the NMS with the EA aggregate cycle (section one);
- Empirical estimation of the degree of convergence of the business cycles of Bulgaria, Romania, the Czech Republic, Poland, Hungary and Croatia with the aggregate EA cycle (section two);
- Identification of the fiscal and monetary factors influencing the convergence of each country's cycle with that of the EA (section three);
- Formulation of inferences and recommendations on the readiness of the NMS to join the EA (conclusion).

In the present study, the methods of vector autoregression (VAR), Hodrick-Prescott filter, and formulation of inferences and recommendations on the readiness of the NMS to join the EA have been applied. Quarterly seasonally adjusted Eurostat data for the period from the first quarter of 2000 to the fourth quarter of 2017 have been used. All indicators have been calculated as a percentage of real Gross Domestic Product (GDP), except for the output gap, which has been calculated as a percentage of potential GDP. Potential output has been estimated using a Hodrick-Prescott filter. The economic cycles of the NMS and the EA have been dated and their phases (expansions and contractions) and positions (inflationary and deflationary gaps) have been determined.

The empirical evaluation of the degree of convergence of the economic cycles of the NMS and the EA has been carried out through three indicators:

- The percentage of coincident business cycle phases of the NMS and the EA;
- The percentage of coincident cyclical positions of the NMS and the EA;
- The correlations between the output gaps of the NMS and output gap of the EA.

All variables have been tested for stationarity. If they had been found to be integrated of the first order, tests have been made for the optimal number of lags and co-integration of

Johansen. The optimal number of lags has been used in the Johansen co-integration test and later in the construction of the vector autoregression. If the Johansen test had demonstrated a co-integration connection between variables, a restricted VAR, also known as Vector Error Correction (VEC), has be applied. Otherwise, an unrestricted VAR has been used.

The short-term cause-and-effect relationships between the variables have been analyzed via the Pairwise Granger Causality Tests, and long-term causal links through the Granger Causality / Block Exogeneity Wald Tests.

Inferences and recommendations have been made on the readiness of the NMS to adopt the Euro. When selecting the explanatory fiscal and monetary variables for the vector autoregression, the specificities of macroeconomic policies under different exchange rate regimes and in a currency union have been taken into consideration.

1. Review and systematization of the theoretical and empirical studies on the coordination of the economic cycles of the NMS with the EA aggregate cycle

There are many studies on the coordination of economic cycles of the NMS with the aggregate EA cycle.

According to Frankel and Rose (1998), patterns of international trade and international business cycles are endogenous. Using data over a period of thirty years and twenty industrialized countries, Franklin and Rose inferred that countries with closer commercial ties had more coordinated economic cycles.

Kutan and Yigit (2005) found evidence of the cyclical convergence of the new member states and the euro area. The authors concluded that the NMS managed to adapt to various shocks in the euro area.

Brada et al. (2005) claimed that the NMS could adopt the euro quickly after joining the European Union (EU), but the benefits of such a step would have been limited.

Fidrmuc and Korhonen (2006) made a meta-analysis of thirty-five publications on the synchronization of business cycles between the NMS and the EA. Some NMS have a high correlation of their cycles with that of the Euro area. The analytical methodologies have a significant impact on the results of the research.

Zapodeanu (2012) concluded that the degree of synchronization of the business cycles between the old Member States on the one hand and Slovenia, Slovakia, Cyprus and Estonia, on the other hand, had increased in the period 1995-2011, but the adoption of the euro had not affected it.

Eickmeier and Breitung (2005) found that there was considerable heterogeneity among the NMS, meaning that for some countries the EA membership would be more expensive than for others. Poland, Slovenia, Hungary and Estonia are more suitable candidates for EA than other NMS.

Rinaldi-Larribe (2008) tried to determine whether there was a sufficiently high correlation between the NMS and the EA business cycles, which would have been a reason for the NMS to quickly adopt the euro.

Stanisic (2013) concluded that there was a strong trend of convergence of the business cycles of the NMS with that of the Euro area.

Dizdarević and Volčjak (2012) argued that the business cycles of most NMS were not synchronized with the EA cycle and that these countries could have experienced some difficulties if they had joined the euro too soon.

Tomic and Demanuele (2017) concluded that Croatia's economic cycle was highly synchronized with the EA cycle.

Todorov (2013) analyzed the nominal convergence of the NMS, their fulfillment of the optimum currency area criteria and the experience of the NMA who had already adopted the euro.

Weimann (2003) inferred that the countries of Central and Eastern Europe (CEE) had a high degree of readiness for an EMU membership.

Damyanov and Stefanov (2010) analyzed the level of synchronization of Bulgaria's business cycle with the EA cycle for the period 1995-2009. During 1995-2002 Bulgaria did not form an optimal currency area with none one of the EMU member states and probably suffered serious negative effects from the introduction of the currency board. In 2002-2009 the synchronization of the Bulgarian economic cycle with the cycle of the EA considerably increased compared to the period 1995-2002.

Christos et al. (2007) found that all NMS had significantly increased the synchronization of their business cycles with that of the Euro area since the early 1990s.

Carmignani (2005) concluded that the degree of synchronization of national business cycles with the Euro area business cycle was weak in all NMS, with the exception of Hungary and Poland.

Matkowski and Prochniak (2004) inferred that the NMS converged with each other with the EA in terms of income levels and cyclical fluctuations.

Daianu et al. (2017) identified problems in the NMS competitiveness in terms of infrastructure, institutional development and innovation. It is recommended that the NMS adopt the euro after reaching a minimum of 75% of the EA average per capita GDP and after carrying out a series of structural reforms.

Van De Coevering (2003) concluded that structural convergence was progressing significantly more slowly than the nominal one and that the euro was not to be adopted before a country had achieved a high degree of structural convergence with the EA.

Frenkel and Nickel (2002) found that there were differences in the shocks and in the process of adapting to them in the EA and in the NMS.

According to Hallett and Richter (2012), there is a high degree of nominal convergence and a low degree of real convergence between the NMS and the EA, which causes a high

degree of synchronization of the short-term fluctuations and a low degree of synchronization of the long-term fluctuations of the economy.

Darvas et al. (2005) found that fiscal convergence (the convergence of the fiscal balance to GDP ratio) increased the synchronization of business cycles among countries both within the EU and the EA.

Rinaldi-Larribe (2008), Daianu et al. (2017), Eickmeier and Breitung (2005), Szeles and Marinescu (2010), Weimann (2003), Damyanov and Stefanov (2010) and Hallett and Richter (2012) argue that the euro should be adopted as soon as possible, while Brada, et al. (2005), Dizdarević and Volčjak (2012), Kontolemis and Ross (2005) and Van de Coevering (2003) claim that the NMS should not rush to enter EMU.

Todorov (2012, 2013 and 2014) and Todorov and Patonov (2012) consider that the adoption of the single European currency should take into account the individual specificities of each country and the changes that occurred in the EMU as a result of the debt crisis.

The reviewed studies may be classified according to different criteria – research methods, territorial scope, results, conclusions and recommendations.

According to research methods, the literature reviewed may be separated into two large groups – theoretical and empirical studies. Rinaldi-Larribe (2008), Van De Coevering (2003) and Todorov (2013) may be included in the group of theoretical research. The investigations of Frankel and Rose (1998), Kutan and Yigit (2005), Fidrmuc and Korhonen (2006), Zapodeanu (2012), Stanisic (2013), Dizdarević and Volčjak (2012), Matkowski and Prochniak (2004), Tomić and Demanuele (2017), Damyanov and Stefanov (2010), Christos et al. (2007), Darvas et al. (2005), Carmignani (2005), Daianu, et al. (2017), Frenkel and Nickel (2002) and Hallett and Richter (2012) can be considered empirical.

According to territorial scope, the reviewed research can be classified as studies on one country and studies on more than one country. The first group includes the investigations of Tomić and Demanuele (2017) and Damyanov and Stefanov (2010). The authors, who analyze more than one country, are Frankel and Rose (1998), Kutan and Yigit (2005), Fidrmuc and Korhonen (2006), Zapodeanu (2012), Stanisic (2013), Dizdarević and Volčjak (2012), Matkowski and Prochniak (2004), Christos et al. (2007), Darvas et al. (2005), Carmignani (2005), Daianu, et al. (2017), Van de Coevering (2003), Frenkel and Nickel (2002) and Hallett and Richter (2012).

According to their results, studies can be grouped into:

- Literature, which find a high degree of synchronization of the NMS business cycles with that of EA. Here are included Frankel and Rose (1998), Kutan and Yigit (2005), Fidrmuc and Korhonen (2006), Zapodeanu (2012), Stanisic (2013), Dizdarević and Volčjak (2012), Matkowski and Prochniak (2004), Tomić and Demanuele (2017), Damyanov and Stefanov (2010), Christos et al. (2007) and Darvas et al. (2005);
- Research, which show a low degree of convergence of the economic cycles of the NMS with the aggregate cycle of the EA – Carmignani (2005), Daianu et al. (2017), Van de Coevering (2003), Frenkel and Nickel (2002) and Hallett and Richter (2012).

According to the conclusions and recommendations they make, the reviewed literature sources can be divided into:

- Studies, which recommend that the NMS adopt the euro as soon as possible – Rinaldi-Larribe (2008), Daianu et al. (2017), Eickmeier and Breitung (2005), Szeles and Marinescu (2010), Weimann (2003), Damyanov and Stefanov (2010) and Hallett and Richter (2012);
- Analyzes according to which the NMS should not rush to enter the EMU – Brada et al. (2005), Dizdarević and Volčjak (2012), Kontolemis and Ross (2005) and Van de Coevering (2003);
- Research stating that the adoption of the single European currency should take into account the individual specificities of each country and the changes that occurred in the EMU as a result of the debt crisis – Todorov (2012, 2013 and 2014) and Todorov and Patonov (2012).

It should be considered that the results and the conclusions of the reviewed studies might have been influenced by their period of investigation, territorial scope and research methodology. For example, recent research found a higher degree of business cycle convergence between the NMS and the EA than earlier investigations, which may be due to the intensification of the commercial and financial relations between the NMS and the EA countries in the course of time. The empirical studies employ either least squares (LS) or vector autoregression (VAR) methodologies. This research has chosen a VAR approach because of the opportunity to explore the causal links between variables in short and in long run.

2. Empirical estimation of the degree of convergence of the NMS business cycles with the aggregate EA cycle

The degree of convergence of the NMS economic cycles with the EA aggregate cycle is empirically estimated by three indicators: percentage of coincident business cycle phases, percentage of coincident cyclical positions and correlation between the output gaps of the NMS and the EA. The analysis of the dynamics of the output gaps of the NMS and EA helps to determine the turning points (peaks and troughs), phases (contractions and expansions) and positions (inflationary and deflationary gaps) in their economic cycles. The dynamics of the GDP gaps of each NMS and the EA can be seen on figures in the Appendix. When determining the turning points, the rule is that there must be at least three and at most eight years between two peaks (two troughs). A phase from a peak to a trough is a contraction and a phase from a trough to a peak is an expansion. Positive output gaps are inflationary, and negative – deflationary. The turning points of the economic cycles of the NMS and the EA are shown in tables in the Appendix.

According to the indicator "percentage of coincident phases", the national cycles of Bulgaria, the Czech Republic and Hungary converged to the aggregate EA cycle, and those of Romania, Poland and Croatia diverged from it (see Table 1). For the first three countries, the percentage of coincident phases with EA increased in the period 2009-2017 compared

to the period 2000-2008. The second three countries demonstrate the opposite trend – a decrease in the percentage of coincident phases with EA in 2009-2017 compared to 2000-2008.

The indicator "percentage of coincident cyclical positions" shows a convergence of the aggregate currency union cycle with the individual cycles of all NMS except for Romania (see Table 2). For Romania, the percentage of coincident cyclical positions with the EA was lower in the 2009-2017 period than in 2000-2008.

Over the period 2009-2017, there was an increase in the correlation of the output gaps of Bulgaria, the Czech Republic, Poland and Hungary with the EA output gap compared to the period 2000-2008. The opposite trend was observed in Romania and Croatia, whose output gaps were less correlated with the EA in the period 2009-2017 than in the period 2000-2008 (see Table 3).

Table 1

Percentage of coincident phases in the business cycles of the NMS and the EA

Year	2000 – 2008	2009 – 2017
Bulgaria	62,5	84,4
Romania	69,4	44,4
Czech Republic	83,3	86,1
Poland	87,5	78,1
Hungary	61,1	86,1
Croatia	94,4	72,2

Source: Own calculations based on Eurostat data

Table 2

Percentage of coincident positions in the business cycles of the NMS and the EA

Year	2000 – 2008	2009 – 2017
Bulgaria	67,5	87,5
Romania	66,7	55,6
Czech Republic	75	94,4
Poland	75	78,1
Hungary	58,3	72,2
Croatia	61,1	75

Source: Own calculations based on Eurostat data

Table 3

Correlation between the output gaps of the NMS and the EA

Year	2000 – 2008	2009 – 2017
Bulgaria	0,60	0,86
Romania	0,63	0,07
Czech Republic	0,75	0,87
Poland	0,64	0,86
Hungary	0,60	0,73
Croatia	0,72	0,62

Source: Own calculations based on Eurostat data

The aggregation of the results from the three indicators allows the NMS to be ranked according to the degree of synchronization of their business cycles with that of the EA. The economic cycle of the Czech Republic is the most synchronized with the currency union cycle, followed by the cycles of Bulgaria, Poland, Hungary, Croatia and Romania. It can be inferred that the Czech Republic, Bulgaria, Poland and Hungary have a sufficiently high degree of convergence of their business cycles with the EA for a successful membership in the currency union. The cycles of Croatia and Romania are not yet sufficiently synchronized with the EA cycle to allow a trouble-free adoption of the single European currency.

The strong synchronization of the economic cycles of the Czech Republic, Poland and Hungary with that of the EA can be explained by the high degree of real and structural convergence of these states with the countries of the monetary union. Nominal convergence (the fulfillment of the Maastricht criteria) and the peg of the Bulgarian lev to the euro are the main contributors to the high degree of similarity between the business cycles of Bulgaria and the EA. After the global crisis, the economic cycles of Croatia (according to two of the three indicators used) and Romania (according to all indicators) has diverged from the EA. In Croatia, divergence can be explained by the high level of government debt, the need for large-scale structural reforms in the economy and the existence of excessive macroeconomic imbalances, and for Romania – with the large fluctuations of the euro-leu exchange rates, the non-compliance with the convergence criterion for long-term interest rates and the political instability in the country (ECB Convergence Report, 2018).

3. Fiscal and monetary factors influencing the convergence of the NMS cycles with that of the EA

3.1. Stationarity, optimal lag length and estimation of the VAR models

The group unit root tests of Im, Pesaran and Shin, Dickey-Fuller and Phillips-Perron showed that the variables in the VAR model for each NMS were stationary (integrated of order zero), which required the application of an unrestricted vector autoregression (see Table 4).

Table 4

Group unit root tests of the variables in the VAR models of the separate NMS – probabilities

NMS	Im, Pesaran and Shin W-stat	ADF – Fisher Chi-square	PP – Fisher Chi-square
Null: Unit root (assumes individual unit root process)			
Bulgaria	0,0000	0,0000	0,0000
Romania	0,0000	0,0000	0,0000
Czech Republic	0,0000	0,0000	0,0000
Poland	0,0000	0,0000	0,0000
Hungary	0,0000	0,0000	0,0000
Croatia	0,0000	0,0000	0,0000

Source: Prepared by the author.

The optimal lag length in the VAR model for each country has been selected on the basis of the Phillips-Perron criterion. For Bulgaria, the optimal number of lags is five, for Romania – three, for the Czech Republic – four, for Poland – six and for Hungary and Croatia – two (see Table 5).

Table 5

Optimal number of lags in the VAR models for the separate NMS according to the Phillips-Perron criterion

NMS	Optimal number of lags
Bulgaria	5
Romania	3
Czech Republic	4
Poland	6
Hungary	2
Croatia	2

Source: Prepared by the author.

3.1.1. Bulgaria

The fiscal and monetary determinants of the convergence of the Bulgarian cycle with the EA's cycle have been identified by a vector autoregression with the following variables: **BCS** – difference between the output gaps of Bulgaria and the EA; **FISC_BAL_DIF** – difference between the fiscal balances of Bulgaria and the EA; **FOREX_RES_BG** – foreign exchange reserves of Bulgaria (total assets of the Issue Department of the Bulgarian National Bank); **GOV_DEBT_DIF** – difference between government debt in Bulgaria and the EA; **GOV_DEP_BG** – government deposit on the balance sheet of the Issue Department of the Bulgarian National Bank; **INT_RATE_EA** – interest rate on the main refinancing operations of the European Central Bank; **MRR_DIF** – difference between minimum required reserve ratios in Bulgaria and the EA. The target variable is **BCS.**

The equation for the target variable **BCS** in the VAR model after the step-by-step elimination of the statistically insignificant variables is

(1) BCS = 0.05*FICS_BAL_DIF(-1) + 0.07*FICS_BAL_DIF(-2) + 0.06*FICS_BAL_DIF(-3) + 0.06*FICS_BAL_DIF(-5) + 0.03*FOREX_RES_BG(-1) – 0.03*FOREX_RES_BG(-3) + 0.03*FOREX_RES_BG(-4) – 0.04*FOREX_RES_BG(-5) + 0.01*GOV_DEBT_DIF(-5) + 0.03*GOV_DEP_BG(-3) + 0.02*GOV_DEP_BG(-5) + 0.66*INT_RATE_EA(-1) – 0.94*INT_RATE_EA(-2) + 1.64*INT_RATE_EA(-3) – 1.07*INT_RATE_EA(-4) + 0.29*MRR_DIF(-2) + 0.34*MRR_DIF(-3) + 0.27*MRR_DIF(-5) – 8.01

The convergence of the economic cycle of Bulgaria with that of the EA is influenced by the lagged values of the following variables (see Table 6): difference between the fiscal balances in Bulgaria and the EA; foreign exchange reserves of Bulgaria; difference between government debt in Bulgaria and the EA; government deposit on the balance sheet of the Issue Department of the Bulgarian National Bank; interest rate on the main refinancing operations of the European Central Bank; difference between minimum required reserve ratios in Bulgaria and the EA. The empirical results in Table 1 confirm the importance of the Maastricht convergence criteria of fiscal deficit, government debt and interest rates for

the business cycle synchronization between Bulgaria and the EA. They also outline the options of macroeconomic management to influence the similarity of Bulgaria's cycle with that of the EA through traditional macroeconomic instruments (fiscal balance, minimum required reserve ratio) and through the specific features of the Bulgarian currency board arrangement (possibilities for discretionary monetary policy through the government deposit on the balance sheet of the Issue Department of the BNB).

Table 6

Standardized regression coefficients and probabilities in Equation (1)

Variable	Standardized regression coefficient	Probability
FICS_BAL_DIF(-1)	0.158398	0.0019
FICS_BAL_DIF(-2)	0.252337	0.0000
FICS_BAL_DIF(-3)	0.211233	0.0002
FICS_BAL_DIF(-5)	0.197884	0.0001
FOREX_RES_BG(-1)	1.174900	0.0000
FOREX_RES_BG(-3)	-1.129333	0.0075
FOREX_RES_BG(-4)	1.086920	0.0056
FOREX_RES_BG(-5)	-1.395361	0.0000
GOV_DEBT_DIF(-5)	0.249715	0.0151
GOV_DEP_BG(-3)	0.289618	0.0029
GOV_DEP_BG(-5)	0.160607	0.0384
INT_RATE_EA(-1)	0.869148	0.0063
INT_RATE_EA(-2)	-1.231307	0.0338
INT_RATE_EA(-3)	2.146101	0.0002
INT_RATE_EA(-4)	-1.392275	0.0000
MRR_DIF(-2)	0.350934	0.0090
MRR_DIF(-3)	0.417689	0.0075
MRR_DIF(-5)	0.340882	0.0113

Source: Prepared by the author

3.1.2. Romania

The fiscal and monetary determinants of the convergence of the Romanian cycle with that of the EA have been identified by a vector autoregression involving the following variables: **BCS** – the difference between the output gaps of Romania and the EA; **FISC_BAL_DIF** – difference between fiscal balances in Romania and EA; **GOV_DEBT_DIF** – difference between government debt in Romania and the EA; **INT_RATE_DIF** – difference between the base interest rates of the National Bank of Romania and the European Central Bank; **MRR_DIF** – difference between minimum required reserve ratios in Romania and the EA; **M3_DIF** – difference between the growth rates of the M3 monetary aggregate in Romania and the EA; **ER** – percentage change in the euro-leu exchange rate on the previous period. The target variable is **BCS.** Fiscal and debt variables have been calculated as a percentage of gross domestic product, but the monetary aggregate **M3** and the exchange rate – as a rate of change on the previous period.

The equation for the target variable **BCS** in the VAR model after the step-by-step elimination of the statistically insignificant variables is

(2) BCS = 0.85*BCS(-1) – 0.23*BCS(-2) + 0.15*ER(-2) + 0.23*GOV_DEBT_DIF(-1) – 0.58*GOV_DEBT_DIF(-2) + 0.47*GOV_DEBT_DIF(-3) – 0.18*INT_RATE_DIF(-3) + 0.16*M3_DIF(-2) + 0.10*MRR_DIF(-3) + 5.61

Table 7

Standardized regression coefficients and probabilities in Equation (2)

Variable	Standardized regression coefficient	Probability
BCS(-1)	0.851073	0.0000
BCS(-2)	-0.227286	0.0606
ER(-2)	0.226859	0.0029
GOV_DEBT_DIF(-1)	0.365158	0.0631
GOV_DEBT_DIF(-2)	-0.979458	0.0009
GOV_DEBT_DIF(-3)	0.823842	0.0003
INT_RATE_DIF(-3)	-0.563853	0.0004
M3_DIF(-2)	0.298441	0.0010
MRR_DIF(-3)	0.181820	0.0689

Source: Prepared by the author

The business cycle synchronization between Romania and the EA is affected by the lagged values of the following explanatory variables: change of the euro-leu exchange rate; difference between government debt in Romania and the EA; difference between the base interest rates in Romania and the EA; difference between money supply growth in Romania and the EA (see Table 7). The validity of the Maastricht criteria for the exchange rate, government debt, interest rates and inflation in the case of Romania has been proven (the difference between money supply growth rates can be assumed as an approximation of the inflation differential). Romanian macroeconomic strategists can impact the convergence of the Romanian and EA cycles through the exchange rate and monetary policy (the base interest rate and the minimum required reserve ratio). The empirical results for Romania has not confirmed the hypothesis that under a floating exchange rate monetary policy is more effective than fiscal policy (the standardized coefficients before the government debt differences are higher in absolute terms than the standardized coefficients before the interest differential and the difference in the MRR).

3.1.3. Czech Republic

The fiscal and monetary determinants of the business cycle convergence between the Czech Republic and the EA have been identified by a vector autoregression with the following variables: **BCS** – difference between the Czech and EA output gaps; **FISC_BAL_DIF** – difference between fiscal balances in the Czech Republic and the EA; **GOV_DEBT_DIF** – difference between government debt in the Czech Republic and the EA; **INT_RATE_DIF** – difference between base interest rates of the Czech National Bank and the European Central Bank; **M3_DIF** – difference between the growth rates of the M3 monetary aggregate in the Czech Republic and the EA; **ER** – percentage change in the euro-krone exchange rate on the previous period. The target variable is **BCS**. Fiscal and debt variables

have been calculated as a percentage of gross domestic product but the monetary aggregate M3 and the exchange rate – as a rate of change on the previous period.

The equation for the target variable **BCS** in the VAR model after the step-by-step elimination of the statistically insignificant variables is

(3) BCS = 0.66*BCS(-1) – 0.13*ER(-1) – 0.07*ER(-3) – 0.03*GOV_DEBT_DIF(-2) – 0.33*INT_RATE_DIF(-2) – 1.38

Table 8

Standardized regression coefficients and probabilities in Equation (3)

Variable	Standardized regression coefficient	Probability
BCS(-1)	0.680842	0.0000
ER(-1)	-0.283443	0.0001
ER(-3)	-0.165631	0.0095
GOV_DEBT_DIF(-2)	-0.119371	0.0987
INT_RATE_DIF(-2)	-0.177824	0.0382

Source: Prepared by the author

The convergence of the business cycle of the Czech Republic and the EA is impacted by the difference between the Czech government debt and the EA government debt, the difference between the base interest rates in the Czech Republic and the EA, and the fluctuations of the euro-krone exchange rate (see Table 8). The importance of the Maastricht criteria for the exchange rate, government debt and interest rates has been proven. In the case of the Czech Republic, the hypothesis of a higher efficiency of monetary policy compared to fiscal policy under a floating exchange rate has been confirmed empirically (the standardized coefficient before the interest differential is higher in absolute value than the standardized coefficient before the government debt difference).

3.1.4. Poland

The fiscal and monetary determinants of the convergence of the Polish cycle with that of the EA have been identified by a vector autoregression involving the following variables: **BCS** – difference between Polish and EA's output gaps; **FISC_BAL_DIF** – difference between fiscal balances in Poland and EA; **GOV_DEBT_DIF** – difference between government debt in Poland and the EA; **INT_RATE_DIF** – difference between base interest rates of the National Bank of Poland and the European Central Bank; **MRR_DIF** – difference between minimum required reserve ratios in Poland and the EA; **M3_DIF** – difference between the rate of growth of the M3 monetary aggregate in Poland and the EA; **ER** – percentage change in the euro-zloty exchange rate on the previous period. The target variable is **BCS**. Fiscal and debt variables have been calculated as a percentage of the gross domestic product but the monetary aggregate M3 and the exchange rate – as a rate of change on the previous period.

The equation for the target variable **BCS** in the VAR model after the step-by-step elimination of the statistically insignificant variables is

(4) BCS = 0.13*ER(-1) + 0.09*ER(-3) + 0.15*FISC_BAL_DIF(-1) + 0.30*INT_RATE_DIF(-1) – 1.32

Table 9

Standardized regression coefficients and probabilities in Equation (4)

Variable	Standardized regression coefficient	Probability
ER(-1)	0.575664	0.0000
ER(-3)	0.389100	0.0001
FISC_BAL_DIF(-1)	0.180623	0.0490
INT_RATE_DIF(-1)	0.370337	0.0001

Source: Prepared by the author.

The similarity of the economic cycle of Poland with that of the EA is affected by the lagged values of the difference between fiscal balances in Poland and the EA, the difference between base interest rates in Poland and the EA and the change of the euro-zloty exchange rate (see Table 9). The validity of the Maastricht criteria for the exchange rate, budget deficit and interest rates has been proven. In the case of Poland, the hypothesis that, under a floating exchange rate, monetary policy is more effective than fiscal policy has been empirically confirmed (the standardized coefficient before the interest rate differential is higher in absolute value than the standardized coefficient in front of the difference in fiscal balances).

3.1.5. Hungary

The fiscal and monetary determinants of the convergence of the Hungarian cycle with that of the EA have been identified by a vector autoregression with the following variables: **BCS** – difference between Hungarian and EA's output gaps; **FISC_BAL_DIF** – difference between fiscal balances in Hungary and the EA; **GOV_DEBT_DIF** – difference between government debt in Hungary and the EA; **INT_RATE_DIF** – difference between base interest rates of the National Bank of Hungary and the European Central Bank; **MRR_DIF** – difference between minimum required reserve ratios in Hungary and the EA; **M3_DIF** – difference between the rate of growth of the M3 monetary aggregate in Hungary and the EA; **ER** – percentage change in the euro-forint exchange rate on the previous period. **BCS** is the target variable. The fiscal and debt variables are calculated as a percentage of GDP, but the monetary aggregate **M3** and the exchange rate – as a rate of growth on the previous period. The target variable is **BCS**. Fiscal and debt variables have been calculated as a percentage of gross domestic product but the monetary aggregate M3 and the exchange rate – as a rate of change on the previous period.

The equation for the target variable **BCS** in the VAR model after the step-by-step elimination of the statistically insignificant variables is

(5) BCS = 0.72*BCS(-1) + 0.06*ER(-2) + 0.06*GOV_DEBT_DIF(-1) – 0.08*GOV_DEBT_DIF(-2) – 0.36*INT_RATE_DIF(-1) + 0.35*INT_RATE_DIF(-2) + 0.12*MRR_DIF(-1) – 0.34

Table 10

Standardized regression coefficients and probabilities in Equation (5)

Variable	Standardized regression coefficient	Probability
BCS(-1)	0.730689	0.0000
ER(-2)	0.181972	0.0149
GOV_DEBT_DIF(-1)	0.290923	0.0683
GOV_DEBT_DIF(-2)	-0.389613	0.0190
INT_RATE_DIF(-1)	-0.736442	0.0010
INT_RATE_DIF(-2)	0.716736	0.0008
MRR_DIF(-1)	0.139803	0.0901

Source: Prepared by the author

The convergence of Hungary's economic cycle with that of the EA is impacted by lagged values of the difference between the government debt in Hungary and the EA, the difference between the base interest rates in Hungary and the EA and the change in the euro-forint exchange rate. The validity of the Maastricht criteria for the exchange rate, government debt and interest rates has been confirmed. In the case of Hungary, an empirical confirmation has found the hypothesis that monetary policy is more effective than fiscal policy under a floating exchange rate (the standardized coefficients in front of the interest rate differential are higher in absolute terms than the standardized coefficients in front of the difference in government debt).

3.1.6. Croatia

The fiscal and monetary determinants of the convergence of the Croatian cycle with that of the EA have been identified by a vector autoregression with the following variables: **BCS** – difference between Croatian and EA's output gaps; **FISC_BAL_DIF** – difference between fiscal balances in Croatia and the EA; **GOV_DEBT_DIF** – difference between government debt in Croatia and the EA; **INT_RATE_DIF** – difference between base interest rates of the National Bank of Croatia and the European Central Bank; **MRR_DIF** – difference between minimum required reserve ratios in Croatia and the EA; **M3_DIF** – difference between the rates of growth of the M3 monetary aggregate in Croatia and the EA; **ER** – percentage change in the euro-forint exchange rate on the previous period. The target variable is **BCS**. Fiscal and debt variables have been calculated as a percentage of gross domestic product but the monetary aggregate M3 and the exchange rate – as a rate of change on the previous period.

The equation for the target variable **BCS** in the VAR model after the step-by-step elimination of the statistically insignificant variables is

(6) BCS = 0.45*BCS(-1) – 0.04*GOV_DEBT_DIF(-2) – 0.36*INT_RATE_DIF(-2) + 1.12

Table 11

Standardized regression coefficients and probabilities in Equation (6)

Variable	Standardized regression coefficient	Probability
BCS(-1)	0.453001	0.0000
GOV_DEBT_DIF(-2)	-0.318037	0.0030
INT_RATE_DIF(-2)	-0.543040	0.0000

Source: Prepared by the author

The similarity of the economic cycles of Croatia and the EA is influenced by the difference between government debt in Croatia and the EA and the difference between base interest rates in Croatia and the EA. The importance of interest rate and debt convergence for the synchronization of the Croatian and EA's cycles has been proven. The absolute value of the standardized coefficient in front of the interest rate differential is higher than the absolute value of the standardized coefficient in front of the debt differential, which supports the hypothesis of more efficient monetary than fiscal policy under a floating exchange rate.

3.2. Diagnostics of the equations for the target variable BCS in the VAR models

The coefficients of determination of the target equations for individual NMS vary from 0.58 for Poland to 0.95 for Bulgaria (see Table 12). They show what percentage of the change of the dependent variable **(BCS)** can be explained by changes in the independent variables in the target equations.

Table 12

Coefficients of determination and probabilities of the F-statistic of the target equations for individual NMS

NMS	Coefficient of determination	Probability of the F-statistic
Bulgaria	0.954556	0,000000
Romania	0.796991	0,000000
Czech Republic	0.834059	0,000000
Poland	0.584322	0,000000
Hungary	0.791661	0,000000
Croatia	0.686437	0,000000

Source: Prepared by the author

The probability of the F-statistic (0.00) for all NMS gives reason to accept the alternative hypothesis of adequacy of the models used (see Table 12). However, it should be specified that this does not mean that the models are the best possible, but simply reflect adequately the relationship between the dependent and the independent variables.

The probability of the Jarque-Bera statistics supports the null hypothesis of a normal distribution of residuals in the target equations for Bulgaria, Romania, the Czech Republic and Croatia. In the target equations for Poland and Hungary, the alternative hypothesis for the absence of normal distribution of residuals is accepted.

Table 13

Tests for normal distribution of residuals in the target equations for individual NMS

NMS	Jarque-Bera Probability
Bulgaria	0,598912
Romania	0,464630
Czech Republic	0,637960
Poland	0,000007
Hungary	0,000395
Croatia	0,813933

Source: Prepared by the author

Table 14

Serial correlation tests on the residuals in the target equations for individual NMS

NMS	Probability Chi-Square
Bulgaria	0.0361
Romania	0.4891
Czech Republic	0.7538
Poland	0.4126
Hungary	0.0891
Croatia	0.1672

Source: Prepared by the author

The null hypothesis for the absence of serial correlation of residuals is confirmed at a critical level of significance of 10% for the target equations of Romania, the Czech Republic, Poland and Croatia, at a critical level of 5% for the target equation of Hungary and at a critical level of 1% for the target equation of Bulgaria (see Table 14).

Table 15

Heteroscedasticity tests on the residuals of the target equations for individual NMS

NMS	Probability Chi-Square
Bulgaria	0.6539
Romania	0.0750
Czech Republic	0.4957
Poland	0.6425
Hungary	0.3801
Croatia	0.0567

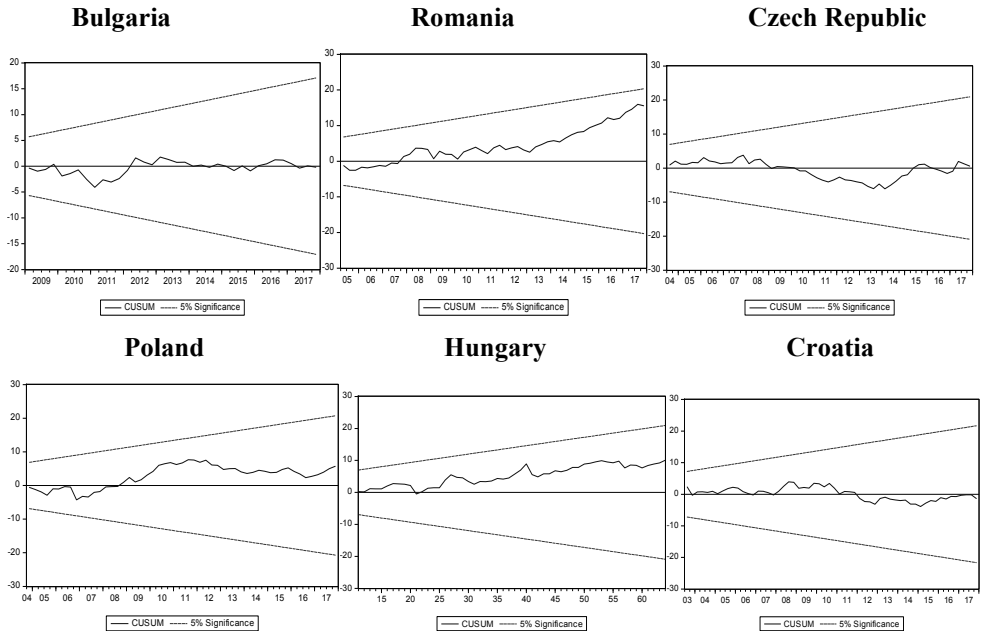
Source: Prepared by the author

The results of the heteroscedasticity tests on the residuals in the target equations of Bulgaria, the Czech Republic, Poland and Hungary support the null hypothesis of lack of heteroscedasticity at a critical level of significance of 10%. For the target equations of Romania and Croatia, the null hypothesis for the absence of heteroscedasticity of the residuals is accepted at a critical level of significance of 5%.

The target equations of all NMS are dynamically stable as actual CUSUM values are within the confidence interval at a 5% level of significance (see Figure 1).

Figure 1

Tests for dynamic stability of the target equations for individual NMS (CUSUM)



Source: Prepared by the author

The results of the Pairwise Granger Causality Tests show that in the short term at a critical level of significance of 10%:

- In Bulgaria there are causal links from the difference between the fiscal balances of Bulgaria and the EA, the foreign exchange reserves of Bulgaria, the government deposit in the Issue Department of the BNB, the base interest rate in the EA and the difference between the minimum required reserve ratios in Bulgaria and the EA to **BCS**;
- For Romania, no independent variables cause **BCS**;
- For the Czech Republic there is causality from the euro-krone exchange rate to **BCS**;
- For Poland, the euro-zloty exchange rate causes **BCS**;
- For Hungary, there are causal links from the difference between the government debt in Hungarian and the EA and the difference between the base interest rates in Hungary and the EA to **BCS**;

- For Croatia, there is a causality from the difference between the base interest rates in Croatia and the EA to **BCS**.

The results of the Granger Causality / Block Exogeneity Wald Tests show that in the long run at a critical level of significance of 10%:

- For Bulgaria, there are causal links from the difference between fiscal balances in Bulgaria and the EA, the foreign exchange reserves of Bulgaria, the base interest rate in the EA and the difference between the between the minimum required reserve ratios in Bulgaria and the EA to **BCS**;
- For Romania, the difference between the base interest rates in Romania and the EA and the difference between the money supply growth rates in Romania and the EA cause **BCS**;
- There is causality in the Czech Republic from the euro-krone exchange rate to **BCS**;
- For Poland there are no causal links from the independent variables to **BCS**;
- For Hungary, the difference between the base interest rates in Hungary and the EA, the difference between government debt in Hungary and the EA and the change in the euro-forint exchange rate cause **BCS**;
- For Croatia there is causality from the difference between the base interest rates in Croatia and the EA to **BCS**.

Conclusions

The empirical estimation of the degree of convergence of the NMS economic cycles with the EA aggregate cycle by three indicators – percentage of coincident cyclical phases, percentage of coincident cyclical positions, and correlations between output gaps allows NMS to be ranked according to the degree of synchronization of their business cycles with the monetary union as follows: Czech Republic, Bulgaria, Poland, Hungary, Croatia, Romania. The top four countries in this ranking – the Czech Republic, Bulgaria, Poland and Hungary – have a high degree of business cycle similarity with EA, which would allow them to successfully join the EMU. The Czech Republic, Poland and Hungary are excellent in the real, and Bulgaria in the nominal convergence with the EA, so the close proximity of the four countries' cycles to that of EMU is not surprising. Fixing the Bulgarian lev to the euro has also contributed to increasing the similarities between the national cycle of Bulgaria and the aggregate cycle of the EA. Under a fixed exchange rate, the convergence of business cycles is facilitated because the economic effects from the Euro area directly flow into Bulgaria through different channels – interest rates, foreign direct investment, etc. The nominal exchange rate cannot be used as an absorber of shocks from the EA and these shocks are absorbed by other macroeconomic variables. The smaller the fluctuations in the exchange rate, the higher the synchronization of economic cycles.

Croatia and Romania have not yet achieved a sufficiently high degree of convergence of their business cycles with the aggregate EA cycle which would not allow a smooth

adoption of the single European currency. Moreover, the cycles of the two countries have reduced their likeness to the EMU cycle after the global crisis (2009-2017) in comparison with the pre-crisis period (2000-2008) – Croatia according to two, and Romania according to all three indicators used to assess the similarity of economic cycles. In Croatia, the high indebtedness of the government, the need for large-scale structural reforms in the economy and the presence of excessive macroeconomic imbalances contribute to the divergence of the business cycle from that of the EA. In Romania divergence from the EA business cycle can be attributed to the volatility of the euro-leu exchange rate, the lack of interest rate convergence and the political instability in the country (ECB Convergence Report, 2018).

The empirical analysis in section three confirms the importance of the fulfillment of the Maastricht criteria for the convergence of the economic cycles of the NMS with that of the EA. The hypothesis of higher efficiency of the monetary policy compared to fiscal policy under a floating exchange rate is confirmed in the cases of Poland, the Czech Republic, Hungary and Croatia, but not in the case of Romania. Possible reasons for the rejection of this hypothesis in Romania are the serious institutional changes and the political instability in recent years that may create structural breaks in time series and alter the nature of the links between macroeconomic variables.

It should be considered that the above-stated conclusions are based solely on the criterion „degree of business cycle synchronization" of the optimum currency area theory. The present study does not claim to be comprehensive as it does not include the remaining criteria of the optimum currency area theory, the compliance with the Maastricht convergence criteria and the requirements imposed in recent years as a result of the EA debt crisis (lack of excessive macroeconomic imbalances and a Banking Union membership). In addition to the above-mentioned economic criteria, there are also political motives that play an important role in deciding whether a country to join a currency union or not. Bulgaria explicitly declared its intention to adopt the single European currency, but this declaration was reluctantly accepted in Frankfurt and Brussels. For the time being, Poland, the Czech Republic, Hungary, Croatia and Romania do not want to give up their autonomous monetary and exchange rate policies and are in not in a hurry to join ERM II and the EA.

This study has the following contributions:

- A new combination of indicators has been employed to empirically estimate the degree of similarity between the business cycles of the NMS and the EA;
- The NMS has been ranked according to the degree of convergence of their economic cycles with that of the EA. It has been found out which of them are ready to adopt the euro on the basis of business cycle synchronization with the EA;
- The importance of the Maastricht criteria for the business cycle similarity between the NMS and the EA has been confirmed by including approximations of the Maastricht criteria as explanatory variables in the VAR models;
- The hypothesis that monetary policy is more effective than fiscal policy under a floating exchange rate has been tested for five NMS – the Czech Republic, Poland, Hungary, Romania and Croatia.

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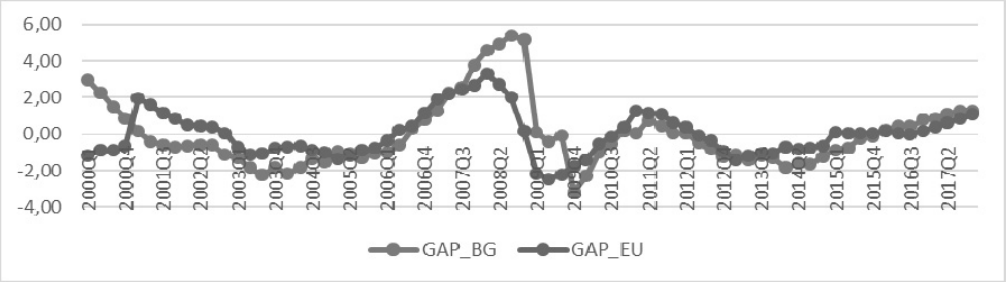
Appendix

Figure A1

Dynamics of the output gaps of Bulgaria and the EA



Source: Own calculations based on Eurostat data

Table A1

Turning points of the business cycle of Bulgaria

Peaks	2000 – Quarter 1	2008 – Quarter 3	2011 – Quarter 2	2017 – Quarter 4
Troughs	2003 – Quarter 3	2009 – Quarter 4	2014 – Quarter 1	

Source: Own calculations based on Eurostat data

Table A2

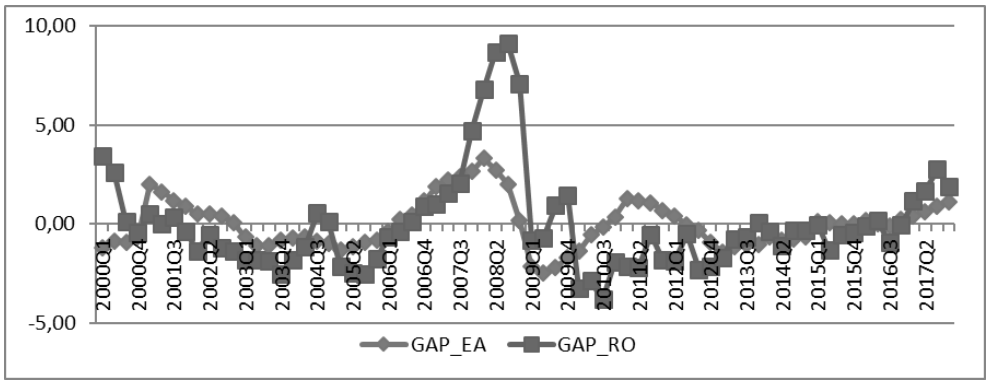
Turning points of the business cycle of the EA

Peaks	2001 – Quarter 1	2008 – Quarter 1	2011 – Quarter 1	2017 – Quarter 4
Troughs	2000 – Quarter 1	2005 – Quarter 1	2009 – Quarter 2	2013 – Quarter 1

Source: Own calculations based on Eurostat data

Figure A2

Dynamics of the output gaps of Romania and the EA



Source: Own calculations based on Eurostat data

Table A3

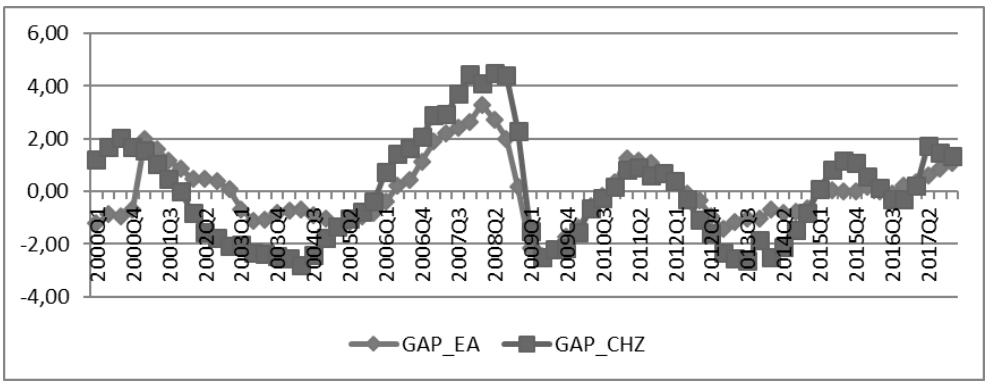
Turning points of the business cycle of Romania

Peaks	2000 – Quarter 4	2008 – Quarter 2	2011 – Quarter 3	2017 – Quarter 3
Troughs	2005 – Quarter 1	2009 – Quarter 3	2014 – Quarter 3	

Source: Own calculations based on Eurostat data

Figure A3

Dynamics of the output gaps of the Czech Republic and the EA



Source: Own calculations based on Eurostat data

Table A4

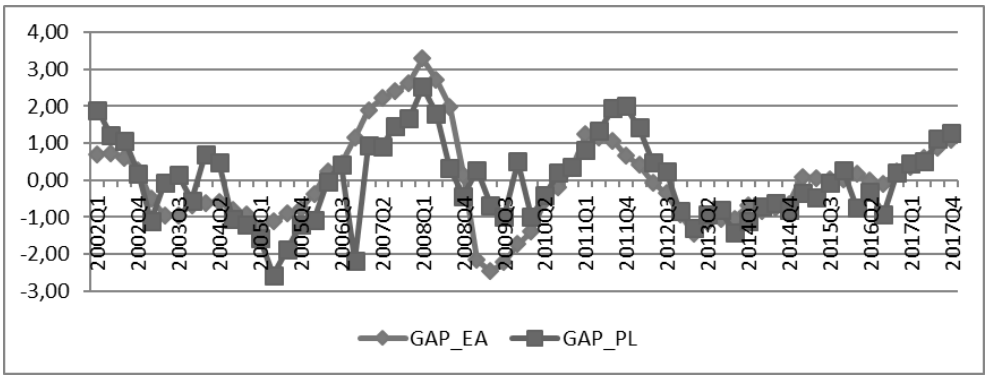
Turning points of the business cycle of the Czech Republic

Peaks	2000 – Quarter 3	2008 – Quarter 2	2011 – Quarter 2	2017 – Quarter 2
Troughs	2004 – Quarter 2	2009 – Quarter 2	2013 – Quarter 3	

Source: Own calculations based on Eurostat data

Figure A4

Dynamics of the output gaps of Poland and the EA



Source: Own calculations based on Eurostat data

Table A5

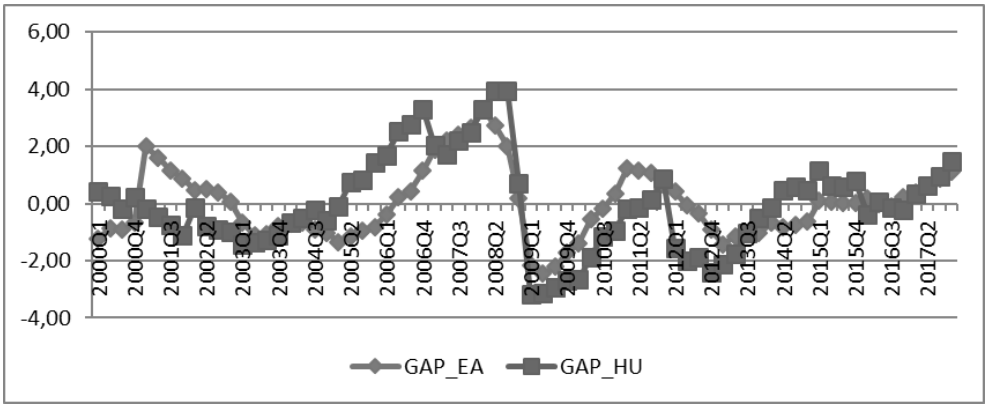
Turning points of the business cycle of Poland

Peaks	2002 – Quarter 1	2008 – Quarter 1	2011 – Quarter 4	2017 – Quarter 4
Troughs	2005 – Quarter 2	2010 – Quarter 1	2013 – Quarter 4	

Source: Own calculations based on Eurostat data

Figure A5

Dynamics of the output gaps of Hungary and the EA



Source: Own calculations based on Eurostat data

Table A6

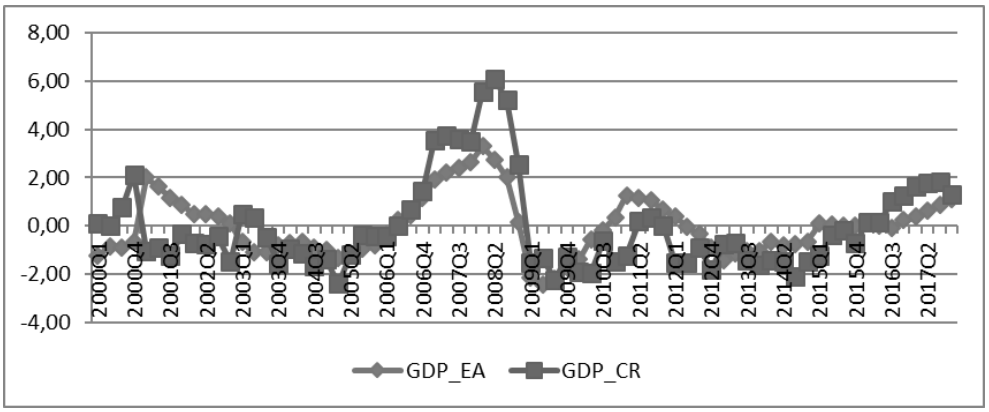
Turning points of the business cycle of Hungary

Peaks	2000 – Quarter 1	2008 – Quarter 3	2011 – Quarter 4	2017 – Quarter 4
Troughs	2003 – Quarter 1	2009 – Quarter 1	2012 – Quarter 4	

Source: Own calculations based on Eurostat data

Figure A6

Dynamics of the output gaps of Croatia and the EA



Source: Own calculations based on Eurostat data

Table A7

Turning points of the business cycle of Croatia

Peaks	2000 – Quarter 4	2008 – Quarter 2	2011 – Quarter 3	2017 – Quarter 3
Troughs	2005 – Quarter 1	2009 – Quarter 3	2014 – Quarter 3	

Source: Own calculations based on Eurostat data

ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
ECONOMIC STUDIES

Volume 28 (3), 2019

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SOCIAL COHESION
(Bulgaria – EU – Western Balkans)

The current study examines the social cohesion between the Western Balkans, Bulgaria and the EU within the context of the labor market. It represents an overview of the more well-known theoretical concepts, relevant to the understanding of the social cohesion, as well as of the tools for its measuring. The achieved level of convergence between the surveyed countries is evaluated, based on the analysis of the indicators related to the labor market dynamics. The main EU strategies and policies are presented for promoting the accession of the Western Balkan countries on the way to their future membership. Critical points are identified for the necessity of key reforms in national policies to strengthen the social cohesion in the labor market context as an important link in the social cohesion policy chain.
JEL: O52; O57; J60; F68; F66; E60

Introduction

The **object** of the present study is the social cohesion of Bulgaria, the EU and the Western Balkans in the context of the labor market. In this sense, the process of convergence and reduction of the imbalances between Bulgaria, the Western Balkans and the EU in terms of the labor market will be studied as the ***subject***.

The present study sets out three main ***purposes*** related to the subject and object of the research:

- **Purpose 1**. To confirm or reject, in the light of the ongoing accession of the Western Balkan countries in the EU, whether there is a ***convergence process between them and the EU*** during the period under review.
- **Purpose 2**. To confirm or reject, in the light of the current accession of the Western Balkan countries in the EU, whether there is a ***convergence process between them and Bulgaria*** during the period under review.

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- **Purpose 3**. To assess the position of the Western Balkan countries regarding their forthcoming membership in the EU in the context of the two-speed Europe idea and the possibility of the Balkans becomes second or third periphery.[4]

For the achievement of the targets hereby set, the following **research tasks** are to be carried out:

Task 1. On one hand, by means of a graphical analysis, we will study the key indicators of the ***dynamics in real values*** between Bulgaria, the EU and the countries of the Western Balkans in the period 2008 – 2016, thus attempting to extract a trend or a dynamic dependence of change in the values analyzed during the period. On the other hand, we will analyze the ***dynamics of the change in percentages*** of key indicators between the Western Balkan countries and Bulgaria / EU in the period 2008 – 2016. Thus, we will attempt to bring about a trend or dynamic dependence of change in the differences of the values during the period. The aim is to eliminate the confusion brought about by the different dynamics in the real values of all the subjects.

Task 2. By means of graphical analysis, we will compare 2016 with 2008 by ***differences in percentages*** between the Western Balkan countries and Bulgaria / EU. This presents an opportunity to find a solution to the problem of whether, at the end of the period, the countries are farther or closer to convergence with the EU and to reduction of the regional imbalances.

Task 3. By means of graphical analysis, we will compare 2016 with 2008 on ***real values*** of the indicators for social cohesion in the Western Balkan countries and Bulgaria / EU. The aim is to find a solution to the question of whether there is a ***coincidence*** between the decrease or increase of the convergence and the regional imbalances in 2016 compared to 2008. Also, on the basis of the key indicators, we will study the variation and the scope of the indicators over the period under review. Subsequently, we will draw conclusions in which Western Balkan countries the change in ***real values*** is almost insignificant and which countries undergo substantial ***fluctuations*** during this period.

Task 4. By means of a two-dimensional and three-dimensional graphical analysis, we will summarize and draw conclusions for the Western Balkan countries by ***groups*** of indicators. In this way, we will draw out dependencies between the indicators of social cohesion and their dynamics in a time scale. The summaries will be tested, and through rank analysis they will be ordered by country according to their proximity to the EU by years of the survey period, thus giving a clear rank assessment of their convergence with the EU.

The following ***assumptions and limitations*** are adopted in the study:

- Given the different dynamics of economic activity, both convergence and imbalances between Bulgaria, the EU and the Western Balkan countries will be analyzed not only through their real absolute or relative values, but more attention will be paid to the

[4] https://euobserver.com/institutional/138832 / https://www.politico.eu/article/fast-forward-to-two-speed-europe/ / https://www.dw.com/en/how-frances-emmanuel-macron-wants-to-reform-the-eu/a-43002078

relative differences in the Western Balkans values against the respective EU28 and Bulgaria ones;

- The social cohesion is seen in a more general sense as a dimension of convergence through indicators, relevant to the labor market, which have a direct bearing on the well-being and social sustainability.
- All six countries (Serbia, Montenegro, North Macedonia, Albania, Bosnia and Herzegovina and Kosovo) are being analyzed in the Western Balkan countries survey.
- The investigated time period, given the availability of data and allowing an objective assessment, is 2008-2016.
- The indicators for the labor market dynamics used and analyzed are: *Unemployment rate in the 20-64 age group*; *Employment rate (15+)*; *Economic activity of the population aged 25-64*. The selection of indicators is motivated by the available statistical information for the countries concerned.

The methodological toolkit applied aims to reveal the development of indicators – variables in dynamic order through comparison of real and relative values. In this respect, as one of the most applied methods for illustrating changes, dependencies and trends in time order, in the context of dynamic analysis and analysis of differences, are the methods of ***graphical analysis*** and the methods of ***rank analysis***. Through their implementation are achieved the set goals and objectives of the research to reveal peculiarities and dependencies between the Western Balkans, Bulgaria and the EU in the dynamic change of the indicators of the labor market and social cohesion during the period under review.

Over the last few decades, some of the most comprehensive integration processes have been observed in Europe. The countries, covered by the expansion policy of the European Union, are experiencing the effects of the Euro-integration in various aspects – economic, social and political. In addition, they face a number of challenges arising from internal (aging, cultural gaps and others) and external impacts (globalization, emigration pressure, etc.). The expansion opportunities are related to achieving greater prosperity in newly acceded and currently acceding countries. The goal of the EU is to create a united Europe where the links between the different countries in the region are stronger. The social, economic and territorial proximity to a large extent determines the development of the process of coherence between the countries.

The opportunities for expanding the union are revealed with the European perspective for the accession of the Western Balkans [5] to the EU. Our country has undertaken a key role when this issue was highlighted as a priority during the Bulgarian Presidency of the EU- at the Western Balkans summit.

The EU is implementing a policy of gradual integration of the Western Balkan states into the community, by which it promotes the cooperation of the countries in the region in different areas. The level of the social connectivity achieved in the context of the labor

[5] Montenegro, Serbia, the Republic of North Macedonia, Albania, Bosnia and Herzegovina, and Kosovo

market is investigated for the purposes of this article. This is reflected in the assessment of the employment policies as an opportunity to achieve cohesion objectives such as: reduction of inequality, social exclusion, poverty, etc.

The evaluation of the achieved level of integration of the Western Balkan countries with the EU and Bulgaria, and in particular, the achieved cohesion regarding their labor markets, is a complicated and difficult to measure process. This is due to the lack of a commonly accepted definition of the term *social cohesion,* both at a national and international level, which makes its research complicated. Another reason is that the period under examination includes the global economic crisis from 2007 to 2008 and its repercussions have an impact on the development of the economies of the countries concerned.

Theoretical Concepts of the Term *Social Cohesion* and Toolkit for its Research

The development of the concept of *social cohesion* is linked to numerous definitions and indicators for its measuring and application which, on the one hand, depend on defining the elements of the social cohesion and, on the other hand, on the area in which the concept is applied.

Based on the purpose of this work, namely to assess the level of integration of the Western Balkan countries into the EU in the context of the labor market, it is first and foremost necessary to clarify the concept of *social cohesion* within the EU. In view of this, we have reviewed the more widely-adopted concepts of social cohesion. This will serve as the basis for coining the most appropriate definition.

In the overwhelming majority of European documents and strategies, the social cohesion is viewed as a political concept which is a prerequisite for political security and stability. It should be noted that the *Council of Europe* perceives social cohesion as '*the ability of a society to guarantee the well-being of all its members – to minimize inconsistencies and to avoid marginalization – to manage differences and gaps and to provide the means for the well-being of all members*' (Council of Europe 2010). It is clear from the definition that the essence of the social cohesion is to overcome inequality and gaps in society or, ultimately, social cohesion becomes a function of the politics. In this case, the assessment of the social cohesion is possible by measuring the results of the cohesion policy aimed at reducing social exclusion by increasing the access to the labor market.

The *Social Cohesion Strategy* (Council of Europe 2000) adopts an approach through which the essence of the social cohesion is clarified by examining its constituent parts. The elements directly related to the achievement of social cohesion in the context of the labor market are: *promotion of employment through the implementation of appropriate economic policies and through adequate labor remuneration; support of entrepreneurship and search for employment; conducting of interconnected economic and social policies; building of a stable social system which limits the social exclusion*. Hereby again, policies play a leading role in achieving the social cohesion.

The same approach to defining the social cohesion is applied in the OECD (OECD 2011) – it explores the impact of leading employment, education and environmental policies on

improving the social cohesion and thus clarifying its essence. Initially, however, the organization identifies the social cohesion through social inclusion, social capital and social mobility.

Dayton-Johnson (2003) consider the social cohesion in the context of the social capital, being a feature of society, and also the flow of investment by individuals.

From the written-sources review of the more well-known concepts for social cohesion, we can conclude that it can be considered in several respects: the social cohesion as a function of the social inclusion, the social cohesion as a function of the social capital; and the social cohesion as function of the policies.

For the purposes of the present study, social cohesion is seen as a function of the social inclusion, expressed through the access to the labor market. On the other hand, the social cohesion is also perceived as a function of the policies pursued in the labor market.

The conceptual clarification of the social cohesion is also possible by investigating the indicators for measuring the social connectivity. As a result, in this study, emphasis is placed on the indicators used in the Union.

A system of indicators has been developed within the EU to make it possible to assess the effectiveness of the policies pursued to achieve social cohesion. These indicators [6] cover four thematic areas – employment, education, health and income.

According to ECLAC (2007), the measurement of the social cohesion in the labor market is based on the indicators: *regional cohesion; long-term unemployment rate; very long-term unemployment rate; members of households of unemployed; difference in the employment of immigrants; workers at risk of poverty.*

The indicators *long-term unemployment rate*; *very long-term unemployment rate*; *members of households of unemployed* and *workers at risk of poverty* provide information on the risk of persistent social exclusion and the risk of falling into poverty.

The specific indicator of *workers at risk of poverty* shows that employment is not the best prevention against poverty risk. The more significant prerequisites for the emergence of this category in the labor market are related to: '*the economic growth; the minimum wage; the educational level of the employees; the size of the household; the type of working hours and the labor contract, and the low labor intensity*' (Raichev, Stoyanova, Madzhurova, 2017).

The *regional cohesion* indicator serves to assess the achievements of the policy regarding the social cohesion between the regions.

The examination of these indicators enables the elaboration of an approach to assess and analyze the social cohesion in the context of the labor market as well as of the cohesion policies. The analysis of indicators helps to measure the progress of the EU Member States in the process of the social cohesion in the labor market. It is possible to assess the extent to

[6] The indicators are 21 in number, ranked according to their importance and divided into 12 primary and 9 secondary indicators. They are more familiar as Laeken indicators of social cohesion in the EU, as they were adopted at a meeting of the European Council at Laaken Castle, Brussels.

which the objectives of the EU social policy, and in particular – the common employment policy, have been achieved through the results achieved.

Following a literature sources review of the social cohesion concepts and the toolkit for its research, Jenson (2010) proposes the implementation of several types of indicators, with the following being relevant to the labor market connectivity. The social cohesion is seen as social inclusion, measured by: *access to the labor market* (unemployment rate, employment rate in the informal economy as a percentage of the total employment); *access to financial resources* (indicators such as the Ginny Index and indicators for measuring income and poverty are applied); *access to education and human capital*; *healthcare*; *technologies*.

Based on the review of the different views on the concept of social cohesion and the toolkit for its assessment, a theoretical and methodological approach is being pursued to study the social cohesion of the Western Balkan countries with the EU and Bulgaria.

The article analyzes the dynamics of only some of the more important indicators characterizing the development of the labor market, as employment, unemployment and economic activity. On the basis of these, the analysis is built up and specific results and conclusions are drawn.

Labor Market Analysis – EU, Bulgaria and the Western Balkans

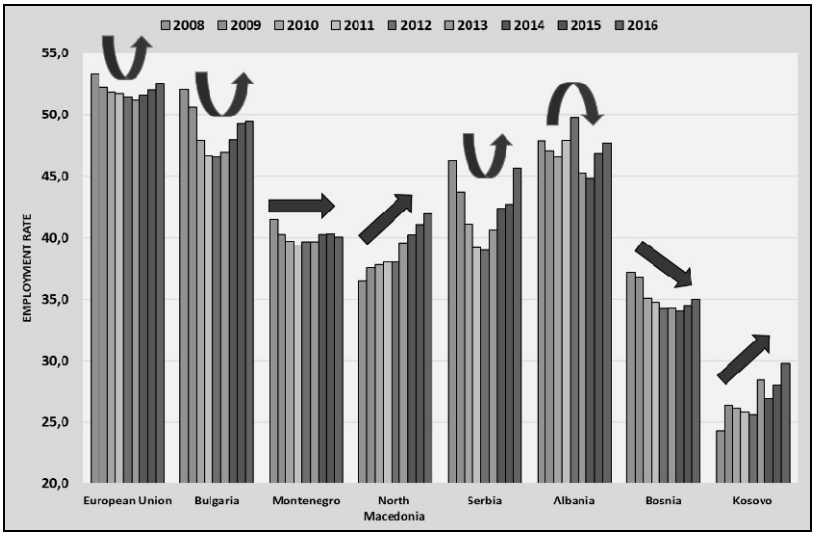
Employment

Fig. 1 displays the dynamics of the employment rate in the EU28, Bulgaria and the Western Balkan countries. A few peculiarities stand out. ***First***, the dynamics of the studied subjects is concaved in the middle at EU28, Bulgaria, Serbia and slightly so in Montenegro. North Macedonia and Kosovo see an upward trend, with Bosnia and Herzegovina,, and partially Albania, a downward one. ***Second***, the lowest descent is with EU28, which is normal for an average of 28 countries. ***Third***, from all countries, the largest change is seen in Serbia, and the weakest -in Montenegro. ***Fourth***, North Macedonia and Kosovo are the only countries with higher employment in 2016 compared to 2008, showing a clear positive dynamics.

Fig. 2 presents the convergence process between the Western Balkan countries and the average value of EU28 by the indicator *level of employment* over the period 2008-2016. The differences in percentage points compared to the EU28 value in the respective year are used instead of absolute values. A number of clear points stand out. ***First***, there is no Western Balkan country with higher values than the EU28 average throughout the whole survey period. ***Second***, in the dynamics of the differences, only Serbia marks a peak in the middle of the survey period and ends it with a decline. ***Third***, only Kosovo and North Macedonia tend to narrow the gap or mark actual convergence with the EU throughout the period, whereas with Bosnia and Herzegovina the trend is the opposite. **The main conclusion** which follows from the graphical analysis is that, apart from three countries (North Macedonia, Bosnia and Kosovo), the rest do not show a clear linear trend of change which means that such a trend is missing or it is not linear.

Figure 1

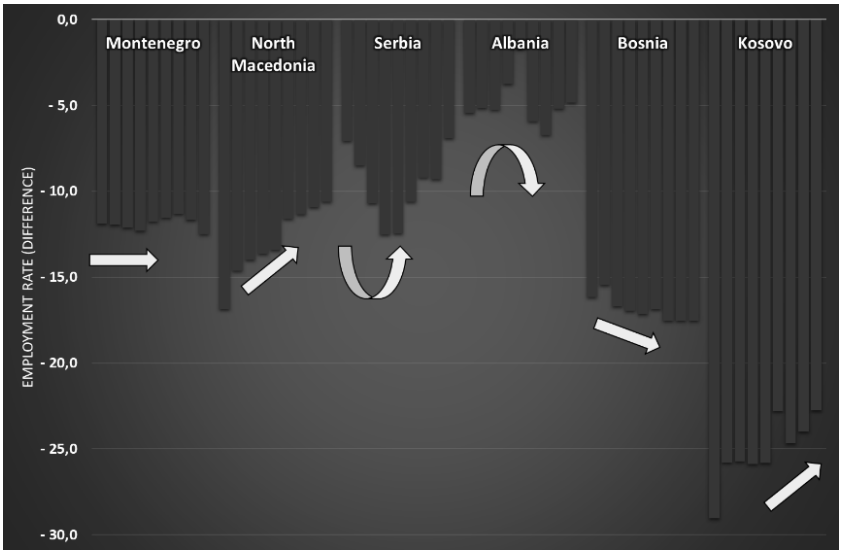
Employment rate – EU, Bulgaria and the countries of the Western Balkans



Source: Eurostat, World bank

Figure 2

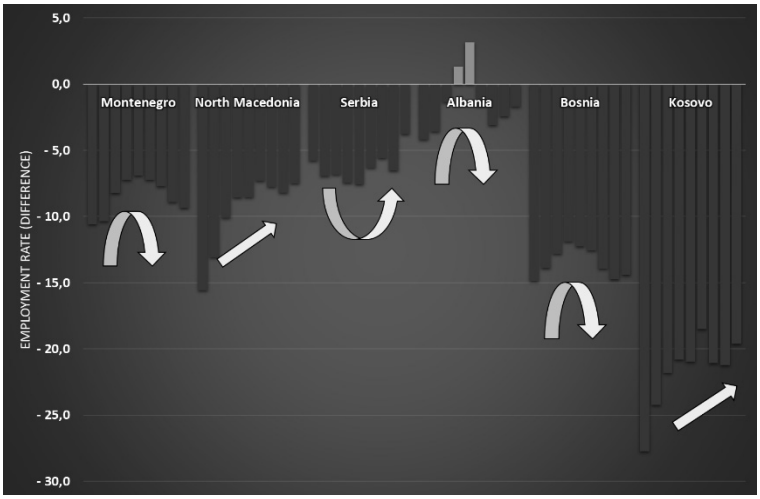
Employment rate differences between the countries of the Western Balkans and EU (2008-2016)



Source: Eurostat, World bank

Figure 3

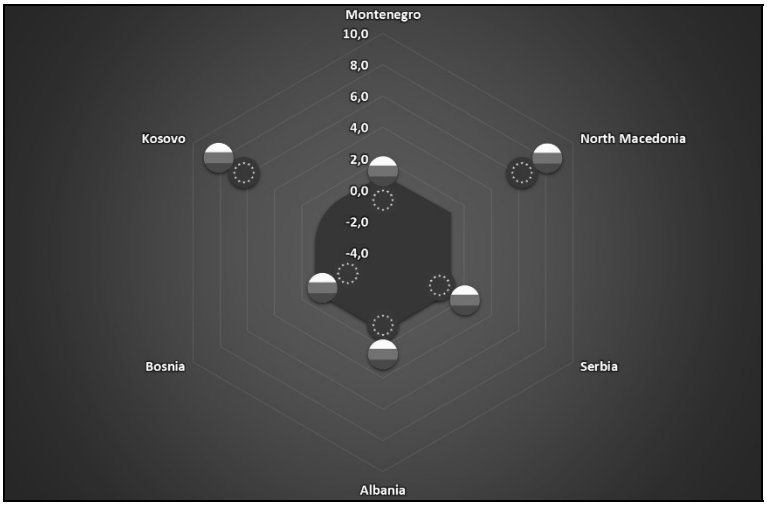
Employment rate differences between the countries of the Western Balkans and Bulgaria (2008-2016)



Source: Eurostat, World bank.

Figure 4

Employment rate differences between the countries of the Western Balkans and EU / Bulgaria (2016 compared to 2008)



Source: Eurostat, World bank.

The disproportions in a dynamic order between the Western Balkan countries compared to the average for Bulgaria as differences in the *employment rate* indicator during the period 2008 – 2016 are reflected in Fig. 3. Here, too, we can clearly identify a few specifics. ***First***, only one country – Albania, has higher values than the average ones for Bulgaria during two years of the survey period (2011 and 2012). ***Second***, three countries tend to converge with the average for Bulgaria (North Macedonia, Kosovo and partly Serbia). ***Third***, unlike the dynamics of the EU28 differences, there are three countries with pronounced bottom points during the period, after which all states tend to move away from Bulgaria. **The main conclusion** which follows from the graphical analysis is that only two countries (North Macedonia and Kosovo) show a clear linear trend of change which indicates that the change in imbalances is more consistent than the convergence process during the period under review.

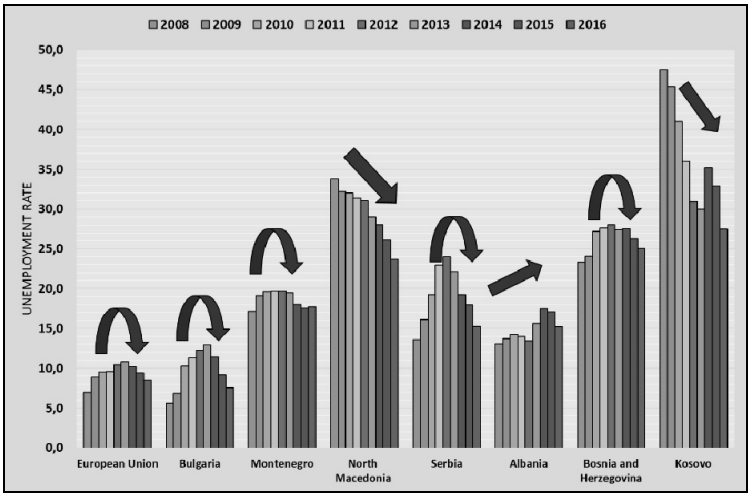
The net result from the convergence process between the Western Balkan countries and the EU, on the one hand, and the average for Bulgaria, on the other, is summarized in Fig. 4. It presents the difference in 2016 compared to 2008 of the deviations between the countries and EU28 as well as between those states and Bulgaria. Thus, the aim is to answer the question whether the differences between the Western Balkan countries and the average of the EU and Bulgaria are bigger or smaller in 2016 compared to 2008. The graph shows that only 2 countries (North Macedonia and Kosovo) increase their employment rate compared to EU28. Consequently, they are closer together in 2016 than in 2008. The conclusion is that the convergence of the Western Balkan countries with Bulgaria according to the *employment* indicator is not accompanied by increased convergence with the EU28, and even in some cases the opposite is evident – moving away from the EU average. This conclusion clearly shows the negative trends in the Balkans, which are shifting away from the EU28 countries under this indicator.

Unemployment

The dynamics of the unemployment rate in the EU28, Bulgaria and the Western Balkan countries is reflected in Fig. 5. Several basic features are notable. ***First***, the dynamics of the EU and Bulgaria stands out in the middle of the survey period, confirming the sharp negative effects of the crisis on the rising unemployment, dynamism similar to that in Montenegro, Serbia and Bosnia and Herzegovina alone. ***Second***, the slightest increase is noted by the EU28, which is normal for an average of 28 countries, but also in Montenegro, which shows enviable resilience to the impact of the 2008 crisis. ***Third***, among all the countries, the strongest drop in the level of unemployment is noticed in Kosovo. ***Fourth***, two countries report a downward steady dynamics (Kosovo and North Macedonia), and one – a stable rise – Albania. ***Fifth***, all countries, excluding North Macedonia and Kosovo, report higher levels of unemployment in 2016 compared to 2008.

Figure 5

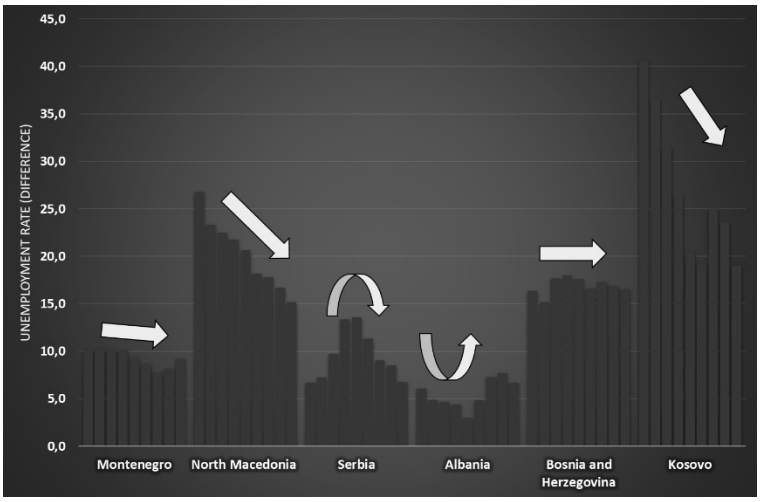
Unemployment rate – EU, Bulgaria and the countries of the Western Balkans



Source: Eurostat, World bank

Figure 6

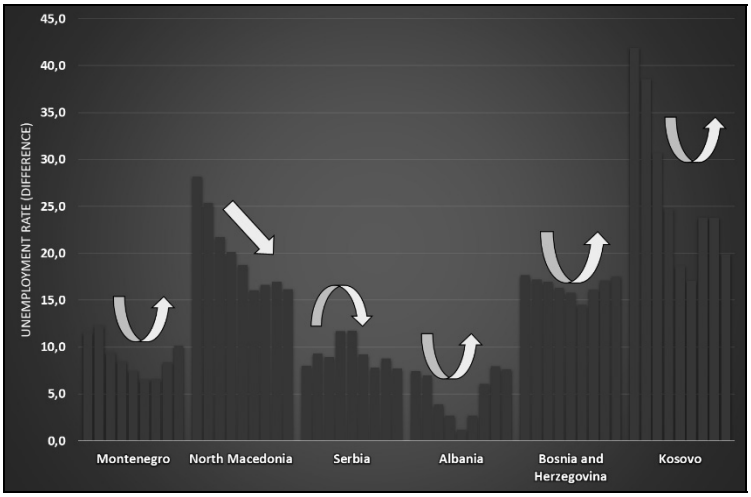
Unemployment rate differences between the countries of the Western Balkans and EU (2008-2016)



Source: Eurostat, World bank

Figure 7

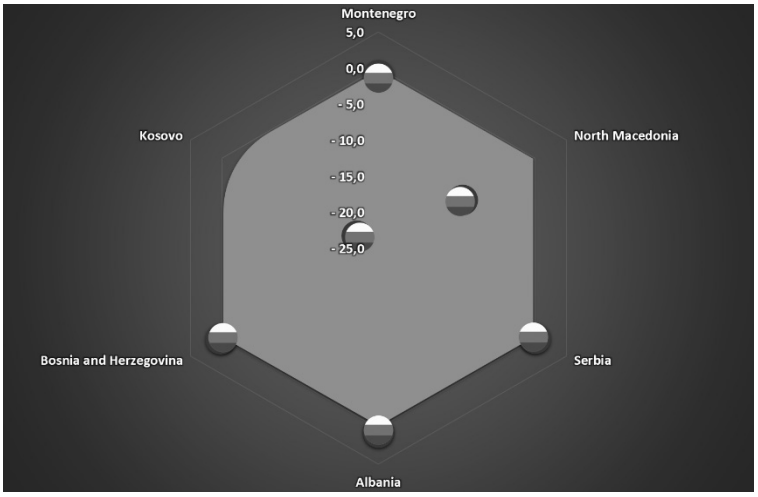
Unemployment rate differences between the countries of the Western Balkans and Bulgaria (2008-2016)



Source: Eurostat, World bank

Figure 8

Unemployment rate differences between the countries of the Western Balkans and EU / Bulgaria (2016 compared to 2008)



Source: Eurostat, World bank

Fig. 6 presents the convergence process between the Western Balkan countries and EU28 average by the indicator *unemployment rate* for the period 2008-2016. Instead of using absolute values, the differences in percentage points compared to the EU28 value in the respective year are used. Hereby, too, we can pay attention to the below facts. ***First***, no country is below the EU28 average value during the whole survey period. ***Second***, we can observe the most varied dynamics of differences in the EU. In North Macedonia and Kosovo it points downwards, with Serbia and Albania it is convex and concave, respectively, around the center of the period, with Bosnia and Herzegovina and Montenegro it remains virtually unchanged. ***Third***, the most sizeable change towards convergence is registered in Kosovo. **The main conclusion** which follows from the graphical analysis is that, apart from North Macedonia and Kosovo, no other country shows a clear linear trend of change, leading to the fact that either such is missing or that it is not linear, or maybe it is a polynomial of a second or third line related to the dynamics of the business cycle.

Fig. 7 reflects the disproportions between the Western Balkan countries against the average for Bulgaria by the *level of unemployment* indicator for the period 2008 – 2016. Several features can be clearly identified. ***First***, throughout the survey period, no country has lower than Bulgaria's average value, similar to the EU. ***Second***, we can observe the most varied dynamics of differences versus Bulgaria. For North Macedonia and Kosovo, it descends; with Serbia and Albania it is convex and concave, respectively, around the center of the period. Unlike the EU, in this case, with Bosnia and Herzegovina and Montenegro it is not unchanged, but shows concave dynamics. ***Third***, the biggest change towards convergence is registered in Kosovo. **The fundamental conclusion** which follows from the graphical analysis is that, apart from North Macedonia and Kosovo, no other country shows a clear linear trend of change, so such is missing or it is not linear. Consequently, the change in imbalances is more consistent than the convergence process during the period under review.

The net result of the process of convergence between the Western Balkan countries and the EU /Bulgaria, on the other hand, is summarized in Fig. 8. The graph shows that only 3 countries (Montenegro, Kosovo and North Macedonia) are reducing their unemployment rate compared to the EU28 and are therefore closer together in 2016 than in 2008. All others show that the gap between them and the EU28 is increasing. Compared to the average for Bulgaria, all countries, excluding Albania, reduce their unemployment. As with both Bulgaria and the EU, two countries show a huge convergence of more than 10 percentage points – North Macedonia and Kosovo. The conclusion is that the reduction of the regional imbalance in the Balkans by the unemployment indicator is accompanied by an increase in their convergence with the EU28, too.

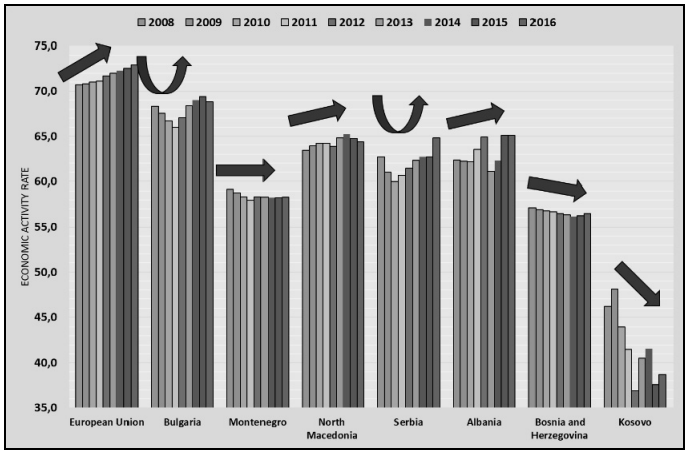
Economic activity

Fig. 9 presents the dynamics of the level of economic activity rate in EU28, Bulgaria and the Western Balkan countries. The graphical representation shows the following. ***First***, the dynamics of the economic activity rate in the EU is a clearly pronounced upward trend during the survey period, which shows dynamics towards strengthening of the active population from the group of inactive people. ***Second***, in Bulgaria and Serbia, instead of an upward trend, similar to that of the EU, a decline is reflected, leading to the bottom in the

middle of the survey period, followed by an increase. ***Third***, out of the rest of the countries, the most striking change shows Kosovo, as opposed to the European trend, namely towards a reduction of the level of economic activity rate. ***Fourth***, the dynamics of all Western Balkan states are strictly different, while some are restoring their pre-crisis levels, others are notably moving away from them.

Figure 9

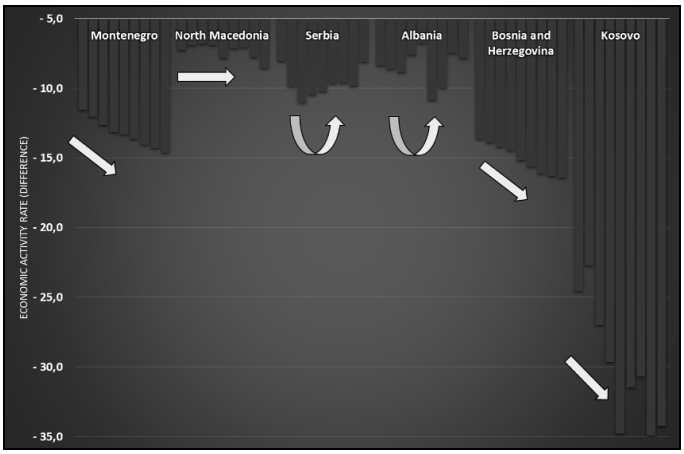
Economic activity rate – EU, Bulgaria and the countries of the Western Balkans



Source: Eurostat, World bank

Figure 10

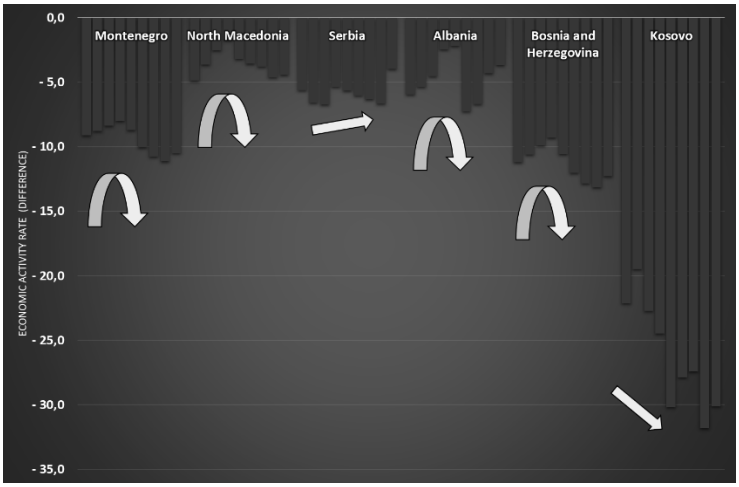
Economic activity rate differences between the countries of the Western Balkans and EU (2008 – 2016)



Source: Eurostat, World bank

Figure 11

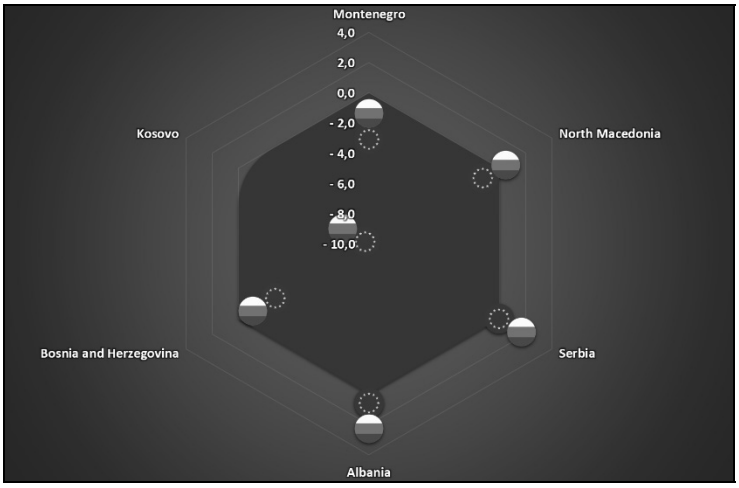
Economic activity rate differences between the countries of the Western Balkans and Bulgaria (2008 – 2016)



Source: Eurostat, World bank

Figure 12

Economic activity rate differences between the countries of the Western Balkans and EU / Bulgaria (2016 compared to 2008)



Source: Eurostat, World bank

Fig. 10 reflects the convergence process between the Western Balkan countries and the average value for EU28 by *economic activity rate* indicator for the period of 2008-2016. Instead of using absolute values, we use the differences in percentage points compared to the EU28 value in the respective year. We can highlight a few points. ***First***, no country has higher values than the EU28 average one during the whole survey period. ***Second***, apart from Serbia and Albania, which show a peak in the middle of the survey period and end with a descent, the other countries either move away or stay unchanged vis-à-vis the EU. ***Third***, three countries show a clear consistent trend towards deviation from the EU (Montenegro, Bosnia and Herzegovina and Kosovo). **The main conclusion** made from the graphical analysis is that three countries demonstrate a clear linear trend of change and the other three do not show the presence of such. From that we can draw the conclusion that such trend is missing or it is not linear.

Fig. 11 displays the disproportions between the Western Balkan countries compared to the average for Bulgaria by *level of economic activity rate* indicator for the period 2008 – 2016. Several features can be clearly identified. ***First***, no country has higher values than the average one of Bulgaria during the whole period of research. ***Second***, four out of six countries exhibit a convex trend with a peak in the middle of the survey period, subsequently, ending with a decline (Montenegro, North Macedonia, Albania and Bosnia and Herzegovina). ***Third***, only one country shows a clear consistent tendency to move away from Bulgaria (Kosovo). **The general conclusion** that follows from the presented graphical analysis is that only one country (Kosovo) shows a clear linear trend of change respective three EU countries. It means that the change towards Bulgaria is more inconsistent than the process of convergence between those states and EU during the survey period.

The net result of the convergence process between the Western Balkan countries and the EU, on the one hand, and the average value for Bulgaria, on the other, is summarized in Fig.12. The graph shows that all countries are increasing their gap in a negative aspect versus the EU28 and thus are moving further in 2016 compared to 2008 with their level of economic activity rate decreasing further in 2016 compared to the EU average. The only exception is Albania, which raises its value versus the EU and converges with 0.5 percentage points. The absolute same trend is also seen with respect to the average value of Bulgaria, except for Albania and Serbia, which are closer to the average of Bulgaria in 2016 compared to 2008, respectively by 1.7 and 2.3 percentage points. **The fundamental conclusion** is that the dynamics in almost all the Western Balkan countries facing Bulgaria and the EU tends to become more distanced.

Labor Market Summary for the EU, Bulgaria and the Western Balkans

The present summary builds on individual analyses on the separate indicators, related to the labor market dynamics, by combining them in a three-dimensional analysis of real values, rather than only highlighting the differences between them. In this way, the changes in the EU, Bulgaria and the Western Balkan countries are analyzed graphically in the relations: *unemployment rate – employment rate – level of economic activity rate*. Through the

generic graphical analysis we will be looking at whether the imbalances between the countries in the Balkans decrease in 2016 compared to 2008, and whether they come closer to the EU.

Graphic Analysis: Unemployment, Employment and Economic Activity

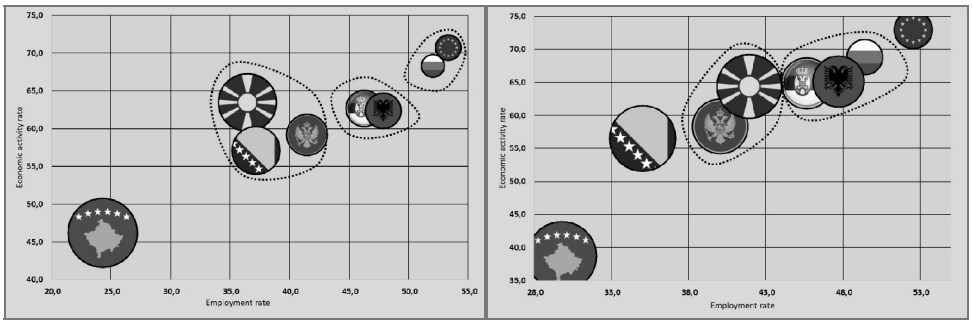
Fig. 13 reflects graphically the relation *unemployment rate – employment rate and level of economic activity rate*. To the upper are placed the countries in the three-dimensional space of the indicators in 2008, and to the lower – in 2016. On the horizontal axis, we have the indicator of *employment rate*, the vertical one contains the indicator *level of economic activity rate* and the size of the balloons corresponds to the indicator *unemployment rate*.

Below are some of the main conclusions which can be drawn by comparing the positions of the countries by year in both charts:

- **First**, in 2008, three distinct blocks of countries with similar indicators are identified. One includes North Macedonia, Montenegro and Bosnia and Herzegovina, the second – Serbia and Albania, and the third – Bulgaria and the EU28. Only Kosovo is self-positioned on the indicators used.

Figure 13

Unemployment rate, Employment rate and economic activity rate in EU, Bulgaria and countries of the Western Balkans (2008 and 2016)



Source: Eurostat, World bank

- **Second**, in 2016 the three blocks are transformed into two. Bosnia and Herzegovina in 2016 moves away from Montenegro and North Macedonia, direction Kosovo. Bulgaria is moving away from the EU and joining the bloc of Serbia and Albania. Additionally, the two blocks are closer to one another.
- **Third**, the major changes in the transition from 2008 until 2016 are the overtaking of Montenegro by North Macedonia; the increase of the economic activity of the Serbia-Albania block; also, varied changes in the economic activity and employment of

Kosovo and Bosnia and Herzegovina; the EU detachment from the Balkan countries; a significant rise in the unemployment in all the countries.

- **Fourth**, there is a reduction in the imbalances on the Balkans in 2016, leading to the grouping of the countries in a relatively detached block (excluding Bosnia and Herzegovina and Kosovo), but further away from the EU. Or, in other words, the countries manage to keep certain balance by decreasing their cohesion with the EU.

The above conclusions are also confirmed by Fig. 14 where the power and direction of change of each country in the three-dimensional plane of the two indicators used is demonstrated. From the graph presented, the following main points for the dynamics of the states arise:

- **First**, all the countries move from 2008 to 2016 in a completely divergent direction. Bosnia and Herzegovina and Montenegro mark a decline both in terms of employment and also of economic activity; Serbia and Albania increase their economic activity without significantly changing their employment; Kosovo increases its employment but reduces its economic activity; North Macedonia, as Bulgaria, does not significantly alter its economic activity but significantly changes its employment in different directions.
- **Second**, Kosovo and North Macedonia are the most affected in terms of the power of change. To a lesser extent, Bulgaria and the EU change also, with the least trend marked by Serbia, Albania, Montenegro and Bosnia and Herzegovina.
- **Third**, with regard to the unemployment rate, Bulgaria and the EU remain significantly closer to each other. However, they manage to stay away from the remaining Western Balkan countries, approaching them.

Table 1

Labor market rank arrangement of EU, Bulgaria and countries of the Western Balkans (2016 compare to 2008)

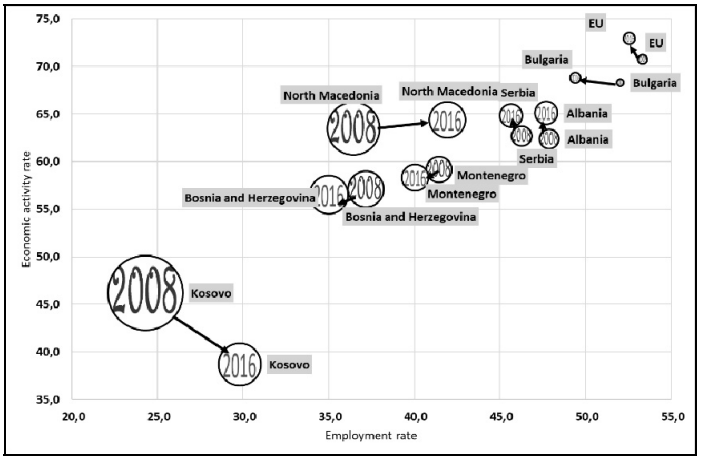


Figure 14

Unemployment rate, Employment rate and economic activity rate change in EU, Bulgaria and countries of the Western Balkans (2008 and 2016)

		2008	2009	2010	2011	2012	2013	2014	2015	2016
Economic activity rate	Montenegro	1	2	3	4	5	6	7	8	9
	North Macedonia	6	2	1	3	8	5	4	7	9
	Serbia	1	6	9	8	7	4	3	5	2
	Albania	5	6	7	3	1	9	8	2	4
	Bosnia and Herzegovin	1	2	3	4	5	6	7	8	9
	Kosovo	2	1	3	4	8	6	5	9	7
Unemployment rate	Montenegro	8	9	7	6	5	3	1	2	4
	North Macedonia	9	8	7	6	5	4	3	2	1
	Serbia	1	3	6	8	9	7	5	4	2
	Albania	6	5	3	2	1	4	8	9	7
	Bosnia and Herzegovin	2	1	8	9	7	4	6	5	3
	Kosovo	9	8	7	6	3	2	5	4	1
Employment rate	Montenegro	5	6	7	8	4	2	1	3	9
	North Macedonia	9	8	7	6	5	4	3	2	1
	Serbia	2	3	7	9	8	6	4	5	1
	Albania	7	4	6	2	1	8	9	5	3
	Bosnia and Herzegovin	2	1	3	5	6	4	8	7	9
	Kosovo	9	6	5	8	7	2	4	3	1
Labor market rank	Montenegro	4	6	7	8	5	2	1	3	9
	North Macedonia	9	7	5	6	8	4	1	2	3
	Serbia	1	3	7	9	8	6	4	5	2
	Albania	7	4	5	2	1	8	9	6	3
	Bosnia and Herzegovin	2	1	3	5	6	4	8	7	9
	Kosovo	9	4	5	7	8	2	3	6	1

Source: Eurostat, World bank.

Rank analysis

Table 1 displays a breakdown of each country in the Western Balkans by year, with the difference between the values of each country and the average European level being the basis for determining the ranks. In practice, by using ranks, we mark with 1 the year with the closest standing values to these of the EU, and with 9 – the year with the furthest standing values, and subsequently, ranging between them. Thus, through the ranks, it is clearly shown when and by which indicators the countries are closer or further from the EU. The table presents all the indicators used by the labor market and draws a general assessment by means of a ranging marking with regards to the convergence of the Western Balkan countries in the context of the labor market.

The table data helps to highlight several key points for the Western Balkan countries and their convergence with the EU:

- Concerning **Montenegro**, two indicators: employment and unemployment rate do not show the closest values to those of the EU at the beginning of the survey period. A full contrast is however seen when comparing unemployment rate and economic activity. At the beginning of the period we observe the most distant values to those of the EU regarding unemployment, while the economic activity at the beginning stays closest, and at the end of the period moves furthest from that of the EU. All three indicators in 2011-2013 do not mark the highest figures, characteristic of the EU countries. The common range regarding the labor market clearly shows that Montenegro is farther

away from the EU in the first half of the period, a situation which improves in the coming years, followed by worsening. At the end of the period, the situation deteriorates significantly in the aspect of distance from the European average compared to previous years. Or, the overall conclusion for Montenegro, concerning the labor market indicators, is that ***there is no convergence with the EU*** during the period under review and, in particular, towards its end. However, the improvement of the situation before 2016, given a future re-examination, allows for positive data on trends towards convergence, a result due to accidental deterioration of the data during that particular year.

- Concerning **North Macedonia**, unlike Montenegro's analyses in the context of the labor market, two out of three indicators show roughly similar dynamics. In the years up to the deepening of the crisis, North Macedonia stands the most remote to the EU with ranks of 8 and 9, respectively, except for the level of economic activity which improves over this period. Nevertheless, the three indicators in the 2011-2013 period do not mark the highest values typical of EU countries. The overall labor market rank clearly shows, in complete contrast to Montenegro, that at the beginning of the period North Macedonia is significantly distant from the EU, a situation which becomes more positive in the years to come, and, ultimately, significantly improves. At the end of the period, there is a serious convergence towards the dynamics of the average European level compared to the previous years. All in all, the general conclusion for North Macedonia, regarding labor market indicators, is that ***there is a convergence with the EU*** during the period under review and, in particular, at its end. Similarly, the improving of the situation by 2016 enables us, after a re-examination in a certain period of time, to collect data which will be significantly more positive for a convergence with the EU.

- Regarding **Serbia**, unlike the analyses of North Macedonia and Montenegro in the context of the labor market, all the three indicators show roughly similar dynamics. In the years of the crisis deepening, Serbia is very close to the EU with ranks 1 and 3 respectively. Such a convergence is also noticeable in the years towards the end of the period, which shows a full recovery. Also, the three indicators in 2011-2013 show the highest values, which are typical for the EU countries and indicative of the negative effects of the global economic crisis. The general labor market ranking clearly shows that, at the beginning of the period Serbia is significantly close to the EU, a situation which deteriorates considerably in the coming years, and, subsequently, significantly improves. At the end of the period there is a convergence at pre-crisis levels. By all means, the general conclusion for Serbia, on the labor market indicators, is that during the period under review, and in particular at its end, ***there is a convergence with the EU*** with some conditionality, due to the proximity between the ranks in 2016 and 2008. Also, the improvement of the situation towards 2016, allows us, after a re-examination in a certain period, to consider significantly more positive data towards a convergence with the EU.

- Regarding **Albania**, unlike Montenegro, and similarly to North Macedonia in the context of the labor market, three indicators display roughly similar dynamics. In the years of the crisis deepening, Albania is seriously distanced from the EU with ranks

between 5 and 7. This situation improves in the coming years. Interestingly, although the worst for most countries is the 2011-2013 period, Albania's one is shifted to 2013-2015 when the highest values are reported vis-à-vis the EU. The overall labor market ranking clearly shows similarities with Montenegro. Albania stands considerably farther from the EU at the beginning of the period, a situation which improves in the coming years, but subsequently deteriorates. At the end of the period there is a significant improvement in the convergence with the dynamics of the average European level compared to the previous years. Or, the overall conclusion for Albania, based on labor market indicators, is that ***there is a convergence with the EU*** during the research period and in particular towards its end. Similarly, the improvement of the situation by 2016 enables us to draw data significantly more positive to a convergence with the EU, after re-examination in a certain period of time.

- Concerning **Bosnia and Herzegovina**, similar to the situation with Montenegro and opposite to Albania and North Macedonia, the three indicators at the beginning of the survey period take into account the closest values to the EU. This presents a situation which deteriorates significantly with the time span and ends in extremely high values. With the exception of the unemployment in the period 2011-2013, we cannot report the highest values, typical for EU countries. The overall labor market ranking clearly demonstrates that during the first half of the period Montenegro is more convergent with the EU, as Serbia is. This situation worsens in the coming years under the impact of the global crisis and does no longer improve. At the end of the period, the situation deteriorates significantly as it distances itself from the European average compared to previous years. To sum up, the overall conclusion for Montenegro, based on labor market indicators, is that ***there is no convergence with the EU*** during the period under review and, in particular, at its end. Moreover, the deterioration of the situation in 2016 allows us to collect evidence even more negative towards a convergence with the EU, after a re-examination in a certain period.

- Regarding **Kosovo**, unlike the other Western Balkan countries, and similarly in parts with Albania and North Macedonia in the context of the labor market, two out of the three indicators display roughly similar dynamics. Only the *economic activity* indicator stands apart, and if it means getting closer to distancing, then employment and unemployment show distancing to coming closer across a time span. In the years up to the deepening of the crisis, Kosovo is seriously remote from the EU with ranks 9, a situation which improves in the coming years. One can also take into account the effects of the mid-term crisis, which is much more obscure than the changes in the EU countries. The overall labor market ranking clearly shows similarities with North Macedonia, where, at the beginning of the period, Kosovo stands considerably farther away from the EU, a situation which remains such in the coming years, however, improves consequently. At the end of the period, during the last four years, there is a significant improvement in convergence with the dynamics of the European average values, compared to the previous years. To sum up, the overall conclusion for Kosovo, regarding the labor market indicators, is that ***there is a convergence with the EU*** during the period under research and, in particular, towards its end. Similarly, the improvement

of the situation towards 2016 makes it possible, after re-examination in a certain period of time, for the data to be significantly more positive towards convergence with the EU.

Overall, only half of the Western Balkan countries demonstrate a convergence with the EU. The actual conclusions should focus on analyzing the labor market policies and measures in order to explore in greater depth the factors and causes of influence and also to draw the appropriate conclusions for comprehensive structural reforms and the sharing of good practices.

National Cohesion Policy in the Context of the Labor Market in the Western Balkan Countries

General Provisions

The greater part of the EU budget – more than one third of the total EU expenditure, is spent on EU convergence. Cohesion policy often focuses on the effects of growth. Effects on employment, however, are key factors to understanding regional income inequality, as income gaps are, by definition, based on differences in labor productivity and /or employment levels, among other factors. A significant share of EU spending is directly geared towards reducing the employment gap. Empirical evidence, however, suggests that higher EU labor costs do not necessarily increase the overall level of employment. Instead, the impact depends on whether the Structural Funds are used as capital subsidies or as investments in human capital (ECB, 2011). Also, the structural funds have a short-term effect on the business cycle. Research by the European Central Bank shows that the Structural Funds do not generally result in any positive impact on the regional employment rate. Evidence is found that the Structural Funds are conditionally effective and can be interpreted as capital subsidies. They have a significant positive impact on the employment rate in regions with a small share of the low-skilled population and have a negative impact on the employment rate where a high share of the low-skilled population resides, the latter typical of the Western Balkan countries. This means that, practically, the highly qualified population benefits from payments under the EU Structural Funds in the field of the labor market (ECB, 2011).

The European Union, and to a great extent on the initiative of Bulgaria, is making ever more obvious steps to expand itself to the Western Balkans, however, clearly pointing out that it is impossible to adopt a concurrent approach to all six states because of their differences in political and socio-economic development. Simultaneously, the economies of the Western Balkans continue to report growth driven by private consumption and investment, as well as the gradual revival of crediting, money transfers and major infrastructure projects. It is of utmost importance to bear in mind that foreign investment and foreign trade are factors with a high impact on employment. (Tsanov, Shopov, Beleva, Hristoskov, Lukanova, 2012). The standard of living has increased significantly in all the six countries of the Western Balkans compared to the situation in 1995. Nevertheless, they remain still among the poorest in Europe. Moreover, the economic convergence of the Western Balkan countries is losing momentum due to the crisis and lags behind the convergence of the new Central and Eastern European Member States (EC, 2018).

A number of features should be taken into account concerning the labor market in these countries, namely:

- Due to the economic crisis, income growth and especially social cohesion between the poorer and richer countries in the EU slowed down, and in some cases even went backwards. This process cools the ambitions of the EU itself and questions its attraction to the potential future members. Poverty, high unemployment, the gray economy, low wages, corruption, abuse of office, emigration of skilled workers, discrimination against minorities and brain drain are issues which concern all the countries of the Western Balkans;
- The pace of convergence of the countries of the Western Balkans is rather slow and lagging behind the rest of the EU region. The data show that full match to the EU's standard of living may take 40 years (EESC, 2018);
- The difference in labor income of the Western Balkan countries is significant compared to that of EU28 and despite the statutory minimum wage, it does not cover the living standard, which also applies to Bulgaria. As a result of the high unemployment, the labor migration from all six countries in the Western Balkans, as well as poverty, is still a major problem. According to research, a quarter of the population of all six countries of the Western Balkans has moved abroad. While money transfers from overseas workers are an important source of income and support the national economy in the short term, mass migration and population decline have severe long-term consequences for the economic development potential of these countries (EESC, 2018);
- Except for Montenegro, low-skilled young people and women are recorded in the rest of the countries. This hinders the recruitment of necessary highly qualified labor. Low education or its lack, thereof, is a factor in increasing unemployment. Also, women, due to their inability to integrate into the labor market, remain at home and are often consumers of social benefits and social pensions respectively.

Labor Market Policies

Before considering the issue of the labor market policies and the analysis from the previous chapter, it should be borne in mind that the countries of the Western Balkans follow highly differentiated transition models. Some of them are classified as early reformers (Albania, Croatia and the Former Yugoslav Republic of North Macedonia) while others commence a reform process later (Bosnia and Herzegovina, Serbia, Montenegro and Kosovo). Labor market development at the early reforming countries reflects transition processes common to other Eastern European countries, including declining indicators at employment level. The economic growth has been recovering significantly in most cases in the Western Balkan countries since 2000, slowing down in the Former Yugoslav Republic of North Macedonia as a result of the 2001 civil conflict. In all the countries on this territory, including the former Yugoslav Republic of North Macedonia, the forecasts show strong economic growth, above the EU25 average, which will remain in the medium term. However, the employment growth has not been increasing to the same extent (ETF, EC, 2007). The private sector will continue to play an increasing role in GDP formation, and

will dominate the labor market in all countries except Albania where it is already high. The privatization is expected to continue in Bosnia and Herzegovina, Croatia, Montenegro and Serbia, while in Albania and the Former Yugoslav Republic of North Macedonia it is actually completed. Bulgaria is no exception to this trend, namely with positive trends in employment growth and declining unemployment, which are the result of increased economic activity, especially in the private sector (Hristovskov, 2016). However, the formal privatization does not always meet the market-oriented behavior of enterprises. The privatization process in the 1990s in Croatia and the Former Yugoslav Republic of North Macedonia has led to imperative measures for restructuring, cost-cutting, loss of competitiveness, and hence bankruptcy. It is a process very similar to the other Eastern European countries. Through strategic approaches to structural reforms, Croatia has become more open to foreign investment and has increased competition for imported goods. Companies, on their behalf, are looking to invest in new technologies and become competitive on the international markets. The technological advances dynamically alter the conditions of production and, as a consequence, the demands on the knowledge and skills of the workforce. Since, in the modern age, scientific discoveries are being introduced into the real production continuously, the innovations in the production technologies and the parameters of the production processes are very intense. This fact modifies the approach in the process of training and qualification of the workforce. The dynamics of the technical and technological sophistication of the production base and communication links make the old models of training inapplicable and repeatedly requires the renewal of the acquired knowledge and skills during working life (Tsanov Shopov, Beleva, Hristoskov, 2017). A similar trend is expected in North Macedonia, too, as well as the emergence of these effects in Serbia, however, in the latter, there is a very weak confidence in privatization. Under the pressure of the EU and the steps towards EU membership, the market pressure, the competition and the effect of increasing FDI inflows, the pace is expected to rise. It will be reflected further in additional workers' redundancies, especially of unskilled individuals. At the same time, the investment in new technologies will increase the demand for skilled labor. The government also plays a role in adopting strategic restructuring and encouraging businesses to introduce new technologies. This is related to the role of science and also to the technology policy and the measures taken to facilitate the transfer of new technologies by both foreign firms, as well as by research organizations and higher education institutions. Accession barriers are diminishing across the region. Moreover, the enhanced business environment reduces barriers to SMEs growth. In this way, the share of SMEs is likely to increase in the future to EU levels, and this will be accompanied by growth in employment, too. Some SMEs will see intensive growth in high-tech sectors, which will have high demands on skilled labor; other SMEs will need low-skilled labor. Which model will be followed by the country depends on whether it will take the path of the highly qualified intensive transition with high levels of FDI which will form links with the local SMEs and the associated with it overflow of effects, or follow alternative routes of low-skilled labor based on the labor-intensive exports, low levels of FDI and a low level of integration in the EU economy. The share of the employed in the agricultural and industrial sectors has decreased (with the exception of industrial employment in Serbia) as a result of the reduction of the old industrial capacities after restructuring and privatization, as well as after de-industrialization in the regions affected by war and conflict (ETF, EC, 2007). Accordingly, the share of employment in the service sector, especially in health services,

business services and social services, is increasing. The orientation towards the tertiary sector again follows the tendency of Bulgaria and the rest of Eastern Europe. We observe a mismatch between supply and demand for labor, with higher labor demand for low-skilled workforce, and excessive labor supply with medium professional and technical skills.

The transition to the Western Balkans labor market must not be confused with the example of Eastern and Central Europe, but should be viewed as just a starting point (Schmid, 2002, 2006; Schömann, 2004; Schömann & Schmid, 2003). According to the authors, the standard labor relations should be coming to an end. In the future, the vacancies will be part of more flexible employment, project-oriented and team-oriented, apart from integrated into networks. Based on these theories and a conducted empirical policy research, the following assumptions are made (Deij, Lorencic, 2007). The current institutional realities in the Western Balkans are not yet capable to respond effectively to complex employment challenges. Further efforts should be aimed at strengthening inter-agency cooperation and improving the involvement of the social partners at all levels. It is accepted that it is time to implement a lot of strategies and programs in practice and not only to discuss them theoretically. An effective and efficient labor market policy requires institutional arrangements as well as adequately tailored and targeted measures to regional and local circumstances. Clear guidelines are needed, both from the EU and at state level, for the implementation of policies and plans, not just the unsustainable use of Cohesion Funds. The local partnerships, as a mechanism for uniting local potential, need to be introduced, but only after taking into account the overall socio-economic context. Once set up, partnerships must be result-oriented; partner-institutions or organizations involved in planning, deployment and monitoring should take active part. The key gaps in institutional and administrative capacity and lack of competencies block the advances for better employment policies. This means that all countries will need to invest more in existing administrative capacity to be able to effectively implement employment policies. Preparations for more efficient employment policies in the context of structural and cohesion policy should be launched early in order to align existing policies and instruments for future prospects. Programming, deployment, management, evaluation and monitoring, feedback and financial information, as well as management and control procedures, should explore and remove the negative experience of the Eastern European countries in the absorption of funds from the social, regional and cohesion funds. The research in the previous section reveals that the institutional environment of the Western Balkans is still not mature enough for more effective and efficient employment policies. The latter have undergone several phases of development. Concerns about job protection are replaced by a more mature and balanced policy, including improving institutional performance. Employees have considerable protection by labor laws and collective labor agreements. However, the social arrangements for those outside the mandatory ones are modest in scope and level and are often uncertain. In addition, the protection for people of active age is within labor law for those with formal employment and income support for those without employment at all. They are indispensable for counteracting the risks of poverty, but greater security comes by reducing the risk of rising unemployment through skills acquisition, skills retention, and as part of a motivated and competitive workforce. Similarly, the diversity of employment contracts and employment patterns provide opportunities for more people to participate in employment facilitating transitions in the life cycle. Greater

flexibility on the formal labor market reduces the informal economy – where guarantees lack, and thus contributes to greater overall security. Too often job protection is seen as a social protection of people, and flexibility is considered to be naturally harmful to security. For some time, it is considered that only if there are more jobs, the market problems will disappear and the principle of employment policy is fundamental. This is reflected in the serious concentration of job subsidies and the lack of adequate effectiveness on behalf of the offeror's part in developing and adopting appropriate measures.

Another aspect is that the Western Balkans, as well as Bulgaria, have a huge share of working-age people who emigrate to EU countries. This will undoubtedly have an impact in the coming years on the labor market. The emigrants from the Western Balkans are young and of active age, and the women are rising in numbers. All the countries (except Bosnia and Herzegovina) show a large share of children among emigrants. The majority of them are in the 20-39 age group. This applies to both men and women. Women make up an increasing share of emigrants and even outnumber men in all countries except Albania. Large-scale emigration, especially among highly educated, has important implications for the formation of human capital and labor market dynamics. From a positive viewpoint, the labor market tensions, which are reflected in high levels of unemployment, especially among younger people, are declining due to emigration. In addition, a large influx of money transfers is aimed at countering poverty (World Bank, 2018). At the same time, the return of emigrants (transfer of knowledge and human capital received abroad) and the diaspora's financial investment, may have led to the observed economic growth and productivity (World Bank, 2018).

The EU expansion strategy includes the countries of the Western Balkans and no doubt its enlargement encompasses them. The EU should set out a particular road map for the negotiations with the Western Balkan countries, with a precise timetable and clear commitments for each Western Balkan country, rather than joining at all costs (EU, 2018). The EESC notes that the Western Balkan states have shown willingness and readiness for reforms to bring them into the European Union but points out that the success of these reforms still depends on the state institutions' ability to fulfill and implement them effectively, as well as on the degree of ownership of the process by civil society organizations and the population as a whole. A concrete clear negotiation plan for EU accession for each of the Western Balkan countries with a precise timetable and clear commitments could motivate these countries to implement the necessary reforms more quickly (EESC, 2018). Based on the example of many European countries which have engaged in massive reforms of their labor market and social systems, there are clear common trends. These include shifting taxes from the labor sphere in order to reduce the cost of hiring labor and to facilitate job opening; to update the pension systems by better linking the retirement age with life expectancy; to modernize the education system and the lifelong learning system in order to better reflect today's and tomorrow's needs; to set lasting correlations between wages and productivity in order to maintain competitiveness and preserve job creation over time. In these actions, Member States may take into account models established in different European countries which have been proved to function (EC, 2017). The same should also be done by the countries of the Western Balkans, which are already beneficiaries of various measures. It should be noted that, despite Bulgaria's ten years of membership, numerous and different reforms, pre-accession funds, Cohesion funds

for the period 2007-2013 and almost completed programming period, 2014-2020, our country still remains part of the lagging regions of the EU with a large share of the active age population still emigrating.

Conclusion

The below conclusions can be drawn based on the objectives of the research and the empirical analysis carried out:

- In the sphere of employment between the Western Balkans and EU28, there is no convergence but broadening of the gap. This means that the employment target of the 20-64 age group in Europe 2020 is still very remote for the countries of the Western Balkans.
- Compared to the average for Bulgaria, all Western Balkan countries are increasing their employment, but this process is not accompanied by increased convergence with the EU28. This clearly shows the negative trends in the Balkans which are moving away from the EU28 states on this indicator.
- The reduction of the regional imbalance between the Balkans and the EU28 by the unemployment indicator is a positive moment, but to a large extent this is due to the increased emigration of working-age persons (World Bank, 2018). Also, the disparity between demand and supply of skills and qualifications impedes the functioning of the labor market. The level of undeclared labor remains high (World Bank, 2005, World Bank, 2018), which has an impact on the revenue in the tax and social security system.

Poverty, high unemployment, the shadow economy, low wages, corruption, abuse of office, emigration of skilled workers, discrimination against minorities and brain drain are issues that affect all the countries of the Western Balkans. We can also add the low level of digital skills, with especially pronounced regional disparities, as well as a huge share of NEET's and lack of willingness to take active measures in the labor market. Hence, the pace of drawing near with the countries of the Western Balkans is rather slow and lagging behind the EU region. The current institutional realities in the Western Balkans are not yet able to respond effectively to the complex employment challenges. The Western Balkans, including Bulgaria, have a huge share of working-age people who emigrate to EU states. This will undoubtedly have an impact in the coming years on the labor market. The emigrants from the Western Balkans are young and of active age, and the women are becoming more in number (World Bank, 2018).

With the accession of the Western Balkans to the EU arise the ever more likely and heavily negative scenario for Bulgaria to be grouped together with the Western Balkan countries and, subsequently, the formation of the Balkans as the second or third speed that could be formed within the EU.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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ASSESSING THE EFFECTS OF IMPOSING VAT ON THE SERVICES PROVIDED BY THE BANKING SECTOR – THE CASE OF BULGARIA

The treatment of banking services as VAT exempted is a dominant model and common practice among EU member countries mainly due to the technical difficulties of calculating value added and applying the general credit – invoice method of VAT taxation. Not charging VAT on banking sector results in overtaxation of business customers and undertaxation of final consumers, and creates serious distortions in the economy. With this study and empirical assessment made, we seek to address some of the problems that have not been solved so far and to contribute, at least to a certain degree, to the ongoing academic debate on whether financial services need and should stay VAT exempt. By using a modified mobile-ratio method the current paper explores and assesses economic effects of including banking sector in the range of VAT taxable supplies. To identify the potential gains and losses that could have been generated under a hypothetical case of applying VAT to banking services in Bulgaria we provide a quantitative estimate for the period 2008 through 2016 at two separate levels: (1) banking system, and (2) business consumers of banking services. Finally, we estimate the volume of revenue that could has been accumulated to the State budget during the period under review if banking services were subject to VAT.
JEL: H20; H22; H25; G2

Introduction

A number of solutions that can be found in current tax practice largely depart from the established basic taxation standards, such as the preferences extended in order to promote one activity or another. In fact, not every tax exemption is intended to achieve specific economic or social objectives. Exemptions are sometimes granted for other, purely administrative, technical, legal, etc. reasons and banking sector services are a case in point.

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The main reason for banking sector services not being subject to VAT is the difficulty to determine the tax base correctly. The problems emerge above all in the so-called implicit banking services, such as credit and deposit intermediation, purchase and sale of foreign exchange, etc. There, it is not always easy to identify the exact amount of the margin so as to determine the taxable amount. Other reasons for exemptions of banking services from VAT is the unclear net effect on tax revenue (potential losses), a possible increase of the prices of the services offered by the banking sector, the additional costs of applying VAT (to the government or to the financial intermediaries themselves). At the same time, the banking sector and the financial sector at large generate a rather large amount of value added within the national economies, and this amount remains untaxed. On the one hand, this gives rise to a debate about the need of a change in the tax systems with respect to the treatment of banking services for the purpose of levying VAT and, on the other, an in-depth review of the other distortions typical of the system of exempt supplies.

With current analysis, we seek to explore and assess the effects of including banking sector services in the range of VAT-taxable services. The study is structured into several distinct sections. It begins with a comprehensive review of the existing theoretical and empirical literature on the subject. Section 3 provides information about the sources of data for the purposes of the empirical assessment and presents, in an abridged form, the empirical (mathematical) method of analysis applied. Section 4 presents the results of the study and the quantified effects for the banking sector, the business sector and the budget. Section 5 formulates the conclusions and outlines the opportunities for future studies making it possible to analyse the subject more comprehensively.

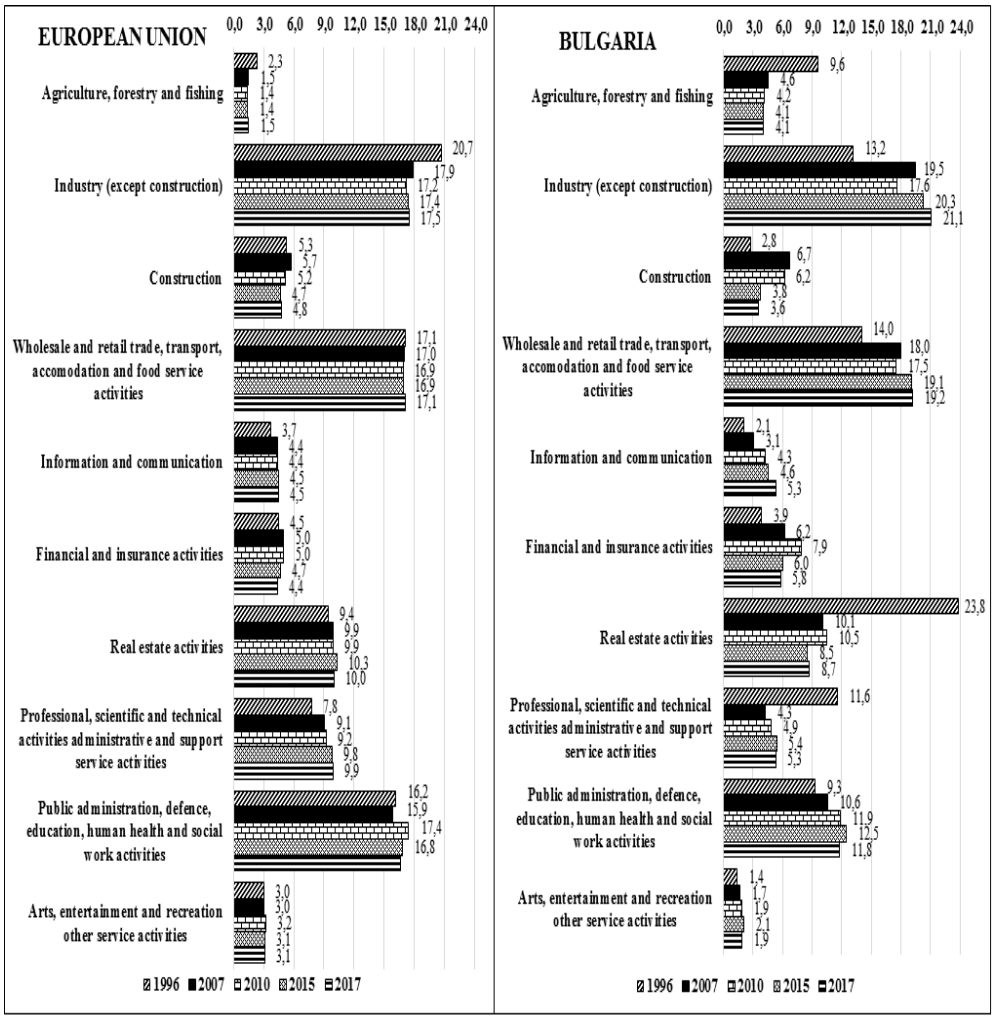
1. Problem statement

The financial sector, and the banking sector in particular, has been growing at an exceptionally brisk pace in recent decades. Hence the significance of financial institutions and above all of the banks as leading financial intermediaries in present-day society (some 85% of the financial sector assets in Bulgaria are managed by commercial banks). Banks facilitate the channelling of enormous amounts of capital from economic agents which temporarily do not need these resources to other economic agents for which the financial assets are crucial for their own development, for the economic development of a particular country, region or community. Thus, the intermediation services offered by present-day banking institutions contribute to stimulating business activity and emerge as a major generator of economic growth. At the same time, the expansion of the banking services sector poses certain risks to the stability of both the financial system and the economy as a whole. Precisely such risks manifested themselves in the conditions of the latest financial crisis (2007-2008). This gives rise to a debate about the need to tax the financial (banking) services sector because, judging from practice, this sector largely enjoys certain preferences, i.e. the financial and banking services sector is supposed to contribute mostly to fiscal stability in the way this is done by the rest of the economic sectors. Most authors single out the value added tax treatment of the services provided by this sector as one of its most significant privileges. Back when VAT was introduced in European and global practice (in the late 1960s and the early 1970s), it was decided to leave financial and

banking services outside the scope of taxation. These services are treated as exempt, i.e. financial and banking service providers are not obliged to charge VAT when they sell these services. This tax practice established itself with time, and we continue to witness its existence at present. On the other hand, the financial and banking services sector is highly dynamic, which finds expression in the rather large amount of value added generated as a result of the business of the institutions operating in the sector.

Figure 1

Industry Value Added (% of GDP)



Source: own calculations based on data from Eurostat.

During the years 1996 through 2017 the weight of financial and insurance activities in the European economy as reflected in the ratio of value added to GDP was almost equal to that one of construction industry and information and communication industry. (Figure 1). EU-wide, the share of the value added by the financial sector grew from an average 4.5% of GDP in 1996 to 5% in 2007. During that period, the sector has registered a quite remarkable growth of value added (expressed as a share of GDP) amounting to 11 percent. It is the information and communication industry as well as the sector of professional, scientific and technical activities that demonstrated higher growth rate of the share of value added in GDP – 22% and 20% respectively. The growth of value added of financial sector in Bulgaria is much more apparent – over 50 percent, with only the construction industry reporting higher growth during this period.

Luxembourg, which is one of the top financial' centres not only in Europe but worldwide, takes the lead in this respect: there, it is precisely the banking sector and the financial sector at large that generates about a quarter of the value added. Bulgaria is among the EU Member States (along with the UK, Ireland, Cyprus and the Netherlands) that also have a significant financial (banking) sector within the context of their national economy. The value added by the Bulgarian banking sector grew from 3.9% of GDP in 1996 to 6.2% of GDP in 2007, reaching almost 8% in 2010.

It should be noted that after the onset of the crisis, the financial services sector remained steady as compared to other sectors of the economy, especially construction, but during the consequent years the share of its value added in GDP has declined. For example, in 2015 and 2017 the share of value added by the financial sector within the European Union decreased to 4.7 and 4.4% of GDP respectively (Figure 1). However, over the last 25-30 years in nominal terms, the value added by the sector has doubled in the EU countries and has more than sextupled in Bulgaria.

The summary information logically begs the question why Bulgarian banks, as well as the rest of the financial intermediaries, continue to provide their services not subjected to VAT (Article 46(1) of the Value Added Tax Act). Nowhere in the world could be found a tax system that has resolved all the difficulties with determining the proper VAT taxable base of financial services. In the EU, these difficulties have been overcome with the exemption system applied and no VAT levied on most of the financial services. Certainly, Bulgaria, being an EU Member State, is obliged to comply with EU tax legislation (Article 135(1) of Council Directive 2006/112/EC), which expressly exempts a large part of financial services and above all the credit and deposit services. Nevertheless, EU legislation also admits certain exceptions, the so-called option to tax, under which the intermediary may charge tax on the services provided in the market. Article 137 of Council Directive 2006/112/EC allows EU member states to enact legislation that provides an option to charge VAT on otherwise exempt financial services (except insurance and reinsurance). It should be mentioned that so far only 8 EU Member States – France, Belgium, Germany, Austria, Estonia, Lithuania, Croatia and Bulgaria have enabled financial service providers to apply it. In fact, this option to tax does not resolve the problems with determining correctly the tax base. Moreover, its application is accompanied by so many restrictions and serious costs that prevent its wide adoption in practice (Merrill, 2011). However, the value added

taxation of financial services has been debated for many years at EU level, but no concrete decision has been taken to impose VAT on financial sector on a global scale.

In 2007, the European Commission submitted two legislative proposals containing package of measures in order to changing EU VAT treatment of financial services, the so called three pillars: re-definition of financial services which are subject to exemption, introduction of a cost-sharing group, allowing economic operators to pool investments and re-distribute the costs of these investments to the members of the group, exempt from VAT, and introduction of a compulsory option to tax, i.e. compulsory for Member States, optional for financial institutions. Despite the active negotiations that followed the proposals the outbreak of the financial crisis changed the focus of debate about financial sector taxation (De la Feria, Lockwood, 2010).

One of the last serious discussions of removing the exemption of VAT on financial services in EU which happened under the Polish Presidency in 2011 had come to a standstill due to the inability of Member states to reach an agreement. As of the beginning of 2019, the option of imposing VAT on financial services has been discussed yet again in the context of the debate on the future of the VAT system in Europe and the long-standing distortions of VAT exempt supplies of the financial sector (European Commission, 2019). The question of removing financial services VAT exemption remains open and proposals to reform VAT rules are still with the Council for discussion.

2. Literature review

The literature available so far does not take a categorical stand in favour or against VAT taxation of the services provided by the banking sector (and by the financial sector at large). A review of the studies dealing with tax treatment of financial and banking services under VAT shows that these studies can be divided into two groups.

The first group of studies applies mainly a conceptual (theoretical-methodological) approach. The reasons why these services are exempt from VAT, on the one hand, and the distortions resulting from this exemption, on the other, have been analysed for years on end. The following principal arguments for not subjecting financial and banking services to VAT are most often pointed out: problems with the calculation of the margin and its allocation so as to determine the value added correctly (Merrill and Edwards, 1996; Jack, 2000; Edgar, 2001; Huizinga, 2002; Honohan, 2003; Prebble and Van Schalkwyk, 2004; Bird and Gendron, 2005; Zee, 2005; De la Feria, 2007; Schenk, 2009; Kerrigan, 2010), the separation of the fee charged by the financial intermediary as a form of value added from the value of the entire cash flow (Garber and Raboy, 1989; Poddar, 2003; Boadway and Keen, 2003; Iwamura et al., 2006), the additional administrative costs of follow-up control (Ebrill et al., 2001), the risk of public disclosure of the value of financial margins which constitutes a trade secret (Amand, 2008; Benedict, 2011), the lack of institutional experience, the low level of pay and work incentives in the public administration, corruption and lack of support by governments (Gendron, 2008), and the increase in the prices of the services offered. Grubert and Mackie (2000) even argue that intermediary services should be exempt because they should not be treated as final goods (since they do

not influence the consumer's utility function and are respectively treated as intermediate goods), hence, they should not attract consumption tax.

In addition to the reasons for the exemption of financial and banking services, the conceptual studies also address the distortions resulting from the current tax practice and from the vigorous development of economic, technical and technological processes. The main problem is outstanding and is further exacerbated, which is probably the reason why a number of authors advocating a change in the taxation technique have gained ground in recent years. The VAT system needs to be reconsidered and updated (modernised) so as to respond adequately to the present challenges. The most commented arguments in favour of including these services in the VAT tax base (respectively, treated as market distortions) include: the large amount of irrecoverable VAT because deductible input tax is not available (Garber and Raboy, 1989; Huizinga, 2002; Borselli, 2009; De la Feria and Lockwood, 2010; PricewaterhouseCoopers, 2011), generation of deadweight loss (emergence of the so-called cascading effect) as a result of which the same turnovers become liable for tax for a second time (Garber and Raboy, 1989; Merrill, 1997; Edgar, 2001; Huizinga, 2002), the effective price of an intermediation service when treated as exempt is considerably higher for business consumers (and their customers) than for consumers borrowing directly from the financial institution (Schenk and Zee, 2004; De la Feria and Krever, 2013; Yilmaz, 2013), vertical integration (self-supply bias) of the phases of the production process in search of indirect mechanisms to minimise the cost of irrecoverable tax (Ebrill at al., 2001; Englisch, 2011, Van Brederode and Krever, 2017), loss of neutrality of taxation and emergence of tax competition (Gillis, 1987; Englisch, 2011; Paardt, 2012), administrative burden as a result of outdated regulations (compliance costs), discriminatory interpretation and implementation of tax legislations (legal uncertainty), litigation (European Commission, 2006; Borselli, 2009; De la Feria and Walpole, 2009; Braakman, 2011).

The second group encompasses studies trying to diagnose the impact of taxing or not taxing the services concerned on the revenue side of State budgets. These studies are considerably fewer in number than the studies stressing above all the conceptual debate on the problem at issue. Just as with the studies in the first group, here, too, the results obtained are somewhat discrepant. The empirical literature predominantly confirms that levying VAT on banking sector services is a solution that can lead to an increase of budget revenues (Genser and Winker, 1997; Kaliva, 2002; Huizinga, 2002; Schatan, 2003; Mirrlees at al., 2011; Büttner and Erbe, 2014; Næss-Schmidt at al., 2016). According to the European Commission (2011), the system of financial and banking services exemptions from VAT generated a potential loss of revenue to EU Member States' State budgets in an amount approximating EUR 16-20 billion for the period between 2000 and 2009. Even though quite a few of the conceptual analyses are apprehensive about the potential adverse impact of levying VAT on financial and banking services on budget revenue, this assumption has so far been borne out by only one more comprehensive study. This study was conducted by PricewaterhouseCoopers (2010) in cooperation with Professor B. Lockwood.

Several key factors explain the discrepancies in the results on budget revenue impact arrived at in the empirical studies conducted so far. On the one hand, these discrepancies are essentially due to the territorial scope of each one of these studies (i.e. the cohort of

countries for which the effects are quantified), the different time periods, the level of development of the banking sector and the financial sector at large, and above all the rather limited information available. On the other hand, a universal methodology for the evaluation of the effects on budget revenues is not available, at least for the time being. What is essentially lacking is a commonly accepted approach to tax banking sector services. Therefore, we aim to bring together the positive aspects of each one of these empirical studies and catalyse the arrival at a realistic assessment of the change in the manner of taxing financial and banking services in Bulgaria.

3. Methodology and Data

Since the early 1990s, various methods have been proposed for charging VAT on financial and banking services. The methods analysed can be classified into three large groups: generally applicable methods (credit-invoice method, subtraction method and addition method), alternative treatments of the system of exempt banking services (levying reduced or zero rate VAT, provisions for relief of input tax, taxation limited to explicit services, where the price takes the form of a fee or commission) and 'transaction-by-transaction' methods (cash flow method, tax calculation account, truncated cash flow method, modified reverse-charging approach (Zee, 2005) and mobile-ratio method (Laborda and Peña (2016).

Whatever method is applied, it should be based on the credit – invoice method because the latter is used as an essential tool for VAT computation in almost all countries worldwide. Still, it should be emphasised that the tax-credit method is difficult to use to identify the value added generated as implicit charge for some financial and banking services and, in this case, a way to modify this method should be sought. Weighing the pros and cons of the approaches that have been proposed so far and taking into consideration developments in recent years, we are of the opinion that the mobile-ratio method designed by Spanish researchers Laborda and Peña (2016) is the most suitable one to apply. This method largely solves most of the current problems with the determination and allocation of the financial margin (by applying an adjustment ratio K representing the fraction between the financial margin generated during the previous period (BM_{P-1}) and the total value of the margin services for that same period (MBS_{P-1})) for the purposes of charging VAT, and it is also fully compatible with the credit-invoice method, i.e. is not supposed to put an extra burden on the administration (in terms of training, control, legislative amendments), nor would it encumber the intermediaries themselves with heavier investment in accounting software and extra expert consultations.

In order to minimize the cost of seeking the correct calculation and distribution of the spread of margin services, including any legislative and allocation arrangements, it is preferable to specify an adjustment ratio (K) to apply to the entire set of this type of service over the selected tax period. Calculation of this ratio does not guarantee a maximum degree of accuracy in determining the tax base and tax liability, but it helps to simplify the VAT model and to include banking services in the tax base. In essence, the data needed to calculate the ratio is obtained by procedures known to the intermediaries with a view to their accountability over time. For each subsequent tax period the adjustment ratio K will

be different. In Bulgaria, the obligation under the VAT Act is set on a monthly basis. However, in order to simplify the procedure, this ratio may be calculated for taxing purposes on a quarterly, semi-annual or annual basis. This will make the process easier from an administrative point of view. Making a decision on the periodicity of recalculating this ratio is of particular importance and should not be overlooked. The solution must be in line with the dynamics observed in the variables determining the ratio K. If this dynamics is significant, it is preferable to use shorter periods (such as monthly or quarterly), whereas if the dynamics is insignificant, then it is better to set it on a semi-annual or annual basis. Adjustment ratio K can be calculated in a manner indicated in equation (1):

(1) $K= BM_{P-1} / MBS_{P-1}$

Besides this, the present paper attempts to build on the afore-mentioned method by adding the assessment of certain effects which are not addressed by Laborda and Peña (2016). The methodology we use analyses the effects of replacing the current exemption system by imposing VAT on banking services in Bulgaria at three separate levels: (1) an analysis of the effects on the banking system, (2) an analysis of the effects on the business consumers of banking services, and, above all, (3) an analysis of the effects on the State budget. There is also a difference in the methodology for the assessment of investment cost (on fixed assets) in respect of which the financial intermediary will be entitled to deduct input tax. Finally, the probably most distinctive feature of the methodology is the evaluation of the cascading effect and its elimination and the consequences of this elimination above all for the budget.

Banking system

Two important aspects need to be analysed at the level of the banking system. On the one hand, the banks' 'gross' liability for tax arising from the now taxable services they provide and, on the other hand, assessing the amount of input tax which the banks will be able to recover as a result of the change in the tax treatment of banking services. The assessment is done separately for margin banking services and for explicit banking services, i.e. the tax is applied to the broadest possible range of services. The tax base for the margin services provided (TB[MBS]) will equal the difference between the total output of these services (MBS) and the value of the cost of irrecoverable VAT incurred by the banking system which is indirectly (implicitly) included in the value of this type of services (NVAT[MBS]), taking into account the influence of the adjustment ratio k, the amount of input tax for the taxable margin services before the change in the manner of taxing banking services (VAT[MBSBVAT]) and taking account of the share of sales of extra-Community exports (%X[BS]). The amount of input tax for the taxable margin services before the change in the model of taxation is included in the calculation in order to determine the value of irrecoverable VAT which banks pass through in the prices of their services. The computation procedure assumes that after the change in the manner of taxing banking services the intermediaries in this sector may not deduct the entire cost of VAT which they were previously unable to recover, i.e. that they may not subtract the entire cost from the value of the services they provide. That is why yet another variable is inserted to take account of the extent of cost reduction ($z \in [0;1]$). The computation model assumes

basically that, for the purposes of neutral taxation, z should equal 1, but the ensuing results can be verified additionally at z<1. If z=0, this means that the banks will not subtract the undeducted cost from the system of exempt supplies and will proceed with charging the tax rate directly to the existing prices. The amount of input tax deducted in conditions of exempt banking services is related to the part of services provided by the banking system which is subject to tax.

(2) TB[MBS] = [(MBS – NVAT[MBS] * z) * k] * (1 – %X[BS])

The tax base for the explicit banking services provided (TB[EBS]) will be arrived at in a similar way, the only difference being that an adjustment ratio k is not applied:

(3) TB[EBS] = [EBS – NVAT[EBS] * z] * (1 – X%[BS])

The liability of the banking system (VAT[BS]) is obtained as a product of the total tax base (TB[BS]=TB[MBS]+TB[EBS]) and the applicable VAT rate t.

(4) VAT[BS] = TB[BS] * t

The total effect for the banking system from the changed tax policy (ΔBS) is determined on the basis of the liabilities for tax (VAT[BS]) which arise for the banks because their services are included in the VAT tax base, but also considering the entitlement of those banks to deduct the VAT paid on costs incurred for taxable purchases (VAT[TC] = (E[BS]-NTP) * t, where E[BS] shows the costs incurred by the banking system, including costs of fees and commissions, administrative costs and investment costs, whereas NTP is the non-taxable part of the banking system's costs), as well as taking account of the liabilities for tax (VAT[BSBVAT]) and the amount of input tax (VAT[TCBVAT]) before the change itself.

(5) ΔBS = (VAT[BS] – VAT[TC]) – (VAT[BSBVAT] – VAT[TCBVAT])

Business consumers

One advantage of the computation method applied is that it assesses the second-round effects for the consumers of banking services and their customers. The exemption of banking sector services from VAT places a significant burden on the business consumers of these services in the sense that the lack of an explicitly charged tax limits their ability to benefit from input tax as well as because of the implicit increase of the prices of the services themselves with the inclusion of the cost unrecoverable by the intermediary. This generates a significant tax burden upon subsequent sales down the chain. With the change in the way banking services are treated for the purposes of VAT taxation, tax is already actually charged on the price of the banking service and, respectively, the consumer of these services can claim input tax. To this end, the value of the services which are used by business consumers must be determined. The computation method here, just as with the banking system, can be viewed as a sequence of several stages: calculating the part of banking services that is consumed by business consumers, calculating the amount of input tax that business consumers can deduct, and taking account of the net effect, including a calculation of the amount of the eliminated cascading effect. The amount of input tax for

business consumers (VAT[BTC]) is that part of the tax base (of the banking system) which is allocated to business consumers (BCBS=TB[MBS] * c + TB[EBS] * d, where c and d are the share of margin banking services and explicit banking services consumed by business consumers), multiplied by the tax rate (t) applicable to banking services. Therefore, the total amount of input tax can be calculated in a manner indicated in equation (6):

(6) VAT[BTC] = BCBS * t

The amount of the cascading effect (TCE) is the part undeducted by the business consumer in conditions of exempt supplies, thereafter included and taxed as part of the price of the business services provided. In order to calculate this part, account has to be taken of the value of the banking services before the change in the tax system (BCBS[BVAT]) and after that change (BCBS), i.e. the net effect for business consumers. The values of margin banking services and explicit banking services include the cost of irrecoverable VAT in the price of these services.

(7) TCE = (BCBS[BVAT] – BCBS) * t

State budget

The inclusion of banking sector services in the tax base will generate an additional budget revenue from VAT (VAT[BS]) but, at the same time, will give rise to an entitlement of the provider of the financial services and of the consumers of these services to deduct full input tax (VAT[TC]) and (VAT[BTC]), in addition to the input tax from which they benefited before the change. The ultimate effect (ΔBB) of the change in the tax system will depend on all components discussed so far and above all on the structure of consumption of banking services and the amount of the eliminated cascading effect (TCE). The assessment of the effects on the State budget must also take into consideration the changes in tax revenues from the levy of other types of taxes on these services. Thus, if it is assumed that VAT is charged on the value of the banking service before charging the existing tax on interest income from deposit accounts (TIPDA), it should be borne in mind that the tax base for the income tax would be lower than in the general case, where the tax is charged directly, without VAT on the banking service. The reduction will depend on the value of the adjustment ratio k and the tax rate t (ΔTR[TIPDA]=TR[TIPDA] * k * t). The ultimate effect on the budget balance can be represented as follows:

(8) ΔBB = ΔBS – (VAT[BTC] – VAT[BTCBVAT]) – TCE – ΔTR[TIPDA]

Mainly data reported by the Bulgarian National Bank (BNB) are used for the purposes of assessing the effects of an introduction of VAT on banking services. The data are aggregated and cover the activity of the entire banking system. The data used refer to the situation as of 31 December of each calendar year. The information is augmented by data from the annual financial statements and the annual activity reports of the commercial banks, the Bulgarian Deposit Insurance Fund, the annual reports of the Ministry of Finance on the implementation of the State budget of the Republic of Bulgaria, and data from the Supply Use Tables of the National Statistical Institute (NSI). The computation procedure

seeks to identify the potential effects of applying the tax to banking services in the period between 2008 and 2016.

The methodology is developed and applied on the basis of certain assumptions:

- All banking services must be included in the VAT tax base;
- All services provided by banks in Bulgaria are subject to taxation with standard VAT rate of 20%;
- Providers of banking services will adjust the prices of these services by eliminating the implicitly included tax before charging VAT;
- Business consumers will adjust the prices of their goods and services in a manner reflecting the changes in the formation of their total liability for tax.

4. Results

Analysis of the effects on the banking system

Table 1 shows that the inclusion of banking services in the taxable VAT base will help to provide a significant resource to the State budget, ceteris paribus. The gross amount of tax liabilities for the banking sector (VAT[BS]) varies between BGN 585 million and BGN 830 million in the period 2008-2016, but in the result of a change in the tax system, Bulgarian banks would be entitled a tax credit (VAT[TC]) amounting to BGN 170 million annually. At first glance, the main burden of introducing a new value added tax on these services would be imposed on financial intermediaries operating in the sector.

Applying the methodology shows (Table 1) that if all banking services are included in the VAT tax base during the period between 2008 and 2016, the banking system in Bulgaria would have been incurred a liability (VAT[BS] – VAT[TC]) in an amount ranging between BGN 411 million and BGN 645 million.

In order to determine more accurately the ultimate effect for the banking system (ΔBS) of the change in the tax practice, the liability for tax (VAT[BSBVAT]) and the input tax deductible before the tax reform (VAT[TCBVAT]) have to be eliminated (Table 2). The results in Table 2 do not differ significantly from those pointed in Table 1 above. Under the current tax practice of financial (banking) services exempted from VAT, the proportion of those services subject to VAT is too low (about 7%).

The quantitative assessment above is presented at several levels (gross tax liability, net tax liability and total effect) in order to outline the effect less on the intermediaries themselves than on the State budget. The "real" effect on the banking system will depend to a large extent on the ability of intermediaries to pass the tax burden on service consumers by increasing the prices of their services. The final consumers of banking services will take most of the burden on the banking sector (as shown in Table 1 and Table 2) as opposed to registered business consumers of these services.

If commercial banks in Bulgaria do not change the prices of their services, the burden of introducing VAT on banking services will be entirely at the expense of intermediaries operating in the sector.

Table 1

Tax liability for the banking system (BGN millions)

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016
Tax base and „gross“ tax liability for the banking system									
%X[BS]	0.80%	0.12%	0.01%	0.03%	0.12%	0.25%	0.11%	0.12%	0.13%
MBS	7048.37	7475.95	7224.76	7189.54	7007.32	6782.05	5362.42	4582.65	3861.72
NVAT[MBS]	105.34	115.067	99.765	100.922	86.3212	121.614	119.626	116.5323	92.87486
K[3]	0.48	0.41	0.40	0.43	0.42	0.40	0.38	0.52	0.64
TB[MBS]	3287.11	2977.69	2844.73	3015.97	2903.27	2662.32	1991.08	2301.78	2408.25
EBS	874.74	823.24	844.19	874.96	876.88	930.60	950.82	1026.59	1063.25
NVAT[EBS]	5.15	5.21	5.33	7.25	1.72	8.52	12.93	19.23	20.18
TB[EBS]	862.62	817.07	838.79	867.44	874.14	919.77	936.84	1006.18	1041.76
TB[BS]	**4149.72**	**3794.75**	**3683.52**	**3883.41**	**3777.41**	**3582.09**	**2927.92**	**3307.95**	**3450.01**
VAT[BS]	**829.94**	**758.95**	**736.70**	**776.68**	**755.48**	**716.42**	**585.58**	**661.59**	**690.00**
Tax credit									
E[BS]	1193.21	1073.14	1029.75	1092.23	1178.82	1247.58	1197.80	1290.56	1159.54
NTP	273.42	178.48	271.76	354.31	397.61	329.62	324.87	377.11	345.38
VAT[TC]	**183.96**	**178.93**	**151.60**	**147.59**	**156.24**	**183.59**	**174.59**	**182.69**	**162.83**
Net tax liability									
VAT[BS] – VAT[TC]	**645.98**	**580.02**	**585.1**	**629.09**	**599.24**	**532.83**	**410.99**	**478.9**	**527.17**

Source: own calculations; z=1, t=20%

Table 2

Total effect on the banking systems (BGN millions)

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016
VAT[BS] – VAT[TC]	**645.98**	**580.02**	**585.1**	**629.09**	**599.24**	**532.83**	**410.99**	**478.9**	**527.17**
VAT[BSBVAT]	66.67	57.75	46.44	39.17	67.31	51.63	41.36	46.13	48.89
VAT[TCBVAT]	73.47	58.65	46.50	39.42	68.20	53.46	42.03	46.93	49.78
ΔBS	**652.79**	**580.92**	**585.16**	**629.34**	**600.13**	**534.66**	**411.67**	**479.70**	**528.06**

Source: own calculations; z=1, t=20%

Analysis of the effects for business consumers of banking services

The calculations made show a substantial amount of input tax from which business consumers would benefit if banking services were taxed with VAT.

[3] The adjustment ratio K data indicates a relatively constant share of financial intermediaries margin in comparison with the total value of the services offered by them in the period 2009-2014, which also favors the use of annual data in order to simplify the calculation procedure.During the years 2015 through 2016 there is a sharp rise in the value of the ratio. This is due to the growing financial' margin, against the decline in value of margin bank services. Although there is a reduction in interest receipts and interest payments, the spreads between them remain and even increase.

Table 3

Tax credit for business consumers (BGN millions)

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016
C	0.66	0.57	0.54	0.55	0.53	0.52	0.49	0.49	0.5
TB[MBS]	3287.11	2977.69	2844.73	3015.97	2903.27	2662.32	1991.08	2301.78	2408.25
D	0.49	0.46	0.45	0.48	0.45	0.47	0.42	0.37	0.38
TB[EBS]	862.62	817.07	838.79	867.44	874.14	919.77	936.84	1006.18	1041.76
VAT[BTC]	**514.78**	**415.36**	**383.01**	**412.21**	**385.55**	**363.15**	**275.09**	**301.12**	**322.52**

Source: own calculations; Business consumption of margin services (c) and explicit services (d) are presented with coefficient, t=20%

The average annual amount of input tax for the period between 2008 and 2016 approximates BGN 375 million and, respectively, the same amount of tax would be included in the price of the service they consume, i.e. the change in the manner of taxing banking services would not result in an appreciable difference for business consumers in this respect. The change would make a difference for these consumers to the extent that the financial intermediary will adjust its price because of the deductibility of input tax for services that are already taxable. That is why the net effect for business consumers (NEBC) needs to be calculated, including a change in the liabilities for tax, a change in the amount of input tax and a change in the value of services consumed by business. With regard to the first two elements, there is no change. In conditions of exempt supplies, the business sector is not liable for tax, nor is it entitled to deduct input tax, whereas in conditions of taxable supplies, business consumers pay VAT as part of the price of the services and, at the same time, become entitled to deduct input tax amounting to this cost.

Table 4

Net effect for business consumers (BGN millions)

Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016
BCBS	2573.88	2076.79	1915.03	2061.05	1927.76	1815.73	1375.47	1505.62	1612.62
BCBS[BVAT]	2609.05	2105.81	1938.96	2087.95	1947.64	1844.96	1403.27	1542.30	1650.25
NEBC	**35.18**	**29.02**	**23.93**	**26.90**	**19.87**	**29.23**	**27.79**	**36.69**	**37.63**

Source: own calculations

The results in Table 4 show that the change in the manner of taxing banking services with VAT will result in a relief for business consumers in an average annual amount of BGN 29-30 million for the period between 2008 and 2016. These results would be valid if it is assumed that, as a result of the change in the manner of taxing banking services, the financial intermediary decides to reduce the prices by the entire cost which it was previously unable to recover, i.e. by assuming that z=1 in the above computation procedure. The possibility that z<1 and the after-tax value of the banking services would be higher cannot be ruled out, and this would erode the net effect for business consumers (NEBC).

Table 5

Net effect for business consumers and amount of eliminated cascade effect (BGN millions)

Z	Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016
0	NEBC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.1	NEBC	3.52	2.90	2.39	2.69	1.99	2.92	2.78	3.67	3.76
	TCE	0.70	0.58	0.48	0.54	0.40	0.58	0.56	0.73	0.75
0.2	NEBC	7.04	5.80	4.79	5.38	3.97	5.85	5.56	7.34	7.53
	TCE	1.41	1.16	0.96	1.08	0.79	1.17	1.11	1.47	1.51
0.3	NEBC	10.55	8.71	7.18	8.07	5.96	8.77	8.34	11.01	11.29
	TCE	2.11	1.74	1.44	1.61	1.19	1.75	1.67	2.20	2.26
0.4	NEBC	14.07	11.61	9.57	10.76	7.95	11.69	11.12	14.67	15.05
	TCE	2.81	2.32	1.91	2.15	1.59	2.34	2.22	2.93	3.01
0.5	NEBC	17.59	14.51	11.96	13.45	9.94	14.61	13.90	18.34	18.82
	TCE	3.52	2.90	2.39	2.69	1.99	2.92	2.78	3.67	3.76
0.6	NEBC	21.11	17.41	14.36	16.14	11.92	17.54	16.68	22.01	22.58
	TCE	4.22	3.48	2.87	3.23	2.38	3.51	3.34	4.40	4.52
0.7	NEBC	24.62	20.31	16.75	18.83	13.91	20.46	19.46	25.68	26.34
	TCE	4.92	4.06	3.35	3.77	2.78	4.09	3.89	5.14	5.27
0.8	NEBC	28.14	23.21	19.14	21.52	15.90	23.38	22.24	29.35	30.11
	TCE	5.63	4.64	3.83	4.30	3.18	4.68	4.45	5.87	6.02
0.9	NEBC	31.66	26.12	21.54	24.21	17.88	26.30	25.01	33.02	33.87
	TCE	6.33	5.22	4.31	4.84	3.58	5.26	5.00	6.60	6.77
1	NEBC	35.18	29.02	23.93	26.90	19.87	29.23	27.79	36.69	37.63
	TCE	7.04	5.80	4.79	5.38	3.97	5.85	5.56	7.34	7.53

Source: own calculations

Table 5 calculates the value of the net effect for business consumers with every possible reaction by the banking system regarding the cost of VAT that is implicitly included in conditions of exempt supplies, once the tax system is changed. The net effect for business consumers actually determines the extent to which the change in the tax system would contribute to eliminating the cascading effect (TCE) of VAT on banking services. The data show that if it is assumed that the previously undeducted cost is fully eliminated when setting the value of banking services (i.e. z=1), the amount of the eliminated cascading effect ranges between BGN 3.97 million and BGN 7.34 million. At the other extreme is the value if it is assumed that banks in Bulgaria decide against any reduction of the prices of the services they provide and the tax rate is applied to the unchanged value of these prices (i.e. z=0).

Analysis of the effects for the State budget

Calculating the total budget effect requires to take into account the loss of revenue from the tax on interest income from deposit accounts (ΔTR[TIPDA]), introduced in 2013, as a result of the VAT taxation of these services. The calculations make it possible to assess the

potential effect on the budget balance (ΔBB) if VAT were charged on the services provided by the banking sector in the period between 2008 and 2016.

Table 6

Total effect for the State budget (BGN millions)

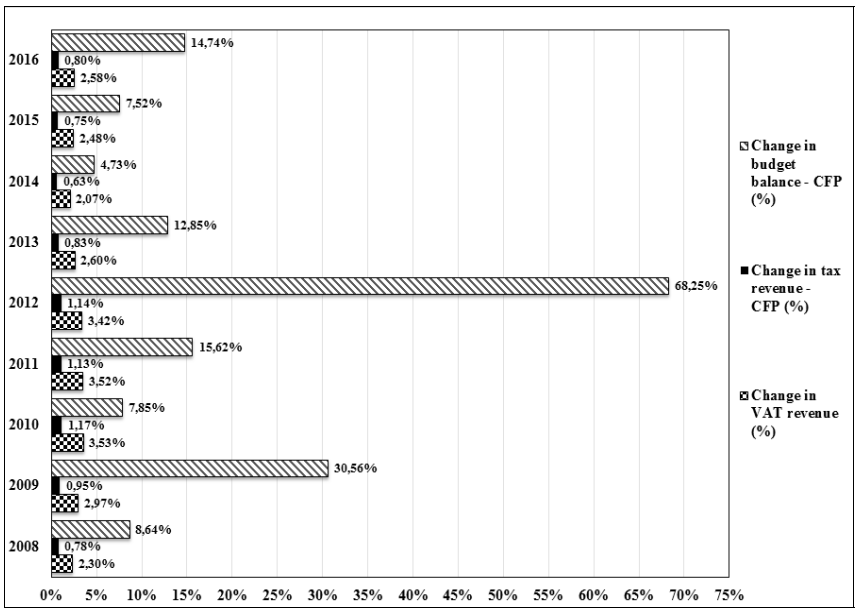
Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016
ΔBS	652.79	580.92	585.16	629.34	600.13	534.66	411.67	479.70	528.06
VAT[TBC]-BCCR[BVAT]	473.74	383.78	358.86	391.42	351.23	337.04	255.68	280.14	299.70
ΔTR[TIPDA]	0.00	0.00	0.00	0.00	0.00	6.61	5.00	5.37	4.49
TCE	7.04	5.80	4.79	5.38	3.97	5.85	5.56	7.34	7.53
ΔBB	**172.02**	**191.34**	**221.52**	**232.54**	**244.92**	**185.17**	**145.44**	**186.85**	**216.36**

Source: own calculations

Other things being equal, the inclusion of banking services in the tax base during the period between 2008 and 2016 results in an increase of VAT revenues by an average annual BGN 200 million (or 2.83%), a 0.91% rise in total tax revenues under the Consolidated Fiscal Programme (CFP), and an 18.97% improvement of the budget balance. For 2012 alone, the recorded budget deficit would be 68.25% lower if the services at issue are part of the taxable supplies (Figure 2).

Figure 2

Change in budget indicators as a result of the imposing VAT on the services provided by the Bulgarian banking sector for the period 2008-2016



Source: own calculations based on data from the Annual reports of the Ministry of Finance on the implementation of the State budget of the Republic of Bulgaria

The conclusion is more than obvious: eliminating the problems typical of the conditions of exempt banking services can contribute, among other things, to an increase of State budget revenues. Given the certain assumptions that the proposed model makes, calculations show that the VAT revenue side of Bulgaria's budget would change favourably in the period between 2008 and 2016 compared to the pre-existing system of exempt supplies. Even with an allowance for the loss of revenue from the deposit interest income tax, the budget would nevertheless benefit from the change in the tax system.

These results would certainly be welcomed, too, by the consumers of banking services which are registered for VAT, as they would be able to reduce their costs by an average annual BGN 19-38 million, even provided the prices of their goods and services are lowered. To a certain extent, the burden of introducing VAT on banking services would fall mainly on the final consumers of these services. Charging VAT at the rate of 20% would definitely raise the price of banking services for final consumers. The exact amount of this rise is a matter of calculations and depends on the extent to which those consumers would react to the change. If intermediaries are allowed to eliminate the VAT implicitly included in the price of services in conditions of exempt supplies and charge VAT on this 'tax-free price' in conditions of taxable supplies, prices will rise by an average of some 18.60% for the period between 2008 and 2016.

Taking into consideration the cascading effect and the possible reduction of the prices of non-financial goods and services or financial goods and services at a later stage down the chain, the burden on the final consumer may decrease by an average of some 0.34 percentage points over the period. The calculation method admits the subtraction of financial intermediaries' cost of irrecoverable VAT which is conventionally included in the value of the services in conditions of exempt supplies, but if this does not happen and the prices are not adjusted, i.e. if VAT is charged on the prices as they are, the final effect for the budget would be better. The improvement would be in the order of BGN 7.59 million – 15.90 million, but this would be at the expense of a larger tax burden on the final consumers of financial and non-financial services.

5. Conclusion

Making a decision on a change in the taxation of one type of goods and services or another is indisputably a complicated process requiring weighty arguments in favour of taking such a step. This process must reflect above all an analysis of the problematic aspects of the existing tax system, including both advantages and disadvantages, but also the effects that a change of the system would entail. Other important factors are the exact way in which the change will be handled and whether prerequisites for such action exist. The process of changing any tax system should by anyway juxtapose different viewpoints and above the viewpoints of the parties affected: taxable entities, on the one hand, and governments and tax administrations, on the other. That is why the VAT treatment of banking services has been and still is such a debatable issue and is expected to retain its relevance in the near future as well.

Using a modified mobile-ratio method we approximate the fiscal revenue loss from VAT exempt banking services and tax relief loss for the business consumers of these services. The results of the current study show that if banking sector in Bulgaria was subject to VAT during the period 2008-2016 as other sectors in the economy there would be a positive revenue effect – additional revenue would have been generated for State budget amounting to BGN 200 million annually. This amount reaches about 2.5-3% of the total VAT revenues collected annually during the period under review. At the same time, such a change would have resulted in a far not insignificant effect for the business sector using these services. The "tax relief" for business sector (or the value of irrecoverable VAT) that would arise from such a change in fiscal policy depends mostly on the potential for eliminating the cascading effect typical in terms of exempt supplies. The average annual amount of this relief (net effect) in our hypothetical case is substantial – approximately BGN 30 million. This value would have been generated if assuming that the calculated amount of cascading effect was completely eliminated.

Under VAT exempt treatment of banking services transactions between banks and final consumers are under-taxed. Hence, final consumers of banking services are expected to be most negatively affected by the introduction of VAT through elimination of the advantages of under taxation they possess over those of business sector. The "real" effect will depend to a large extent on the ability of intermediaries to pass the tax burden on service consumers by increasing the prices of their services. In addition, the change in the Bulgarian tax system would create exceptional prerequisites for an improvement of the neutrality of taxation. Applying a broader tax base with fewer exemptions would ease the reporting and control process, would reduce the possible losses from litigation, and would facilitate a partial or full elimination of the main problem with the cascading effect. Our study is a first attempt to assess the effects of imposing VAT on banking sector services in Bulgaria. The methodology presented can be used as a basis for a future larger-scale study involving all sub-sectors of the financial sector and covering a longer time period of research.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
ECONOMIC STUDIES

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PROFILING COMPANIES ACCORDING TO THE ADOPTED PRICING STRATEGY

The study presents the results from empirical research on the profiling of the companies operating in Bulgaria in terms of the pricing strategy adopted by them: cost-based pricing, competition-based pricing and value-based pricing. It includes a literature review of the theoretical and empirical research on pricing strategies, studies the most common pricing strategies used by the companies operating in Bulgaria and suggests the main criteria used to profile companies in terms of the pricing strategy adopted by them.
JEL: M39; D47

Introduction

Price is a complicated economic category. Within the marketing system of a company, it is used as a means of attracting customers, a competitive tool and an opportunity for an inflow of financial resources. Price is the most powerful marketing tool companies have at their disposal (Stiving, 2011). It is the most flexible element of the marketing mix and with it a company can most swiftly achieve impact on a price-sensitive market. In marketing policy, company policy respectively, price is the lever that influences the most the change in the profit, all other conditions being the same. A price rise of 1% leads to an 11.1% increase in the operating profit without a change of the volume (Marn and Rosiell, 1992).

Price is a bridge between a company and its customers. In terms of demand, product price is the quantitative assessment of the perceived value that a company creates for its consumers. In terms of supply, price is the strategic and tactical expression of the way a company wants to compete within the context of its business model and to make a profit (Lancioni, Schau and Smith, 2005). That is why every company needs an effective pricing strategy offering the customer a value and ensuring the company high economic results.

The development and implementation of pricing strategies is a priority of the modern business. Nowadays pricing is crucial for shareholders, financial analysts and company

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managers. Pricing decisions are among the major and most important business decisions (Dholakia, 2017). Managers are realising more and more the importance of price as a key element determining the volume of company revenue and profit to the greatest extent. A study of Simon & Kucher Partners shows that 80% of the respondents in the Global Pricing & Sales Study (GPSS) for 2017 consider pricing as the biggest engine of profit growth in the future and cost reduction less acceptable. A pricing manager is among the positions in greatest demand in large corporations. All this shows that nowadays the issue of prices and pricing is topical.

The object of research of this study is the pricing strategies of the companies operating in Bulgaria. The subject of research is the profiling of companies in terms of the pricing strategy adopted by them.

The aim of this study is to present the results related to the profile of the companies operating in Bulgaria in terms of the pricing strategy adopted by them[3].

To achieve this aim the following research issues will be considered:

1. To find out which are the most common pricing strategies of the companies operating in Bulgaria;
2. To suggest the main criteria for the profiling of the companies operating in Bulgaria;
3. Based on the suggested criteria to profile the companies in terms of the pricing strategy adopted by them.

To achieve the aim of the study and explore the scientific questions, a survey was conducted in the period July-August 2017.

1. Literature Review

A literature review is made in this part of the study with a focus on the research on the essence of pricing strategies as well as on the empirical research on company profiling based on various criteria and in terms of the adopted pricing strategy.

1.1. Theoretical literature review

The purpose of this section is to summarise the authors' viewpoints on the use of the concept of pricing strategy. This needs to be done in order to clarify the concept of pricing strategy used in this study as well as to enumerate the kinds of pricing strategies that are the object of research in it.

The term pricing strategy is used in two different meanings:

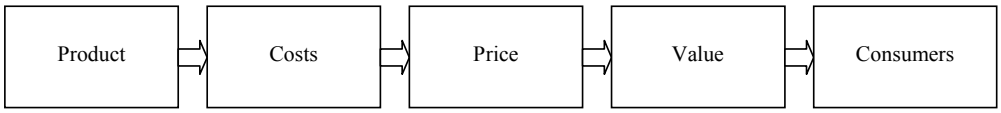
[3] The results in the study are part of bigger scientific research under UNWE project № R&D ScR-16/2017 focused on the development and implementation of pricing strategies by the companies operating in Bulgaria.

- In its broad sense, a pricing strategy is viewed as a framework for making pricing decisions, a sequence of interrelated stages in which a set of key sections for particular pricing decisions is differentiated. Revealing the content of each stage and its correlation with the other ones answers the question of what it is to develop a company pricing strategy (Gladkih, 2013).
- In its narrow sense, a pricing strategy is related to options for a choice between alternatives as well as to making strategic pricing decisions, i.e. decisions that could lead to a change in the strategic positions of a company in the future. In the narrow sense, the pricing strategies include cost-based pricing, competition-based pricing and value-based pricing. Over the last years, it is these pricing strategies that are most often the object of a comparative analysis (Hinterhuber (2008), Cram (2010), Johansson et al. (2012), Macdivitt and Wilkinson (2012), Nagle, Hogan and Zale (2014), Smith (2012), Schindler (2012), Liozu (2015), Kotler and Armstrong (2018), etc.).
  - Cost-based pricing: It is a pricing strategy in which prices are determined by production and marketing costs to which is added a profit element based on the efforts made and the risk taken.

    First, „good" products are designed and developed. Then, the costs for their production and sale are determined. To them is added the desired profit volume and, thus, the „right" price is set. Finally, consumers are convinced in the value of the company product (Figure 1).

Figure 1

Cost-based pricing



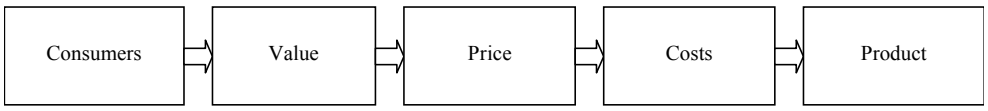
Source: Adapted from Nagle, Hogan and Zale (2014). The Strategy and Tactics of Pricing – A Guide to Profitable Decision-Making. 5 ed. Pearson New International Edition, p. 8.

  - Competition-based pricing: It is a pricing strategy in which the prices of company products are determined based on competitors' prices and pricing strategies. Consumers assess product value based on competitors' prices for similar products. When assessing a competitor's pricing strategy, a company has to answer a few questions: how is the company market offering perceived compared to competitors' similar ones in terms of value, how strong are the current company competitors and what are their pricing strategies now (Kotler and Armstrong, 2018).
  - Value-based pricing: With this pricing strategy price is determined based on consumers' perceptions of the product value.

    First, consumer needs and perceptions are considered in terms of value. A target price corresponding to these perceptions is set. Then, production and marketing costs are taken into consideration. Finally, a product that offers the desired customer value is designed and offered at the fixed target price. (Figure 2).

Figure 2

Value-based pricing



Source: Adapted from Nagle, Hogan and Zale (2014). The Strategy and Tactics of Pricing – A Guide to Profitable Decision-Making. 5 ed. Pearson New International Edition, p. 8

Over the recent years, an increasing number of scientists has stressed the importance of the nature and role of the value-based pricing strategy (Hinterhuber (2004, 2008), Cram (2010), Cressman (2012), Johansson et al. (2012), Liozu, Hinterhuber, Boland and Perelli (2012), Macdivitt and Wilkinson (2012), Smith (2012), Gladkih (2013), Lipsits (2014), Simon (2015), Voicheska (2015), Kostova-Pickett (2017), etc.). Hermann Simon (2015, p.13) says he has been asked thousands of times which the most important aspect of pricing is and he has always answered that it is „value". Kienzler and Kowalkowski (2017) make a meta-analysis of the literature about pricing strategies in the B2B[4] markets published between 1994 and 2013. The object of analysis includes 23 articles published in Scopus and two book chapters. The findings show that B2B companies are becoming increasingly client-oriented and implement pricing practices based on customer value. Insight2profit (2017) shows the trends in pricing that bring companies a competitive advantage and should not be underestimated. The first of these trends says that value-based pricing is replacing cost-based pricing. This means that theorists attach greater importance to the advantages of value-based pricing compared to cos-based pricing and realise that without an adequate system for control and allocation of high costs there is a waste of resources and disappointing results (Tanushev, 2009).

The review of the books, scientific articles, monographs and publications about prices, pricing and pricing strategies in particular, leads to the following conclusions:

- the term pricing strategy is used in two senses (broad and narrow) in order to describe two fundamentally things;
- over the recent years, three pricing strategies have been the object of comparative analysis: cost-based pricing, competition-based pricing and value-based pricing;
- there is an upward trend in the number of publications about value-based pricing.

1.2. Empirical literature review

What groups the studies mentioned below is the subject of research which is company pricing strategies. It should be taken into consideration, however, that the studies cited differ in the following: territorial scope (focused on different countries), time period (the studies have been done over the last 15 years), kind of research (qualitative or quantitative),

[4] B2B (business-to-business) – the product is intended for business customers.

methods of data gathering (in-depth interviews or surveys including online surveys), sample size, primary units (only local or/and foreign companies offering tangible products and/or services intended for B2C[5] or B2B consumers), observed units (CEOs, managers or experts), perceived restrictions, etc.

In this study, the empirical research on company pricing strategies is divided to four groups:

- research on the implementation of the three major pricing strategies in company practice

Hinterhuber (2008) summarised the results from studies published in the period 1983-2006 and focused on the frequency of implementation of cost-based pricing, competition-based pricing and value-based pricing. It was established that the implementation of competition-based pricing in practice was mentioned on average in 44% of the published research, cost-based pricing – in 37% and value-based pricing – in only 17%.

Marinov (2017) did empirical research on innovations in Bulgarian companies. For this purpose an online survey of 304 company managers was carried out. The companies operated in Bulgaria and had developed at least two new products over the last two years. It was found out that when launching new products on the market the most popular pricing strategy was the competition-based one and the least popular strategy is value-based pricing.

- research focused on the disclosure of the barriers to the implementation of value-based pricing

Hinterhuber (2008) considers the reasons why the implementation of the value-based strategy is so limited in company practice. For that purpose a two-stage empirical research was carried out. The first stage included qualitative research involving a survey of 30 business executives in charge of pricing in companies in three countries – Germany, Austria and Switzerland. Then, quantitative research was conducted involving 126 marketing and other managers from Germany, Austria, China and the USA. Five barriers to value-based pricing were identified: difficulties in making value assessments, difficulties with communicating value, difficulties with market segmentation, difficulties with sales force management, difficulties with senior management support.

Another study that was made by Töytäria, Rajalaa and Alejandrop (2015) deals with the barriers to companies in implementing value-based pricing on B2B markets. The research findings include the lack of understanding and influencing the customer's desired value, quantifying and communicating value in buyer–seller relationships and company challenges in capturing a share of the value created in industrial exchange.

- research aimed at revealing relation between the implemented pricing strategy and other aspects of company activity (financial results, new products success, etc.)

[5] B2C (business-to-consumer) – the product is intended for end customers.

A survey conducted by Hogan (2010) set out to establish if there is a correlation between the adopted pricing strategy and company financial results. It was carried out with managers from over 200 companies from different sectors of the economy. Its aim was to answer two questions: which pricing strategies correlate with operating profit most and which is the bigger source of profit – a good strategy or effective execution. Depending on whether companies use value-based pricing and on the opportunity to implement it, companies are divided to four categories which are provisionally called value masters, well-intentioned, directionally challenged and runaway trains. A company profile for each category was prepared. It was found out that value masters, the companies developing and effectively implementing value-based strategy, have an operating profit which is on average 24% higher than the rest of the companies in the trade (which determine their prices based on costs and competition) and 33% higher than the runaway trains, the companies that can but do not implement value-based pricing.

Liozu and Hinterhuber (2013) conduct a survey of 1812 professionals in the field of pricing in order to measure the impact of the adopted pricing strategy on company results. The authors found out that the three basic pricing strategies have different influence on the capability for company pricing which is in close relation to company performance. A positive relationship between value-based pricing (but not competition-based pricing) and company performance was established.

Another study of Liozu and Hinterhuber (2013) examines the extent of influence of the CEOs of the best companies in pricing on pricing capability and company performance. The sample includes 358 CEOs of companies operating on B2B markets worldwide. It was found out that senior management involvement in pricing decisions has a positive influence on the rationality of pricing decision-making and leads to a better pricing capability and improved company performance.

Toni, Milan, Saciloto, and Larentis (2017) suggest and test a theoretical model showing the impact of the adopted pricing strategy on company profitability. For this purpose data was collected for 150 industrial companies in the field of material production in Brazil, the pricing strategies adopted by them (value-based, competition-based and cost-based), price levels (high and low) as well as their influence on company profitability. It was established that in terms of profitability the best results are obtained with value-based pricing and high price levels whereas in the cases of value-based pricing and low price levels company performance is negatively affected.

Ingenbleek and van der Lans (2013) set out to see if there is a relation between the pricing strategies and pricing practices of Dutch companies. For this purpose an online survey was conducted with CEOs of 95 small and medium-sized companies specialising in production, wholesale trade (the retailers are not included in the sample) and the public sector. The object of research was the pricing strategies and pricing practices of companies producing tangible products and/or offering services intended for B2C and/or B2B consumers. According to the researchers, pricing strategies are visible in the market whereas pricing practices remain hidden within an organisation. The authors prove that there is a relation between pricing strategies and pricing practices because pricing strategies are implemented through pricing practices based on information about the value a product has for consumers, competition and costs.

In a study conducted earlier, Ingenbleek et al. (2003), the relation between the adopted pricing strategy for product launching and its success on the market was examined. 77 marketing managers of B2B companies from two industries (electronics and engineering) in Belgium were surveyed . It was found out that the implementation of customer value-based pricing correlates with the success of new products whereas no such correlation is observed between the success of new products and the adopted cost-based or competition-based pricing.

Thus, the empirical research review shows that, similarly to theoretical research, over the last 15 years three pricing strategies have most often been the object of comparative analysis: cost-based pricing, competition-based pricing and value-based pricing. There was observed a tendency for increase in the number of empirical studies on value-based pricing but so far it has been underestimated by companies and implemented the least compared to the other pricing strategies.

On the whole, in Bulgarian specialised literature there are no publications based on empirical research on the pricing strategies of the companies operating in Bulgaria. The research presented in this study and its findings are an attempt to clarify this issue.

2. Research methodology

In accordance with the aim and research issues of this scientific study the following working hypotheses are tested:

H1: Most of the companies operating in Bulgaria use the strategy of cost-based pricing with very few companies using value-based pricing.

H2: Cost-based pricing is mainly used by small-sized companies, competition-based pricing is mainly used by medium-sized companies and value-based pricing is mainly used by micro-companies[6].

H3: The companies which have adopted cost-based pricing have a bigger market share based on sales volume compared to the companies which have adopted competition-based or value-based pricing.

H4: Most of the companies which have adopted value-based pricing show better financial results than the companies which have adopted cost-based or competition-based pricing.

H5: The pricing strategy adopted by companies is not influenced by the kind of company (Bulgarian or foreign) or by the kind of consumers a product is made for (B2C or B2B).

The main method employed for data collection in the current study is the structured personal online survey. First, 20 in-depth interviews with managers are conducted in order to cover the best the respondents' professional language and answer formulations on which

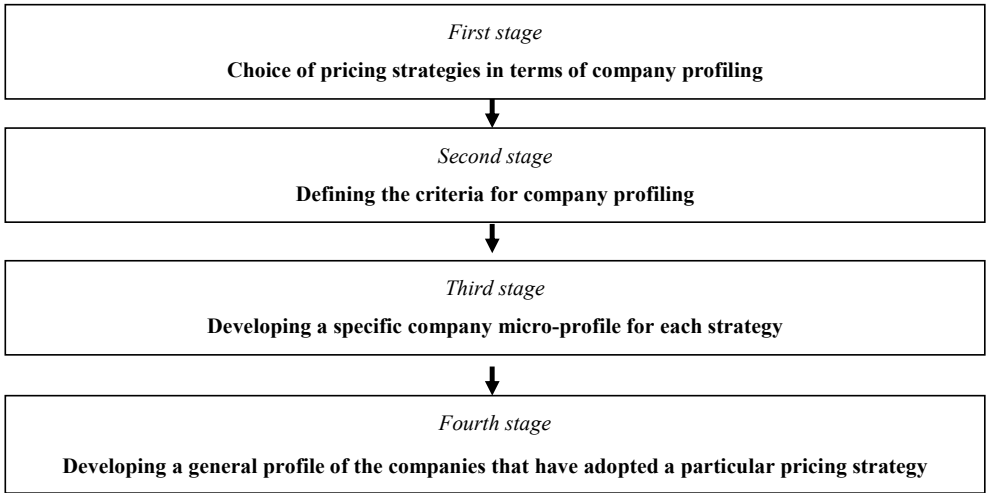
[6] The classification of companies into micro-, small-sized, medium-sized and large- is not related to their annual turnover but to the number of employees they have (micro – up to 9 employees, small-sized – between 10 and 49, medium-sized – between 50 and 249 and large – 250 and over).

the final version of the online survey is based. The units observed in the survey are companies operating on Bulgarian territory (Bulgarian and foreign ones with a subsidiary or agency). The companies are from the material production and services sectors. The target respondent in each company is the CEO/marketing director/manager – the person that depending on the company structure is in charge of prices and pricing. The sample size is 200 surveyed units (companies) and the collected data are the object of analysis, which does not claim for a representation of the results in terms of the population. The research applies quota sampling based on two characteristics: company size (depending on employee number) and product type (material and non-material). The statistical data processing and analysis include: choice of the best clusterisation method (Contingency coefficient), preparation of company micro-profile within each strategy (Cluster analysis), defining the criteria for clusterisation (Kruskal-Wallis H test), company profiling for each strategy based on the most frequently given answer (Mode). The statistical hypotheses checks for all methods are carried out at a 5% risk of a type I error. The statistical data processing was carried out with the programme IBM SPSS Statistics v23.

The methodology of the current study consists of four stages (Figure 3).

Figure 3

A sequence of actions for company profiling in terms of adopted pricing strategy



Source: Developed by the authors.

First stage

As it was mentioned (item 1.1.) the concept of pricing strategy is used in its narrow and broad senses. For the purposes of the current study, it is assumed that a pricing strategy involves options for a choice of possible alternatives, i.e. the concept is used in its narrow sense.

Pricing theory and practice offer a number of pricing strategies (in the narrow sense) that we can provisionally group based on different criteria. From a marketing point of view, the most popular pricing strategy is the following one: depending on the key pricing determinant (basic pricing strategies) – cost-based pricing, competition-based pricing and value-based pricing; related to competition – aggressive (of the market challenger) and passive (of the market follower – closely following the price leader, following the price leader from a distance and selective following of the price leader); related to product features – strategies for the stages of the product life cycle, strategies for new products (price skimming and pricing for market penetration), strategies for standard products, strategies for product mixes, strategies for special order products; for consumer encouragement – price-cutting strategies (season reductions, for cash payment, low-interest consumer financing, free product maintenance, longer warranty, etc.) and high-price strategies (prestige pricing); for price adjustments – segmented pricing, geographical pricing, dynamic pricing, psychological pricing, etc.

The alternative pricing strategies used for company profiling in this study are cost-based pricing, competition-based pricing and value-based pricing.

The choice of these three pricing strategies was determined by the following reasons: first, these are pricing strategies of strategic importance for a company that could lead to a change in the company strategic positions; second, respondents' opinions from the 20 in-depth interviews; third, these three pricing strategies have been of greatest interest for the academic community, researchers and practitioners over the last years (items 1.1. and 1.2.).

Second stage

There are two arguments in favour of the choice of criteria for company profiling with regard to the adopted pricing strategies: first, the previous research of scholars working in this field (item 1.2.) and, second, the respondents' opinions expressed in the in-depth interviews.

The list of company profiling criteria in this study includes: company status (Bulgarian or foreign) (X3)[7], kind of products (tangible products or services) (X4), kind of consumers (B2C or B2B) (X5), price level of the main product (X25), novelty degree of the new products that are being developed (X34), senior management attitude toward risk (X35), investment (X36), market share based on the sales volume of the main product (X37), sales revenue (X38), financial result reported for the last calendar year (profit or loss) (X39), level of company profit (X40) and number of employees (X41).

Third stage

A company micro-profile is made within each strategy with the use of cluster analysis. Seven hierarchical and one non-hierarchical (K-means cluster) clusterisation methods have

[7] The number following X indicates the number of the question from the research questionnaire developed under Project № R&D ScR-16/2017.

been tested (Naidenov, 2016). The number of clusters for each strategy is determined based on a cluster dendrogram (Katrandjiev, 2011). The best clusterisation method within a strategy is chosen based on the highest amount derived from its contingency coefficients with other methods (Goev et al., 2019). After the choice of a clusterisation method, a statistical check of the hypotheses is done (Jelev, 2008; Nestorov, 2012) in terms of the criteria applied for the preparation of the micro-profiles through Kruskal-Wallis test, which checks for a statistically significant difference between the micro-profiles by a given criterion.

Fourth stage

The predominant opinion for the major criteria within each strategy is used for the final company profiling. In order to test the sustainability and reliability of the profiles, they are compared with the results from the micro-profiles.

3. Empirical results and analysis

Depending on the market they operate on, 60% of the companies are Bulgarian ones operating entirely on the domestic market, 26% are Bulgarian companies operating on both the domestic and foreign markets, and 14% are foreign companies operating on the domestic market. In terms of the number of employees in 24% of the companies from the sample the average monthly number of employees is up to 9, in 29% – from 10 to 49 people, in 30.5% – from 50 to 249 people and in 16.5% - 250 and over employees. In terms of consumer type – 65% of the companies in the researched aggregate sell mostly to end consumers (B2C) and 35% – mostly to business consumers (B2B). In terms of the nature of the products offered – 50% of the companies from the sample offer mostly material products and 50% offer services. In terms of pricing strategies, 51% of the companies have indicated that they use cost-based pricing, 28.5% – competition-based pricing and 20.5% – value-based pricing (Figure 4).

The data analysis shows that more than a half of the companies operating in Bulgaria implement cost-based pricing which confirms the first working hypothesis.

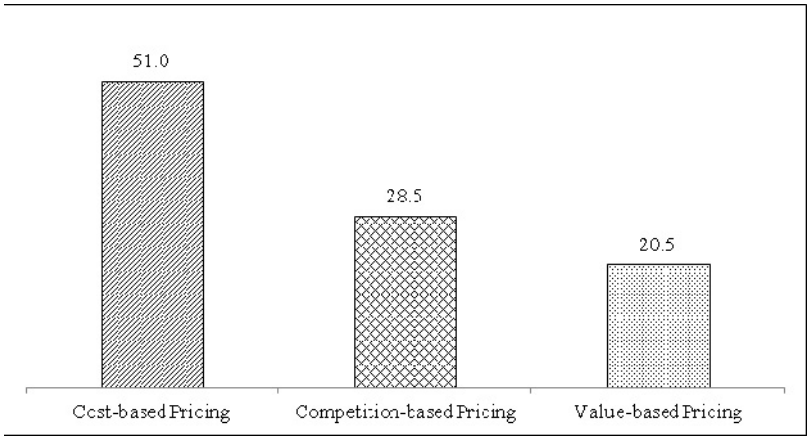
The highest profit can be achieved with value-based pricing according to 43% of the researched companies, with cost-based pricing – according to 38% and with competition-based pricing – according to 19% of the companies.

It is interesting to compare the results from an analytical point of view. On the one hand, the share of the companies using value-based pricing is the smallest but, on the other hand, this is the pricing strategy that is the most profitable one according to most of the respondents. 53.7% of the companies from the sample do not use value-based pricing mainly because they have difficulties measuring the customer value of the company product. Considering value-based pricing the most profitable strategy indicates that the managers of the companies operating in Bulgaria are increasingly realizing the relation

between the adopted pricing strategy and company financial results and are interested in the opportunities for the implementation of value-based pricing in practice.

Figure 4

Pricing strategies of the researched companies (in %)

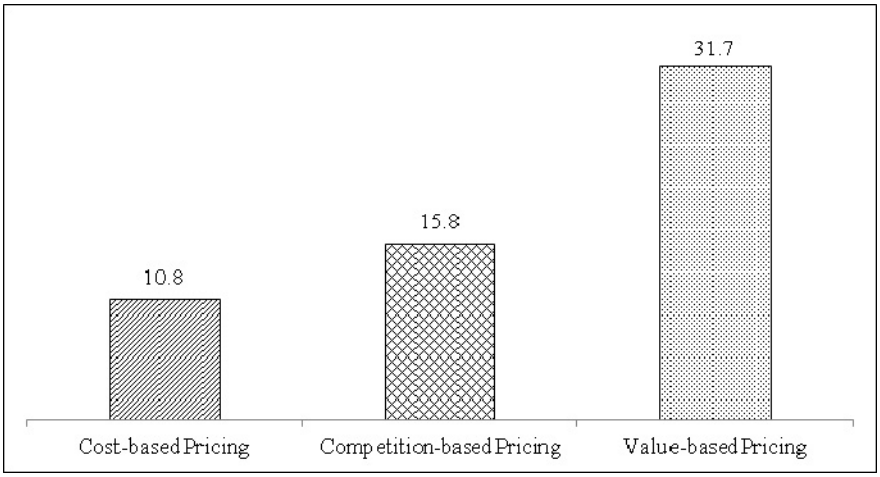


Source: Empirical survey from 2017.

Of the companies that made a profit bigger than the average level for the branch the biggest relative share is that of the companies that have adopted value-based pricing (Figure 5). This partly confirms the fourth working hypothesis according to which most of the companies that have adopted value-based pricing have higher financial results than the companies that have adopted competition-based pricing.

Figure 5

Share of the companies that have adopted the particular pricing strategy and have a profit above the average for the industry (in %)



Source: Empirical survey from 2017.

3.1. Preparation of micro-profiles within a pricing strategy

The preparation of company micro-profiles within a pricing strategy is preceded by a corresponding choice of a clusterisation method. Eight clusterisation methods were studied for this purpose and the choice of the best one was based on the highest cumulative value of the contingency coefficients of the corresponding strategy. The results from the cumulative value of the contingency coefficients are presented in Table 1.

Table 1

Choice of the best method for preparation of company micro-profiles based on the cumulative value of the contingency coefficients

Clusterisation methods	Cost-based pricing	Competition-based pricing	Value-based pricing
Average Linkage (Between Groups)	**3.390**	3.569	**4.949**
Average Linkage (Within Group)	2.968	**3.595**	4.863
Single Linkage	2.108	2.677	4.531
Complete Linkage	2.873	3.569	**4.949**
Centroid Method	1.599	2.677	4.531
Median Method	**3.390**	3.569	4.531
Ward Method	**3.390**	3.129	3.998
K-means Cluster (2 clusters)	1.034	2.012	2.814

Note: The highest cumulative values of the contingency coefficients for the corresponding pricing strategy are given in bold italics.

Source: Authors' calculations.

With cost-based pricing there are three most appropriate methods (Average Linkage (Between Groups), Median Method, Ward Method) whose micro-profile coincides completely. With value-based pricing there are two most appropriate methods (Average Linkage (Between Groups) and Complete Linkage) whose micro-profile coincides completely as well. The Average Linkage (Between Groups) method is among the most appropriate methods for both strategies and that is why company clusterisation for them was made based on it. With competition-based pricing the highest cumulative value of the contingency coefficients is that of the Average Linkage (Within Group) method.

After the choice of the most appropriate clusterisation method for each of the strategies, the criteria influencing the micro-profile preparation are presented in Table 2.

For all the three pricing strategies the criteria that were of importance for the micro-profiling were financial performance and company profit level. It can be concluded that the most important criterion for the profile preparation within the corresponding pricing strategy is company profit.

Table 2

Criteria of greatest importance for the micro-profile preparation based on the Kruskal-Wallis H test

Criteria	Cost-based pricing	Competition-based pricing	Value-based pricing
X3	-	-	-
X4	-	-	-
X5	-	-	-
X25	✓	-	-
X34		-	-
X35	✓	✓	-
X36	-	✓	-
X37	✓	✓	-
X38	-	-	✓
X39	✓	✓	✓
X40	✓	✓	✓
X41	-	-	-

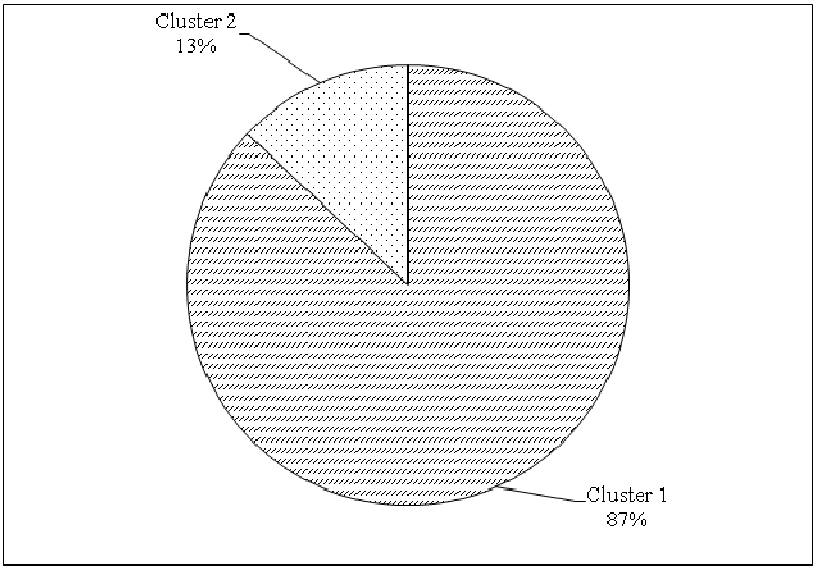
Source: Developed by the authors.

- Micro-profile of the companies that have adopted cost-based pricing

The number of clusters for this as well as for the next strategies is determined based on a cluster dendrogram. After the clusterisation of the companies that have adopted cost-based pricing, the set is divided to two subsamples (Figure 6).

Figure 6

Size of the micro-profiles of the companies that have adopted cost-based pricing



Source: Empirical survey from 2017.

The first micro-profile (Cluster 1) consists mostly of Bulgarian companies operating entirely on the domestic market. These companies are small, with an average monthly number of employees between 10 and 49 people. They offer mainly material products for end consumers. The market share based on the sales volume of their main product is 21-34%. Their sales revenue has increased over the last two years. In the end of the last calendar year they had a positive financial result (profit). They sell their main product at a price at the average level for the sector. The profit they have is at the average level for the sector as well. The managers of these companies are more likely to take risks and make investments in different forms. Over the last three years, these companies have developed and introduced a new product or product line.

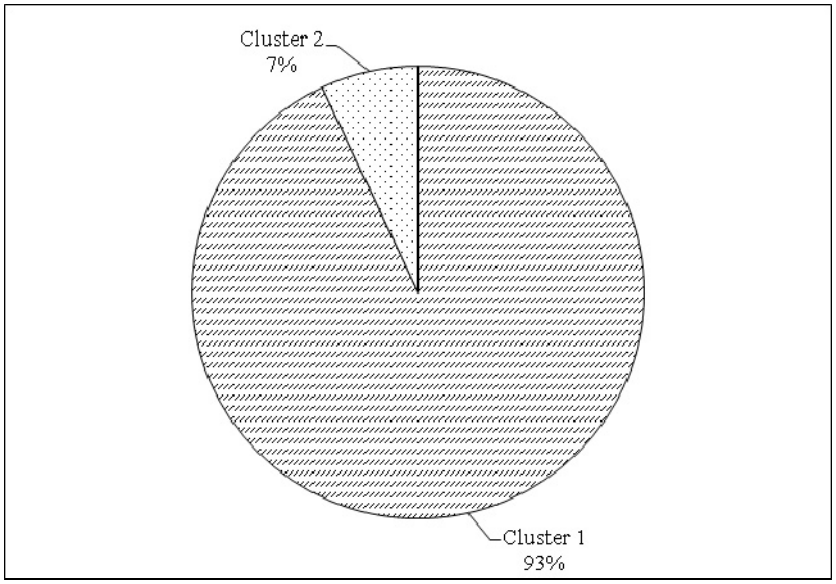
The second micro-profile (Cluster 2) consists of Bulgarian companies operating on the domestic market which are micro-, small- and medium-sized. They offer mainly services for end consumers. Their market share is up to 5%. Even though they sell their main product at a price at the average level of the sector and their sales revenue increased on the previous year, their financial result for the last calendar year is negative (loss). The managers of these companies are definitely not willing to take any risks. Over the last three years these companies have not developed and introduced a new product although investments have been made in different forms.

- Micro-profile of the companies that have adopted competition-based pricing

After the clusterisation of the companies that have adopted competition-based pricing, the set is divided to subsamples (Figure 7).

Figure 7

Size of the micro-profiles of the companies that have adopted competition-based pricing



Source: Empirical survey from 2017.

The first micro-profile (Cluster 1) consists of Bulgarian companies operating entirely on the domestic market which are medium-sized. These companies offer mainly services intended for end consumers. They sell their main product at a price at the average price level for the sector. Their market share is between 6 and 20%. Their sales revenue has increased compared to the previous year. In the end of the last calendar year they had a positive financial result. The profit they had is at the average level for the sector. The managers of these companies are sometimes willing to take risks and make investments in different forms. Over the last three years these companies have not developed and introduced a new product or product line.

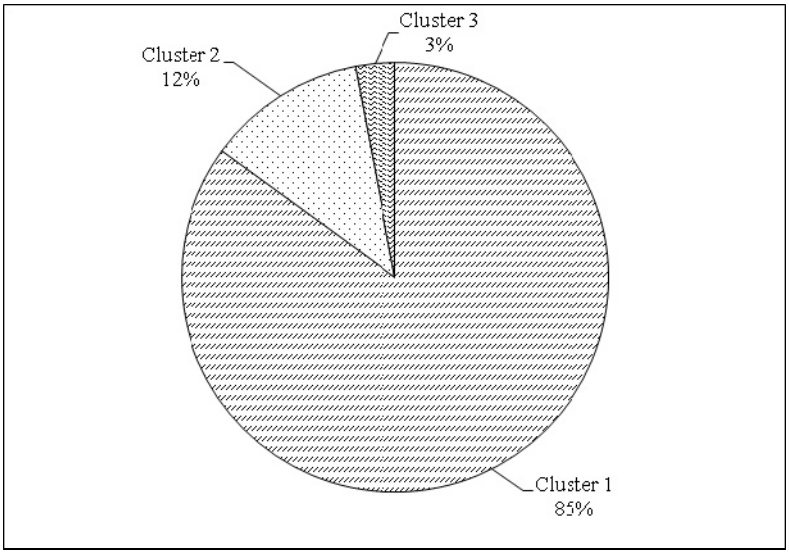
The second micro-profile (Cluster 2) consists mainly of Bulgarian companies operating entirely on the domestic market but there are also companies operating on both the domestic and foreign market. They are medium-sized companies offering mostly services for end customers. Their sales revenue increased in the end of the previous year. The share they have on the corresponding product market is over 35%. They sell their main product at a price at the average level for the sector but they are not at a profit. These companies' managers are definitely unwilling to take risks and there have not been made investments in these firms. Over the last three years these companies have not developed or introduced a new product. Although their sales revenue increased on the previous year and they have a bigger market share at the moment, they have to pay greater attention to their investment and innovation strategies in order to be successful.

- Micro-profile of the companies that have adopted value-based pricing

After the clusterisation of the companies that have adopted value-based pricing, the set is divided to three subsamples (Figure 8).

Figure 8

Size of the micro-profiles of the companies that have adopted value-based strategy



Source: Empirical survey from 2017.

The first micro-profile (Cluster 1) consists mainly of Bulgarian companies entirely operating on the domestic market. They are micro-companies with an average monthly number of employees up to 9 people. These companies offer mainly services intended for end customers. The share they have on the corresponding product market is between 6% and 20%. Sales revenue increased compared to the previous year. In the end of the last calendar year they had a positive financial result. They sell their main product at a price at the average level for the sector. The profit they realize is also at the average level for the sector. The managers of these companies are more likely to take risks. Investments in different forms have been made in these companies. Over the last three years they have developed and introduced a new product or product line.

The second micro-profile (Cluster 2) consists mostly of Bulgarian companies operating on the domestic market. They are small and offer mostly services for end customers. Their market share based on the sales volume of their main product is between 6% and 20%. Their sales revenue decreased on the previous year. They sell their main product at a price at the average level for the sector but they do not realize a profit. The managers of these companies are definitely unwilling to take risks but they have made investments in their companies over the last five years. To this micro-profile also belong companies that have not introduced a new product or product line over the last three years.

The third micro-profile (Cluster 3) includes Bulgarian companies operating on both the domestic and foreign market. They are big and offer mainly material products for end customers. Their market share is between 21% and 34%. Their sales revenue increased compared to the previous year and in the end of the last year their financial result was positive. They sell their main product at a price at the average level for the sector. The managers of these companies are sometimes willing to take risks but have not made investments in their companies over the last five years. The companies from this micro-profile have not introduced a new product or product line over the last three years.

The analysis of the data from the micro-profiles leads to the following findings:

First, regardless of the number of company employees and of the fact that the price of the main product is at the average level for the sector, companies can either work at a profit or at a loss.

Second, the companies that have adopted the given pricing strategy have a similar model of market behaviour. An indicator for this is the differentiation of a leading cluster within the three pricing strategies which includes 85% of the companies and over.

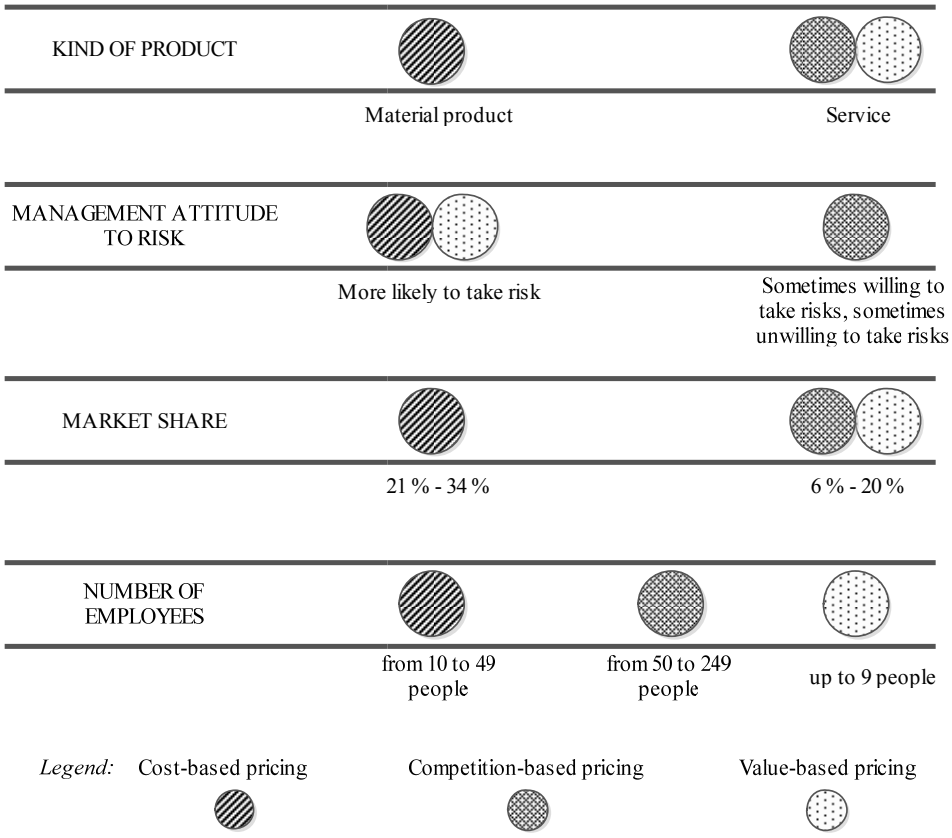
3.2. Company profiling in terms of the adopted pricing strategy

In order to profile companies in terms of the adopted pricing strategy, the most frequently given answer for each criterion within the given pricing strategy is taken into consideration. It is compared to the distinct clusters by type of strategy. It is observed that there is a complete match between the leading cluster and the most frequently given answer. The comparison gives a reason to conclude that the final profile presents the characteristic features of the companies that have adopted the particular pricing strategy

comprehensively. Below are analysed only the criteria revealing differences between the profiles of the companies adopted the respective pricing strategy (Figure 9) and the following conclusions are made:

Figure 9

Criteria revealing the differences in the profiles of the companies adopted different pricing strategies



Source: Developed by the authors.

First, cost-based pricing is used mostly by companies offering material products. Competition-based and value-based strategies are mostly used by companies offering services. This can be explained with the fact that with material products it is easier to identify and account for the costs of their production and realization. With services this is difficult which is why when calculating and determining their cost base it is costs that are taken but competitors' prices or an emphasis is put on the value that the service provides to the customer.

Second, the management of the companies that have adopted cost-based or value-based pricing is more willing to take risks than the management of the companies using competition-based pricing. In terms of prices, the management of the companies using competition-based pricing prefers not to compete directly with its main rivals but to follow their pricing behaviour. On the contrary, the management of the companies using value-based pricing is proactive and willing to implement a more innovative pricing strategy.

Third, in terms of sales volume of the main product the companies using cost-based pricing have a bigger market share compared to the companies using competition-based and value-based pricing. This can be explained with the fact that cost-based pricing is associated with low price levels whereas value-based pricing is associated with high price levels and under equal other conditions a higher price leads to a smaller sales volume.

Fourth, cost-based pricing is implemented mainly by small companies, competition-based pricing is implemented mainly by medium-sized companies, and value-based pricing is implemented mainly by micro-companies. For big companies it could not be claimed that they use mainly one of these strategies. The use of value-based pricing by micro-companies can be explained with the fact that they are mostly start-ups with a small number of employees but innovative, proactive and following the current trends in all functional spheres of business (including pricing).

In summery, based on the empirical results mentioned in items 3.1. and 3.2., a check of the working hypotheses has been done and its results are given in Table 3. The table shows that of five working hypotheses four have been confirmed completely, one has been confirmed partly and none has been rejected.

Table 3

Hypotheses check results

	Hypothesis	Result
H1:	Most of the companies operating in Bulgaria use the strategy of cost-based pricing with very few companies using value-based pricing.	☑
H2:	Cost-based pricing is mainly used by small-sized companies, competition-based pricing is mainly used by medium-sized companies and value-based pricing is mainly used by micro companies.	☑
H3:	The companies which have adopted cost-based pricing have a bigger market share based on sales volume compared to the companies which have adopted competition-based or value-based pricing.	☑
H4:	Most of the companies which have adopted value-based pricing show better financial results than the companies which have adopted cost-based or competition-based pricing.	O
H5:	The pricing strategy adopted by companies is not influenced by the kind of company (Bulgarian or foreign) or by the kind of consumers a product is made for (B2C or B2B).	☑

Legend: ☑ *completely confirmed* O *– partly confirmed* ☒ *– rejected*

Source: Developed by the authors.

Conclusion

The current study has been the first one in Bulgaria focused on the profiling of the companies in terms of the adopted pricing strategy. The object of research is three pricing strategies: cost-based pricing, competition-based and value-based pricing. Even though globally value-based pricing has become increasingly popular over the last years, it is still the least preferred strategy by the companies operating in Bulgaria.

Cost-based pricing is implemented mostly by companies offering material products and competition-based pricing and value-based pricing are used by companies offering services.

The management of the companies that have adopted cost-based and value-based pricing is more willing to take risks compared to that of the companies that have adopted competition-based pricing.

The companies that have adopted cost-based pricing have a bigger market share based on the sales volume of their main product compared to the companies that have adopted competition-based and value-based pricing.

With all three strategies, most of the companies realise a profit at the average level for the sector but the biggest relative share of the companies with a profit above the average level for the sector is that of the companies adopted value-based pricing.

Value-based pricing is mostly implemented by micro-companies, cost-based pricing is mostly implemented by small companies and competition-based pricing is mostly implemented by medium-sized companies.

Company profiling in terms of the adopted pricing strategies is a vast and multifaceted subject. In order to achieve greater depth when considering this problem, it is possible to differentiate companies by other pricing strategies, by economic sectors or in several countries and to analyse the results in a comparative aspect. These directions provide new opportunities and challenges for future pricing research.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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IMPORTANT FACTORS OF SMES ENTREPRENEURIAL ORIENTATION

Effective implementation of EO attributes represents an important factor of SMEs' success on the target market, and significantly determines its long-term existence.
The aim of this paper was to define and quantify the significance of EO factors influencing SMEs business orientation. In connection to the defined target, separate research was conducted using a questionnaire in the Czech Republic attended by 1,141 enterprise owners within the SME segment. The method of regression analysis was used to quantify the significance of respective factors and to determine their statistical significance.
The results of the research indicate that SMEs' entrepreneurial orientation is mostly affected by the following factors: Investing finances into development of new methods and technologies (EO_{13}), Conducting risky projects for the purpose of increasing the enterprise's performance (EO_{23}), Initiative on the target market (EO_{32}), and Activities performed towards competition (EO_{43}). Subsequently, it was determined that factors such as Enterprise's risk strategy (EO_{21}), Creating an entrepreneurial environment within the scope of the enterprise (EO_{33}), Aggressive activities towards competition (EO_{42}), and Reputation for being an autonomous enterprise (EO_{51}) do not affect the overall degree of entrepreneurial orientation.
The results of this research may serve as an inspiration for further research in the field of SMEs entrepreneurial orientation.
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Introduction

Small and medium-sized enterprises (SMEs) play an increasingly important role in many economies in the world (Ključnikov et al., 2016; Potkány et al., 2016; Smékalová et al., 2014; Karpak and Topcu, 2010; Henderson and Weiler, 2010, and other authors). This sector is especially significant in Europe (Czarniewski, 2016). According to the European Commission (2011), small and medium-sized enterprises (SMEs) are a "source of lifeblood" of the European economy.

There is a similar situation in the Czech Republic where SMEs produce more than 50% of the total added value volume and contribute to the overall employment rate in the economic system by more than 59%. The issue of SMEs financial health is a key in an effort to achieve sustainable development on both national and multinational level. Research targeting the detection of SMEs financial health sources indicates that the SMEs entrepreneurial orientation is one of the most significant factors (Kliestik et al., 2015a; Svabova and Durica, 2016).

This paper examines entrepreneurial orientation (EO) and the impact of the defined entrepreneurial orientation factors on SMEs business. The uniqueness of this research lies in defining significant EO factors and quantifying their impact on the overall EO.

The structure of the paper is as follows: The theoretical part presents the opinions of distinguished professionals in this field. The next part describes the aim of the research, methodology, and data used, followed by the results of the research and a discussion. The conclusion presents basic findings of the scientific research, its limitations and further direction.

1. Theoretical aspects of EO in the SME segment

Based on the definition by Jelenc et al. (2015), EO is a tradition evaluating enterprises' inclination towards entrepreneurship attitudes. There are various methods of measuring EO, most researches, however, apply two: The first method is based on the initial definition of EO by Miller (1983) who describes EO using three constructs – proactivity, innovativeness, and risk-taking. The second method by authors Lumpkin and Dess (1996) takes into consideration five constructs by adding independence and competitive aggressiveness to the initial EO set. Lumpkin and Dess (1996) defined EO as follows: „EO applies to processes, practice, and decisions leading to new inputs, as described by one or more of the following characteristics: „the ability to act independently, willingness to innovate and take risk, and tendency to be aggressive in relation to competitive and proactive in relation to new market opportunities." EO is therefore viewed as a five-dimensional construct consisting of innovativeness, risk-taking, proactivity, autonomy, and competitive aggressiveness. EO was also defined by other authors (e.g. Covin and Slevin, 1988; Pearce et al., 2010).

According to Lumpkin and Dess (1996), innovativeness reflects enterprises' tendency to join and support new ideas, novelties, experiments and creative processes that may result in new products, services, or technological processes. In a broader sense, innovativeness can

be viewed as anything from simple willingness to try a new product line or experiment with a new ad placement to ardent determination to master newest product trends or technological progress.

Enterprises described as having an EO are often characterized by risky behavior such as falling into debt in order to make a high profit whenever convenient market opportunities arise (Lumpkin and Dess, 1996). Entrepreneurial risk has a complex form because it comprises several other risks that are interconnected. According to Caliendo et al. (2014), the probability of becoming and being an entrepreneur increases with a growing risk tolerance. Successful people are prepared to take on a reasonable amount of risk if associated with a certain level of achieved results (Kvietok, 2013).

Proactivity measures the enterprises' tendency to search for opportunities that enable entering the market with new products and services (Rauch et al., 2009).

Competitive aggressiveness describes an enterprise's ability to directly and intensively challenge competitors to grow or improve their position on the market, meaning getting ahead of their rivals. This feature of the EO is characterized by perceptiveness that can be viewed as a direct confrontation, e.g. when an enterprise enters the market identified by a competitor, or as a form of a reaction, e.g. when an enterprise lowers the prices in reply to a competitor's challenge. Competitive aggressiveness also reflects the willingness to be unconventional rather than rely on traditional competitor methods (Lumpkin and Dess, 1996).

Autonomy refers to independent actions of an individual or a team bringing an idea or a vision and carrying it into effect. Generally, it is the ability and willingness to be self-governed in search for opportunities. In an organization, autonomy refers to actions lifting the atmosphere of organizational hurdles. Independence in organizations varies based on the enterprise's size, leadership style, or form of ownership, e.g. in an organization where the owner/manager is the decision-maker, independence stems from ownership rights (Lumpkin and Dess, 1996).

The defined EO constructs increase the probability of becoming an entrepreneur and decrease the probability of becoming an employee (Knőrr et al., 2013; Almeida et al., 2014).

EO represents a key factor for the success of SMEs (Brockman et al., 2012; Boso et al., 2013). To act entrepreneurially is to take part in strategic activities – innovation, proactivity, risk-taking – and to perform these activities systematically (Anderson and Eshima, 2013). EO should guide towards the market by developing new products, product innovation, creating new consumer buying behavior, and creating competitive advantage on the market (Rahman et al., 2016).

EO is analyzed by many authors from different perspectives. Most often, authors examine how enterprises' EO affects their performance and future growth.

Entrepreneurial orientation (EO) is considered a significant feature of high performance (Kraus, 2013; Lim and Envick, 2013; Keh et al., 2007). Gudmundson and Lechner (2014) present an accurate description of the relationship between EO and performance. According

to the authors, EO has a positive effect on the company performance with both cost leadership and differentiation strategies. Their results show that innovativeness and autonomy have a positive relationship with product differentiation strategy whereas risk-taking and competitive aggressiveness have a negative relationship with innovativeness, but no significant relationship with proactivity was found.

Business related risk-taking which is a substantial part of the entrepreneurial orientation (Rauch et al., 2009; Wales et al. 2013; Man et al., 2015) can be defined as a practice or tendency of taking actions that can be potentially harmful for the enterprise, and may result in a financial loss, but might at the same time provide an opportunity for a rewarding outcome. risk-taking mentality usually interconnected with innovative approach in company's management helps to engage the creative process in the company, and according to Wang and Yen (2012), is positively related to enterprise's performance. Kraus (2013) also argues that risk-taking and innovativeness are significantly related to enterprise's performance. As small businesses are more vulnerable to changes in the market structure, increase in competition, and changes in customer product preferences, it is difficult for them to survive if they lack the EO attributes (Gudmundson and Lechner, 2014). Entrepreneurs with high risk tolerance, innovativeness and willingness to use new technologies are more successful in generating profit for the enterprise (Blackburn et al., 2013; Laforet, 2013). Research conducted in this field until now indicates that another important aspect of increasing performance in the context of properly determined EO is eliminating entrepreneurial risk-taking (Kliestik et al., 2015b).

Most of the authors agree that entrepreneurial orientation can positively affect the enterprise's growth. E.g. Soininen et al. (2012) state that companies with higher EO can have a smoother growth than firms with lower EO, due to balancing the nature of risk-taking and more innovativeness and pro-activeness. It is interesting that among younger SMEs, those with a higher level of EO and intangible resources have a higher growth rate than the SMEs with limited EO (Anderson and Eshima, 2013).

EO is considerably affected by the entrepreneur's personality (Kozubíková et al., 2015b; Deáková et al., 2010; Kvietok, 2013).

According to Beugelsdijk and Noorderhaven (2005), entrepreneurs are more individualistic than the rest of the population, and individual responsibility and effort are traits distinguishing them from the others. The summary of opinions by other authors (Obschonka et al., 2014; Zhao and Seibert, 2006; Caliendo et al., 2014) yields the following set of the most important entrepreneurial personality traits: passion, flexibility, strong self-confidence, resilience, vision, courage/willingness to take risk, positive attitude, integrity, trustworthiness, self-sacrifice, creativity, leadership skills, perseverance, independence.

2. Research aim, methodology, and data

The aim of this paper is to define and quantify the significance of EO factors influencing SMEs business orientation.

Individual EO constructs were selected according to Lumpkin and Dess (1996): innovativeness, risk-taking, proactivity, competition aggressiveness, and autonomy. Three characteristic factors were created for each construct.

Table1

Constructs and factors of SMEs' entrepreneurial orientation

Construct	Factors (independent variables)
Innovativeness (EO_1)	Reputation for being an innovator (EO_{11})
	Enterprise's new product and services development (EO_{12})
	Investing finances into development of new methods and technologies (EO_{13})
Risk Taking (EO_2)	Enterprise's risk strategy (EO_{21})
	Investing in risky projects (EO_{22})
	Conducting risky projects for the purpose of increasing the enterprise's performance (EO_{23})
Proactivity (EO_3)	Change forecast for the target market (EO_{31})
	Initiative on the target market (EO_{32})
	Creating entrepreneurial environment within the scope of the enterprise (EO_{33})
Competitive aggressiveness (EO_4)	Reputation for being an aggressive enterprise (EO_{41})
	Aggressive activities towards competition (EO_{42})
	Activities performed towards competition (EO_{43})
Autonomy (EO_5)	Reputation for being an autonomous enterprise (EO_{51})
	Personnel being autonomous in enterprise's operations (EO_{52})
	Support of employees' initiative in search and execution of entrepreneurial opportunities (EO_{53}).

In this research, following five hypotheses through estimation methods have been set:

H1: All factors of the innovativeness construct (EO_{11}, EO_{12} and EO_{13}) are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

H2: All factors of the risk-taking construct (EO_{21}, EO_{22} and EO_{23}) are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

H3: All factors of the proactivity construct (EO_{31}, EO_{32} and EO_{33}) are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

H4: All factors of the competitive aggressiveness construct (EO_{41}, EO_{42} and EO_{43}) are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

H5: All factors of the autonomy construct (EO_{51}, EO_{52} and EO_{53}) are statistically significant and positively affect an enterprise's entrepreneurial orientation (EO).

Statistical data collection in enterprises in 2015 was based on the following steps: using the method of random selection, 1600 enterprises were selected from the basic set of

enterprises active in the Czech Republic obtained from the "Albertína" database. The selected enterprises were approached by email and asked to fill out an online questionnaire. The questionnaire was completed by the enterprise's owner or a top manager. Entrepreneurs' notions were recorded using qualitative statements accompanied by quantitative evaluation (so-called Likert scale) as follows: fully agree (2), agree (1), indifferent (0), disagree (-1), fully disagree (-2).

This process yielded statistical data from 495 enterprises, what represents a 31% success rate. Enterprises that did not respond to email were subsequently approached by phone by college students who acted as research agents. An incomplete statistic data collection yielded a set of statistical data from 1141 enterprises (70% success rate). To achieve the paper's goal, 5467 out of the total set of 60 476 statistical data were used from a selected group of enterprises.

Regression analysis was used to achieve the main goal. The aim of the linear regression model was to explain and quantify the relation between EO (dependent variable) and given factors EO (EO_{11} to EO_{53}).

The linearity assumption was verified using a graphic data analysis in form of point charts (scatter plots). Subsequently, verification of the assumption of normal data distribution with the testing of the descriptive characteristics of the independent variables (z-test of skewness and kurtosis) was performed. The critical value for accepting independent variables in the regression model is 1.96 (significance level of 0.05). The assumption of constant dispersion of random errors and thus of residues (homoscedasticity) was tested using the Bartlett test. The assumption of homoscedasticity was confirmed if the p-value was larger than 0.05. The values of linear regression model parameters with more independent variables can be negatively affected by multicollinearity. The results of the regression models were accepted if the value of the Inflation factor was higher than 5 (Hair et al., 2010). The graphical verification of assumptions, as well as testing was performed using the IBM SPSS Statistika software for statistical data analysis.

The general form of the regression equation with multiple linear function is based on the following relationship between dependent variable (EO) and factors ($EO_{11, ..., } EO_{53}$):

$$EO = \beta_0 + \beta_1 \times EO_{11} + \beta_2 \times EO_{12} + \beta_3 \times EO_{13} + ... + \beta_j \times EO_{ij} + \varepsilon \qquad (1)$$

where E*O* – dependent variable; β_0 – constant, $\beta_1; \beta_2 \beta_3$ – parameters of independent variables; *i* – factor (i = 1, 2, ..., n); *j* – determinant of i factor (j = 1, 2, m); ε – random regression model component.

Since the aim is not to predict an entrepreneur's future business orientation, the constant has no significance for the regression model; however, it will be present in the regression models for the sake of complexity.

The random component (ε) in the above regression model must meet the characteristics of white noise (medium value of a random component is 0, variance ε is constant, linear independence between the components ε and random variables are administered by probability pattern of normal distribution).

The suitability of the regression model with the regression function will be verified by the coefficient of determination. Given the large number of data (1141 enterprises), it was assumed that there will not be large differences between the value of the coefficient of determination (R2) and the adjusted coefficient of determination R_Adj^2, which states what percentage of the total variability of the dependent variable is explained by the selected regression model.

The reliability of the regression model was determined using the mathematical "Analysis of variance" method which was verified by F-ratio and determination of its p-value. To meet the statistical significance of the regression model, p-value of the entire model must be lower than the significance level. The significance level for all completed tests was set at 0.05. If the regression model function consists of three or more independent variables, then the given regression model can be negatively affected by multicollinearity. The mutual dependence of independent variables is determined by Variation Inflation Factor (VIF). If the value of VIF is larger than 5, then multicollinearity depreciates the estimated regression model parameters.

The interpretation of the achieved regression parameter results is the following:

- If the estimated parameter of an independent variable is statistically insignificant, it can be argued, regardless of the estimated parameter's value, that the independent variable has no effect on the entrepreneurial orientation.
- If the estimated parameter of an independent variable is statistically significant and positive at the same time, the independent variable positively affects the entrepreneurial orientation necessary in the business environment,
- If the estimated parameter of an independent variable is statistically significant and negative at the same time, the independent variable negatively affects the entrepreneurial orientation necessary in the business environment.

Descriptive characteristics of enterprises based on socio-demographic features: by enterprise's location (county) – Zlínský kraj (28,3%), Moravskoslezský kraj (24,2%), Olomoucký kraj (11,7%), Jihomoravský kraj (10,2%), Liberecký kraj and Praha (5,1%), Pardubický kraj (4,8%), Plzeňský kraj (2,7%), Středočeský kraj (2,1%), Královehradecký kraj (2,0%), Vysočina (1,6%), Jihočeský kraj (1,0%), Ústecký kraj (0,9%) a Karlovy Vary (0,3%), by enterprise size – 65% micro-enterprises (up to 10 employees), 27% small enterprises (up to 50 employees), 8% medium-sized enterprises (up to 250 employees), by gender – 75% men, 25% women.

3. Results

Table 2 lists the verification results of independent variables in regression models.

Table 2

Verification of regression models' assumptions

Factor	*The assumption of regression Analysis*	*Verification tool*	*The independent variables (Determinants)*		
			EO_{11}	EO_{12}	EO_{13}
EO_1	Linearity	Scatter plot	O	O	O
	Normal distribution of construct	Z- test	X	O	X
	Homoscedasticity	Bartlett´s test	O	O	O
Factor	*The assumption of regression Analysis*	*Verification Tool*	*The independent variables (Determinants)*		
			EO_{21}	EO_{22}	EO_{23}
EO_2	Linearity	Scatter plot	X	O	O
	Normal distribution of construct	Z- test	X	O	O
	Homoscedasticity	Bartlett´s test	X	O	O
Factor	*The assumption of regression Analysis*	*Verification Tool*	*The independent variables (Determinants)*		
			EO_{31}	EO_{32}	EO_{33}
EO_3	Linearity	Scatter plot	O	O	O
	Normal distribution of factor	Z- test	O	O	O
	Homoscedasticity	Bartlett´s test	O	O	O
Factor	*The assumption of regression Analysis*	*Verification Tool*	*The independent variables (Determinants)*		
			EO_{41}	EO_{42}	EO_{43}
EO_4	Linearity	Scatter plot	O	X	O
	Normal distribution of factor	Z- test	O	X	O
	Homoscedasticity	Bartlett's test	O	O	O
Factor	*The assumption of regression Analysis*	*Verification Tool*	*The independent variables (Determinants)*		
			EO_{51}	EO_{52}	EO_{53}
EO_5	Linearity	Scatter plot	O	O	O
	Normal distribution of factor	Z- test	X	O	O
	Homoscedasticity	Bartlett's test	X	O	O

Notes: X – assumption not confirmed; O – assumption confirmed. Source: own processing.

The results (Table 2) indicate that the linearity assumption was verified in all independent variables except independent variables $EO_{21,}$ EO_{42}. Testing criteria values confirmed the assumption of normal data distribution of independent variables except EO_{11}, EO_{13}, EO_{21}, EO_{42}, and $EO_{51.}$ Given the size of the sample set (1,141 respondents), these variables can be included into the regression model (Hair, 2010). The assumption of homoscedasticity was not confirmed in EO_{21} and EO_{51}, as the critical area (p-value = 0.05) was larger than the testing criteria.

Table 3 lists the verification results of the estimated coefficient in multiple linear functions of the regression models and the results of partial correlations between dependent and independent variables.

The results in Table 3 indicate that the mutual correlation between entrepreneur's answers to respective factor determinants (EO_1 to EO_5) and entrepreneurial orientation shows a weak correlation. This pertains to determinants EO_{21}, EO_{22}, EO_{23}, EO_{33}, and $EO_{51.}$ The results of testing criteria using t-tests to determine statistically significant determinants of EO in respective EO factors are as follows: independent variables EO_{21}, EO_{33}, EO_{42} and

EO_{51} have lower values than the critical area of t-test 1.916 (significance level of 0.05, 1138 degrees of freedom).

Table 3

Verification of the significance of estimated coefficients and partial correlation

Factor	*Regression equation (Verification tool)*	*The independent variables (Determinants)*		
		EO_{11}	EO_{12}	EO_{13}
EO_1	Significance of the estimate coefficient (T - test)	O	O	O
	Partial correlation (Coefficient of Correlation)	MC	MC	MC
Factor	*Regression equation (Verification tool)*	*The independent variables (Determinants)*		
		EO_{21}	EO_{22}	EO_{23}
EO_2	Significance of the estimate coefficient (T - test)	X	O	O
	Partial correlation (Coefficient of Correlation)	LC	LC	LC
Factor	*Regression equation (Verification tool)*	*The independent variables (Determinants)*		
		EO_{31}	EO_{32}	EO_{33}
EO_3	Significance of the estimate coefficient (T - test)	O	O	X
	Partial correlation (Coefficient of Correlation)	MC	MC	LC
Factor	*Regression equation (Verification tool)*	*The independent variables (Determinants)*		
		EO_{41}	EO_{42}	EO_{43}
EO_4	Significance of the estimate coefficient (T - test)	O	X	O
	Partial correlation (Coefficient of Correlation)	MC	MC	SC
Factor	*Regression equation (Verification tool)*	*The independent variables (Determinants)*		
		EO_{51}	EO_{52}	EO_{53}
EO_5	Significance of the estimate coefficient (T - test)	X	O	O
	Partial correlation (Coefficient of Correlation)	LC	MC	MC

Notes: X – assumption not confirmed; O – assumption confirmed; LC – low correlation R <0.2; 0.4>; MC – mean correlation R <0.4; 0.6>; SC – strong correlation R <0.6; and more>. Source: own processing.

The above results indicate that the following are statistically insignificant factors that do not effect entrepreneurial orientation: Enterprise's risk strategy (EO_{21}), Creating an entrepreneurial environment within the scope of the enterprise (EO_{33}), Aggressive activities towards competition (EO_{42}), Reputation for being an autonomous enterprise (EO_{51}).

Table 4

Characteristics of regression models

Factor	The regression models (Multiple linear regression function)	Characteristics of the regression models				
		Coefficient of Determination (R^2)	Adjusted R^2	Multiple correlation coefficient	F-ratio (p-value)	Multico-linearity (VIF)
EO_1	$EO = 0.4765 + 0.1056 \times EO_{11} + 0.1288 \times EO_{12} + 0.1394 \times EO_{13}$	0.54221	0.53995	0.73635	0.000	< 3.000
EO_2	$EO = 0.6162 + 0.0478 \times EO_{22} + 0.1711 \times EO_{23}$	0.36175	0.36006	0.60146	0.000	N
EO_3	$EO = 0.3501 + 0.1328 \times EO_{31} + 0.2189 \times EO_{32}$	0.41031	0.40874	0.64055	0.000	N
EO_4	$EO = 0.6812 + 0.0883 \times EO_{41} + 0.1304 \times 0.EO_{43}$	0.34176	0.34008	0.58460	0.0020	N
EO_5	$EO = 0.3927 + 0.0832 \times EO_{52} + 0.1706 \times EO_{53}$	0.43449	0.42768	0.65915	0.0000	N

Notes: EO – entrepreneurial orientation; N – Multicollinearity is not in the regression model.
Source: own processing

Based on the results of the regression analysis (Table 4), the following partial conclusions can be made: Multiple linear regression models are statistically significant, as the final p-value of F-ratio (Analysis of variance method) in each of the regression models in the table above is lower than the significance level of 0.05. The values of the estimated regression model parameters are not negatively affected by multicollinearity because the results of the variation inflation factor are lower than 5.

Regression model (EO_1) with a linear regression function explains 54.2% of the total variability of an entrepreneur's entrepreneurial orientation. Regression model (EO_2) with a linear regression function explains 36.17% of the total variability of an entrepreneur's entrepreneurial orientation. Regression model (EO_3) with a linear regression function explains 41.03% of the total variability of an entrepreneur's entrepreneurial orientation. Regression model (EO_4) with a linear regression function explains 34.17% of the total variability of an entrepreneur's entrepreneurial orientation. Regression model (EO_5) with a linear regression function explains 43.40% of the total variability of an entrepreneur's entrepreneurial orientation.

The most significant EO factors are: in the Innovativeness construct, it is the factor of Financial investment in the development of new methods and technologies ($EO_{13} = 0.1394$). In the risk-taking construct, it is Conducting risky projects ($EO_{23} = 0.1711$). In the Proactivity construct, it is the factor of Initiative on the target market ($PO_{32} = 0.2189$). In the Competitive aggressiveness construct, it is the factor of Activities performed towards competition ($PO_{43} = 0.1304$), and in the Autonomy construct, it is the factor of Support of

employees' initiative in search and execution of entrepreneurial opportunities (PO_{53}= 0,1706).

The results of the research confirmed the validity of H1. The results of the research confirmed that all factors within the Innovativeness construct are statistically significant and positively affect EO.

H2 was partially confirmed. It was determined that the enterprise's Risk strategy factor does not affect the EO.

H3 was partially confirmed, as it was determined that the factor of Creating entrepreneurial environment within the scope of the enterprise does not affect the EO.

H4 was partially confirmed, as it was determined that the Aggressive activities towards competition factor does not affect the EO.

H4 was partially confirmed, as it was determined that the Reputation for being an autonomous enterprise factor does not affect the EO.

4. Discussion

It was determined in this research that all EO constructs are important for increasing an enterprise's performance and maintaining its position on the market. It was determined that the most important factors within respective constructs are: Investing finances into the development of new methods and technologies, willingness to invest in risky projects, initiative on the target market, activities performed towards competition, and support of employees' initiative in search and execution of entrepreneurial opportunities.

These results correspond with the views of Brockman et al. (2012), Boso et al., (2013), Anderson and Eshima (2013), and Rahman et al. (2016).

A country's innovative activities are important for its future economic growth. According to Roszko-Wójtowicz and Bialek (2016), the Summary Innovation Index quantification indicator places Czech Republic as Nr. 14 within the European Union.

According to Czarniewski (2016), innovation is an important issue for many enterprises. Innovation causes the enterprise to be distinguished and attractive to customers. Consequently, innovation generates revenue and profit. The author argues that Polish SMEs' have opportunities to gain external financial resources in order to finance their innovative activities, e.g. in form of grants from the European Union; however, these are not used to the full extent. Vojtovič (2016) offers interesting conclusions in this matter: He claims that the results of his analysis and research indicate signs of an inefficient use of financial support from the Structural Funds, which is often directed to solve diverse acute economic problems. However, these funds do not increase their competitiveness.

In research by Kozubíková et al. (2016), 41% of entrepreneurs have agreed with the statement that their company has a reputation of an innovator. The authors found that there were statistically significant differences in the overall structure of the answers of university-educated entrepreneurs in comparison with other entrepreneurs, in the structure

of responses by micro-enterprises in relation to other companies. Highly educated entrepreneurs often in comparison with other entrepreneurs were stating that their company had a reputation of an innovator. SMEs in comparison with the micro-companies were responding more with affirmative answers. Authors claim that 62% of entrepreneurs agreed with the statement that in their companies, they regularly develop new products and services. Only 37.95% of respondents have approvingly responded that they were investing a lot of money into the development of new methods and technologies.

Results of research by Ključnikov et al. (2016) showed the fact that entrepreneurs perceive their business strategy as less risky. Only 14% of them have agreed with the statement that their business strategy is risky. There are not statistically significant differences in terms of gender of entrepreneurs and age of companies. The authors found significant differences in terms of entrepreneurs' education and size of the enterprise. It was determined that microenterprises and entrepreneurs with a lower level of education evaluated their strategy as more risky in comparison to larger companies. In this research, only 32% of entrepreneurs agreed with the statement that they are not afraid of investing money into risky projects. There were no statistically significant differences in terms of gender of entrepreneurs, their education, and age of enterprises. However, there are significant differences in terms of the age of enterprises. Those operating less than 10 years declared a higher willingness to invest in risky projects. Authors have found that only 29% of entrepreneurs agreed with the statement that they realized risky projects in order to improve financial performance of their enterprise. There were statistically significant differences in terms of entrepreneurs' gender. On the contrary, there were no statistically significant differences in relation to education, size and age of the enterprise.

According to Gudmundson and Lechner (2014), EO has a positive effect on the company performance with both cost leadership and differentiation strategies. Their results show that innovativeness and autonomy have a positive relationship with product differentiation strategy, whereas risk-taking and competitive aggressiveness have a negative relationship with innovativeness, but no significant relationship was found with proactiveness.

Overall, the research yielded interesting findings about non-aggressive approach towards competition, as the majority of examined enterprises do not view themselves as aggressive towards competition, nor do they conduct deliberate activities against their competitors (Kozubíková et al., 2015a).

According to Lumpkin and Dess (1996), the autonomy level varies based on the enterprise's size, leadership style and type of assets, which results also in lower or higher level of SMEs independence. When assessing autonomy, it is important to take into consideration the following factors: work method, work pace, work processes, planning, work criteria (Clear a Dickson, 2005). In relation to autonomy, Lukeš et al. (2014) revealed results which support findings of Lévesque and Minniti (2006) that as individuals get older, they are discouraged from entrepreneurship due to high risk or satisfaction postponement. Out of the total number of entrepreneurs in Czech Republic, 53,3% are people younger than 35 years, and their share has been increasing since 2006. The increase of entrepreneurial activities within this age group is influences by several factors (decline in employability of college graduates during economic crisis, the influence of Internet, mobile applications, and information and communication technologies in general which the young generation finds

appealing, as it allows to search for opportunities, as well as classes on entrepreneurship which are nowadays offered at colleges and partially also in high schools).

This research (Kozubíková et al., 2016) has shown that the researched entrepreneurs try to act independently, as 65% of them consider their staff appropriately autonomous and 71% support the initiative of their employees.

Conclusion

The aim of this paper was to define and quantify the significance of EO factors influencing SMEs business orientation.

This research confirmed that in terms of entrepreneurial orientation, all EO factors are significant for the enterprise's growth and maintaining its position on the market. The following factors are considered the most important within respective constructs: Investing finances into the development of new methods and technologies, willingness to invest into risky projects, initiative on the target market, activities performed towards competition, and support of employees' initiative in search and execution of entrepreneurial opportunities. Subsequently, it was discovered that some factors are insignificant for the overall level of EO, e.g. enterprise's risk strategy, creating entrepreneurial environment within the scope of the enterprise, aggressive activities towards competition, and reputation for being an autonomous enterprise.

There are some limitations to this research which determine the relevance of obtained results. The methodology used may involve certain subjective factors that have to be considered when evaluating the results.

Further research will be focused on exact detection of important factors that determine the result of the research, e.g. focus will be put on the question whether risk strategy is not considered important because it has not had a positive effect on the enterprise, or because most small enterprises simply do not perform strategic planning. The plan is to use a similar approach in analyzing the significance of other EO factors.

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SUMMARIES

Evgeni Stanimirov
Mariya Georgieva

CUSTOMER PROFILING BASED ON THE CRITERIA OF SUSTAINABLE CONSUMPTION

The ever-increasing implementation of the concept of sustainable business development changes the market focus of many companies. This is the result of striving to serve a specific market segment with strong development potential – the "sophisticated" customers' market. The principle idea is that "sophisticated" customers have high ethical consciousness and intense sustainable consumption. This article attempts to determine whether a segment of "sophisticated" customers can be identified in a specific branch of the Bulgarian economy (sale of carbonated soft drinks) and what its characteristics are. On this basis, an original model (SMF-model) of customer profiling has been developed which reflects the concept of customer sophistication. The abovementioned model can be useful for optimizing the customer portfolios of the companies and for more effective financial planning.
JEL: M31

Iglika Vassileva

LABOUR INTENSIVENESS OF ECONOMIC GROWTH IN BULGARIA: ESTIMATES, IMPACT OF THE GLOBAL CRISIS AND DRIVERS

The study of the employment intensiveness of economic growth has become topical in the light of observed high inequalities in Bulgaria, as well as demographic challenges and tightening of the labour market in recent years. To study it, we estimate the elasticity of employment and total hours worked with respect to GDP. We find that economic growth has impact on both indicators of the labour input with a lag of 3 quarters. However, the employment elasticity of GDP (0.81) is much higher than the elasticity of the hours worked with respect to GDP (0.29), which is attributed to a certain inertia in the dynamics of the latter.

Our results furthermore suggest that the relationship between economic activity and labour weakens during economic crises. There even seems to be a disconnect between economic activity and employment after the global economic crisis. The latter conclusion is drawn based both on the insignificance of the parameters estimating labour elasticity after the crisis and on an analysis of the breakdown of the GDP per capita growth by productivity and employment growth, where the contribution of extensive employment growth to the increase of the GDP per capita significantly subsides after the global crisis.

Finally, estimating the employment elasticity of GDP, we find that it is highly unstable in time and depends on the structure of value added in Bulgaria, but also on labour supply, size of the informal economy and, more generally, on the phase of the business cycle. Taking into account the non-registered sector, in particular, we find that the responsiveness of employment to GDP becomes much higher, quicker and does not essentially change during economic downturns.
JEL: E24; E26; E27; J23; C22

Iavor Bachev

COMBATING FINANCIAL STATEMENT FRAUD – AN ANALYSIS AND MODEL FOR THE REPUBLIC OF BULGARIA

This paper presents a research performed on financial statement fraud in the Republic of Bulgaria. The results of the questionnaire used to collect information have helped prepare a model applicable to the country. The model considers the role of different stakeholders in the organization, namely management, internal audit, board/directors and external audit and parties in the outside environment in the face of government and supporting institutions. Moreover, the main issues that have been identified in regard to each party have been summarized and linked with potential solutions that can be implemented in practice. Namely: more independence of board members and audit function in organizations, limited non-audit services by external auditors, increasing the consequences from such fraud and leveraging the benefits of professional organizations.
JEL: G00, G30

Kalina Durova

ARE THE NEW MEMBER STATES READY TO JOIN THE EURO AREA? A BUSINESS CYCLE PERSPECTIVE

The present research employs a vector autoregression (VAR) approach to assess the degree of business cycle synchronization between the new member states (NMS), which have not adopted the single European currency, and the Euro area (EA). The main fiscal and monetary factors affecting the business cycle coordination between the NMS and the EA have been identified. The causality between the business cycle convergence of the NMS and the EA and the implemented fiscal and monetary policies has been investigated in the short and in the long term. Recommendations and conclusions on the readiness of the NMS to join the EA have been made.
JEL: E32; E42; E50

Dobrinka Stoyanova
Blaga Madjurova
Stefan Raichev

SOCIAL COHESION (BULGARIA – EU – WESTERN BALKANS)

The current study examines the social cohesion between the Western Balkans, Bulgaria and the EU within the context of the labor market. It represents an overview of the more well-known theoretical concepts, relevant to the understanding of the social cohesion, as well as of the tools for its measuring. The achieved level of convergence between the surveyed countries is evaluated, based on the analysis of the indicators related to the labor market dynamics. The main EU strategies and policies are presented for promoting the accession of the Western Balkan countries on the way to their future membership. Critical points are identified for the necessity of key reforms in national policies to strengthen the social cohesion in the labor market context as an important link in the social cohesion policy chain.
JEL: O52; O57; J60; F68; F66; E60

Presiana Nenkova
Angel Angelov

ASSESSING THE EFFECTS OF IMPOSING VAT ON THE SERVICES PROVIDED BY THE BANKING SECTOR – THE CASE OF BULGARIA

The treatment of banking services as VAT exempted is a dominant model and common practice among EU member countries mainly due to the technical difficulties of calculating value added and applying the general credit - invoice method of VAT taxation. Not charging VAT on banking sector results in overtaxation of business customers and undertaxation of final consumers, and creates serious distortions in the economy. With this study and empirical assessment made, we seek to address some of the problems that have not been solved so far and to contribute, at least to a certain degree, to the ongoing academic debate on whether financial services need and should stay VAT exempt. By using a modified mobile-ratio method the current paper explores and assesses economic effects of including banking sector in the range of VAT taxable supplies. To identify the potential gains and losses that could have been generated under a hypothetical case of applying VAT to banking services in Bulgaria we provide a quantitative estimate for the period 2008 through 2016 at two separate levels: (1) banking system, and (2) business consumers of banking services. Finally, we estimate the volume of revenue that could has been accumulated to the State budget during the period under review if banking services were subject to VAT.
JEL: H20; H22; H25; G2

Tatyana Netseva-Porcheva
Vasil Bozev

PROFILING COMPANIES ACCORDING TO THE ADOPTED PRICING STRATEGY

The study presents the results from empirical research on the profiling of the companies operating in Bulgaria in terms of the pricing strategy adopted by them: cost-based pricing, competition-based pricing and value-based pricing. It includes a literature review of the theoretical and empirical research on pricing strategies, studies the most common pricing strategies used by the companies operating in Bulgaria and suggests the main criteria used to profile companies in terms of the pricing strategy adopted by them.
JEL: M39; D47

Jaroslav Belas
Jan Dvorsky
Ludmila Kozubikova
Martin Cepel

IMPORTANT FACTORS OF SMES ENTREPRENEURIAL ORIENTATION

Effective implementation of EO attributes represents an important factor of SMEs' success on the target market, and significantly determines its long-term existence.
The aim of this paper was to define and quantify the significance of EO factors influencing SMEs business orientation. In connection to the defined target, separate research was conducted using a questionnaire in the Czech Republic attended by 1,141 enterprise owners within the SME segment. The method of regression analysis was used to quantify the significance of respective factors and to determine their statistical significance.

The results of the research indicate that SMEs' entrepreneurial orientation is mostly affected by the following factors: Investing finances into development of new methods and technologies (EO_{13}), Conducting risky projects for the purpose of increasing the enterprise's performance (EO_{23}), Initiative on the target market (EO_{32}), and Activities performed towards competition (EO_{43}). Subsequently, it was determined that factors such as Enterprise's risk strategy (EO_{21}), Creating entrepreneurial environment within the scope of the enterprise (EO_{33}), Aggressive activities towards competition (EO_{42}), and Reputation for being an autonomous enterprise (EO_{51}) do not affect the overall degree of entrepreneurial orientation.
The results of this research may serve as an inspiration for further research in the field of SMEs entrepreneurial orientation.
JEL: L26; O16; G21