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## THE SERBIAN FUNCTIONAL FOOD MARKET: DOES REGULATION MAKE A DIFFERENCE?

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**ABSTRACT:** *This paper focuses on empirical analysis of the Serbian functional food market and its comparison with those in other Western Balkan countries (WBC). The purpose is to examine whether the existence of regulation, as an institutional precondition, makes a difference on the operating of the functional food market. This market is a new, fast developing segment, based on health claims made for food. Consumers in Serbia cannot verify health claims either before or after the purchase/consumption, since the property rights on information are extremely weak. Additionally, with successful innovation the free-rider problem usually occurs. Thus, strong institutional support is necessary to ensure regular market functioning. In order to identify the effects of regulation and some other factors with crucial*

*influence on the differences between Serbian and other WBC functional food markets, pooled cross sectional analysis is conducted. The fixed-group effects model is estimated based on data of product categories observed across WBC. Differences in the current level of WBC market development could be explained by the existence of legal regulation, competition, and other factors. All results implicate the necessity of regulatory supervision as well as closer cooperation between government, the private sector, consumer groups, academics, and the research community in further functional food market development in Serbia.*

**KEY WORDS:** *Functional Food, Health Claim, Regulation, Pooled Cross Sectional Analysis.*

**JEL CLASSIFICATION:** Q13, Q18, I18, C52

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## **1. INTRODUCTION**

Since the 1990s government policies in both developed and developing countries have put more emphasis on health promotion and preventive measures against illness. A new food category, termed 'functional food', has gained in importance and started to develop rapidly. It is one of the most promising food market segments in Europe and worldwide. Functional food is marketed as food that improves health and wellbeing beyond the health effects of conventional food. However, these products were introduced at a particularly sensitive moment when food scandals had appeared (BSE, dioxin, foot and mouth disease, etc.). Consumer trust in food safety had been eroded and public authorities put a significant amount of effort into institutional support (R. Chadwick et al., 2010). New food institutions were introduced: for example, the European Food Safety Authority (EFSA) was established in 2002, the Food Safety Law adopted at the national level and Regulation 1924/2006 on Nutrition and Health Claims made on foods at the supranational level. From the institutional point of view, special attention is paid to the cost benefit analysis of health claims.

The functional food market first-order effects are frequently discussed in literature (Burrows et al., 1995; Nayga et al., 1998; Roe et al., 1999; Garde, 2008). The most beneficial effect for public nutrition policy is dissemination of health information that consumers might not gain through other, regular media. Information cost components are addressed to the out-of-pocket purchasing of information (e.g., price of book or magazine) or to the value of time spent on searching for, absorbing, and understanding information. The health-related marketing messages can be an efficient catalyst for inducing consumers to search more, as well as an effective way to communicate with sub-populations not reachable by other information sources. The final effect could be seen in the reduction of health care costs if better informed consumers choose healthier food and change their overall activities towards a healthier life style.

The second-order effects refer to the market – e.g., competitors' reactions (Nestle, 2002; Herath et al., 2008, Thompson et al., 2008). Functional food market development significantly increases the demand for health research, and consequently improves product quality. However, investment in new functional product development might cost as much as innovation in the pharmaceutical industry (Chadwick R. et al., 2010). The leading companies are exposed to important budget restraints in product development. Moreover, a follow-up strategy is the usual reaction of competitors. Thus, the free rider problem occurs, which might have a negative influence on research and development activity

taken by the industry leader, emphasizing the possible impact on total innovation efficiency.

If the health claim is false or misleading both consumers and manufacturers end up worse off. Two types of errors might appear. The type I error refers to allowing harmful health claims: (a) the consumer pays more for foods incorrectly believed to be health beneficial, or, even worse, increases her/his health risk; (b) the credibility of all claims is reduced and companies lose their market position. The type II error is based on prohibiting beneficial health claims, and could be interpreted as unqualified, irresponsible, and inadequate state governing: (a) consumers are not informed as efficiently as possible; and (b) companies lose an important source of market positioning and differentiation while public authorities are left without efficient means of public health policy management. Therefore governments need to work closely with the private sector, consumer groups, academics, and the research community in order to facilitate the full potential of functional food market development in the future.

Since 2006 the EU functional food market has been under a high level of EFSA supervision. Within the EU, regulative health claim means “any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health” (Regulation EC, No. 1924/2006). The analysis applies to products with structure and function claims, as well as disease risk reduction claims. Structure and function claims describe the effects of a food or nutrient on the normal functioning of the body. An example of this type of claim is “high in calcium - calcium builds strong bones”. Disease risk reduction claims imply a relationship between dietary components and a disease or health condition. Claims that link calcium and vitamin D with prevention of osteoporosis, and saturated fat, cholesterol, and sodium with the statement “helps maintain cardiovascular health” fit into this category. Most of the Western Balkan Countries (WBC), Bosnia and Herzegovina, Montenegro, Macedonia, and Serbia, still lack regulation on health claims made on foods. Furthermore, their regulations on disease risk claims have not yet been harmonized with the EU, except recently in Croatia. Advertising by pictures, signs, or text which may mislead consumers is specifically forbidden in all WBC. However, the usage of structure and function claims is not strictly forbidden in Serbia and other countries in the region (provisions of the Food Safety Law). This situation means that in most WBC the functional food market operates under institutionally unregulated conditions.

The EU Regulation defines a nutrition claim as “any claim which states, suggests, or implies that a food has particular beneficial nutritional properties due to the energy (calorific value) or the nutrients or other substances.” (Regulation EC, No. 1924/2006). Although the regulation on nutrition claims in most WBC is not fully harmonized with the EU regulation, there is a strong relationship between lawfully permitted claims. A total of 24 strictly regulated nutrition claims that are comparable with the EU regulation exist in certain circumstances in Serbia (as well as in other WBC). In Serbian regulation (Official Gazette SRJ, 4/2004, 12/2004, 33/2004, 48/2004: Declaration and Packed Food Labelling Rule Book) nutrition statements made on food can be presented in the form of a table with the following information: energy value and food components - proteins, carbohydrates, fats, fiber, sodium/salt, vitamins or minerals. Nutrition labelling is obligatory if the declaration contains one or more nutrition claims approved by the regulatory body (high in, low in, zero, enriched, source of, natural, etc.); otherwise it is voluntary. Thus nutrition claims are allowed and clearly specified. However, newly adopted nutrition claims (Regulation EC No.116/2010), e.g., “source of Omega3 fatty acids”, “high in fat” – “polyunsaturated”, “monounsaturated” or “unsaturated fat”, are not yet regulated in Serbia.

The health claims use mentioned above is usually connected with nutrition labelling. Whenever the market is underdeveloped, as in the case of Serbia, the analysis is necessarily based on products with both nutrition and health claims (N&H claims). Hence, the focus in this paper is on food with N&H claims observed across the following WBC: Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, and Serbia. Due to the specific characteristics of regional markets (the former Yugoslav Republics), comparative analysis in this paper includes Slovenia – an EU member state and a highly regulated market. The analysis is based on recent research carried out by the European Commission - FP7 Focus-Balkans (Grant Agreement no. 212579) and WP6 results (Stojanovic Z. et al., 2010). Functional food is considered via seven product categories (cereals, dietetic food, biscuits, nectars, yogurt, margarine, and milk).

Finally, it is important to note that the literature review for Serbia shows an extremely weak research interest in functional food. There are only a few theoretical articles analysing the legal environment and regulations regarding this food type, its definition, labelling, good nutrition practice, and food safety (Dimitrijevic-Brankovic S. et al., 2002; Stankovic et al., 2002; Ristic, 2003; Miletic et al., 2008). However, the authors' intention in this paper is not to analyse the regulation aspects of these claims, but to investigate whether the regulation makes any difference in Serbian market structure compared with other WBC.

This goal leads us to three additional research questions: (1) If the regulatory framework does not exist, does it necessarily mean that the functional food market is not operative, or at least underdeveloped? (2) Does the functional food market structure in Serbia reflect all stakeholders' interests? (3) What might be the most important consequences of the institutionally neglected importance of functional food market development in Serbia?

## **2. THE DATA AND RESEARCH METHODS**

Since national statistics do not support our analysis with relevant data on products with N&H claims, a reliable method for data collection is the linear and specialized shop survey. This survey was carried out by market research agency Ipsos Strategic Puls, operating in all WBC. The shop survey was conducted in December 2009 in each WBC, for the purpose of identifying functional food products and their characteristics. The survey was conducted in international retail chains, regionally present retail chains, the key retail chains present only in the domestic market, and the key retail chains of so-called "health food" (specialized retailers). Data collection enables a complete overview with a high rate of reliability in the field of research. The main shop survey objectives were: (1) identification of products; (2) differentiation of products according to their characteristics and classification of claims; (3) identification of processors and brands of products within each investigated category group.

As a result of the survey, all 475 different N&H claimed products that are present in the WBC market are identified with the general characteristics: group, subgroup (category), brand, product description, specific content, claim, manufacturer, and origin. In order to explore the structure of the N&H market, all these products are classified into the following seven homogenous product categories in each WBC: 1- cereals; 2- dietetic food; 3- biscuits/sweets; 4- nectars; 5- yogurt; 6- margarine, 7- milk. In this way the shop survey allows both a detailed analysis of available products and their characteristics in the explored categories. The data set for all WBC includes a number of variables for each product category, such as the number and origin of products, number and origin of producers, number and origin of brands, number of nutrition and health claims, type of health claim, minimal and maximal number of claims per product category, and the visual form of the product presentation.

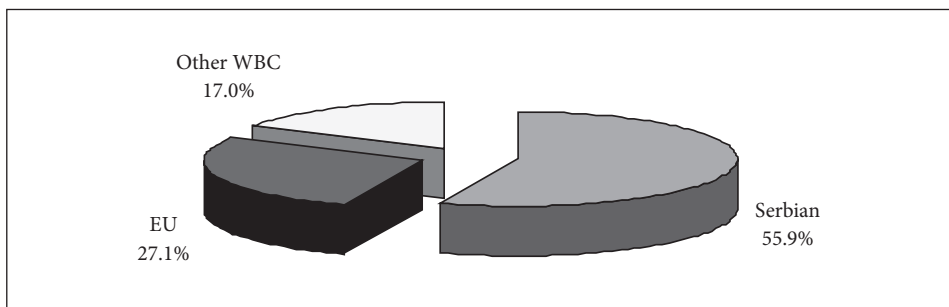
As mentioned earlier, one of the main purposes of the paper is to discover the causes of the difference in the level of functional food market development among

WBC, especially the differences between Serbia and other WBC<sup>1</sup>. Particularly, the effect of regulation as one of the main potential causes of these differences is considered. To this end the regression model is estimated based on pooling data on product categories across WBC. Pooled cross-sectional analysis enables us to make comparisons in two cross-section dimensions (across product categories and WBC)<sup>2</sup>. Before presenting the main findings of this analysis (Section 4) some results of descriptive statistical analysis are considered, as follows.

### **3. N&H PRODUCTS STRUCTURE IN SERBIA- SOME RESULTS OF THE SHOP SURVEY**

This part of the paper contains descriptive analysis of the N&H products survey in Serbia, as the largest unregulated functional food market in the region. The shop survey of the Serbian market covers 166 N&H products - more than one third of all N&H claimed products present in the WB region. The specific characteristic of the Serbian functional food market is the dominance of domestic producers. More than half of all analysed N&H products present in the Serbian market are of domestic origin, above one fourth of those products are manufactured in the developed countries of West Europe, and 17% come from other WBC (Figure 1). This is in contrast to the regulated Slovenian and Croatian markets, which are more concentrated on products from the regulated EU market than on domestic products and those from the WB region.

**Figure 1:** N&H products by origin

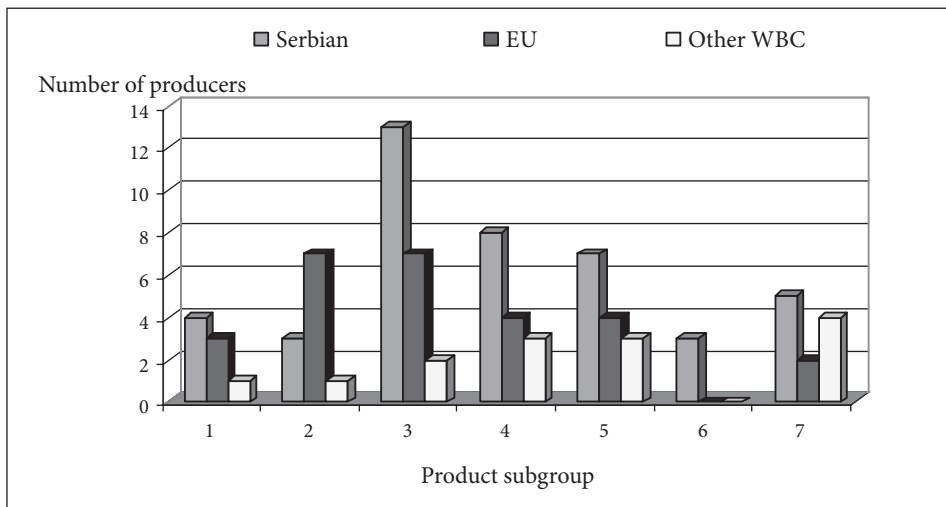


**Source of data:** IPSOS Strategic Puls.

- 1 More about differences across WB functional food markets and product categories in: Stojanović, Dragutinović Mitrović & Gligorić (2010).
- 2 Pooled cross-sectional analysis builds upon the traditional cross-sectional study by examining multiple cross-sections at a single point in time or by studying single cross-sections at several time points (thus leading to the panel data set).

The structure of N&H producers by origin is similar to the N&H products structure: 51.2% of manufacturers are domestic, 32.1% are of EU and Swiss origin, and 16.7% come from WBC. Observed by product category, it appears that 44% manufacture dietetic products and sweets, while margarine has the smallest share. The structure of manufacturers by origin shows that domestic producers are dominant in the six observed categories, followed by EU producers, except in dietetic products (Figure 2).

**Figure 2:** Manufacturers by N&H product groups and origin



**Source of data:** IPSOS Strategic Puls.

The dominant position of domestic producers is especially evident in confectionary (biscuits and sweets), dairy (yogurt and milk), and margarine. The low presence of foreign companies could be due to the high entry barriers or to the high competitiveness of Serbian producers. Dairy production and processing is a strategic branch of the agriculture and food industry in Serbia and so is highly protected by governmental policies. The highest value of primary production is achieved in this sector and much of the population in rural areas is involved in milk production (over 280,000 agricultural households). The sector's competitiveness is shaped by high tariffs and non-customs measures. Thus high barriers to market entry create high price competitiveness of domestic producers and extremely low competitiveness of foreign companies. The largest milk processing capacity in the Balkans is located in Serbia and all factories in the milk sector have been privatized and market-oriented, giving strong support to further sector development.

The analysis of all 166 products shows that only 14% of them have health claims. 6% of products have dietetic claims and 5% claim to be organic. The majority of Serbian N&H products have general health claims as in other WBC, since this health claim type is not strictly forbidden (provisions of the *Food Safety Law*), while only a few claim disease risk reduction. This enables most of the Serbian functional food market to operate under unregulated conditions. Therefore the further analysis aims to explore the main causes of the differences in functional food market development between Serbia and other WBC, particularly those with regulated markets.

#### **4. REGULATION OF N&H CLAIMS AND THE FUNCTIONAL FOOD MARKET-ESTIMATION RESULTS**

To estimate the effects of the main factors (particularly regulation effects) on differences in functional food WBC market development, pooled cross sectional analysis is used by combining multiple cross-sections and studying them at a single point in time. As opposed to traditional cross-sectional studies, this method of analysis allows us to examine differences across space. As in the case of panel data (where the cross section is pooled over time), this pooled cross-sectional analysis is conducted for several reasons: the inclusion of two dimensions of variation increases the sample size and consequently the efficiency of the estimates, the multicollinearity problem among regressors can be avoided, etc. This advantage enables us to study a larger number of observations; that is, to make a comparative analysis in at least two dimensions.

The data set used in this analysis contains data on seven N&H product categories observed in the six WBC, which in total gives 42 observations for each variable<sup>3</sup>. All estimated equations are in the form of the pooled regression model, which is in the following general form:

$$y_{ij} = \alpha + \beta X_{ij} + \gamma Z_j + \varepsilon_{ij}, \quad i=1,\dots,N; j=1,\dots,M$$

where dependent variable  $y_{ij}$  is the N&H number of products of category  $i$  in country  $j$ , reflecting functional food market diversification as a proxy for the current state of the market<sup>4</sup>. Stochastic disturbance term  $\varepsilon_{ij}$  is by assumption

<sup>3</sup> As mentioned in the Section 2, the data on seven product categories in six WBC are obtained from the shop survey of products with N&H claims conducted in December 2009.

<sup>4</sup> The number of N&H products could be used as a proxy for diversification of the functional food market, at least for its specific segments. Among all available variables within the



independently identically distributed:  $\varepsilon_{ij} \sim IID (0, \sigma_\varepsilon^2)$ . The set of  $X_{ij}$  contains regressors that vary in both dimensions  $i=1, \dots, N$  and  $j=1, \dots, M$ , while  $Z_j$  refers to regressors varying in dimension  $j$ , i.e., across countries. More precisely, the set  $X_{ij}$  includes the following potential factors of variation of the number of N&H product across WBC: origin of producers (measured by number of producers from the EU and number of domestic producers per product category), the presence of health claims, and type of nutrition and health claim. In addition a set of  $Z_j$  variables contains factors whose effects vary across countries but are invariant over product categories within the country, such as the existence of regulation in the field of N&H products and country-specific effects captured by relevant dummy variables. In other words, the model contains dummy variables for the individual (country) and group-specific effects along with the common intercept term. Since the model is in the form of fixed group effect specification, it can be estimated by the least squares dummy variable (LSDV) method.

The analysis from the previous section indicates variations in the N&H number of products across WBC N&H markets. According to the analysis of the variance F test, these variations seem to be statistically significant (Table 1). The test indicates that the differences are significant not only across product categories, which was expected ( $F=3.916$ ;  $p\text{-value}=0.0043$ ), but also across all WBC ( $F=3.850$ ;  $p\text{-value}=0.0068$ ).

**Table 1:** The analysis of variance

**Variable: Number of N&H products**

Anova F-test	df	Value	Probability
WBC	(5, 36)	3.850402	0.0068
Product categories	(6, 35)	3.916162	0.0043

Hence, our intention here is to identify the factors which contribute to these differences, particularly whether the existence of regulation makes a significant difference across the WB region. Of all available variables, in explaining the differences in the number of N&H products (dependent variable: NO\_PROD),

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collected data set we did not have a better alternative for the aimed measure. However, collected data give an exclusive set of systematic information on the current state of the market. Our intention is not to measure functional food market volume and its importance in the overall food market, but to explain differences in the current state measured by the level of product diversification.

the initial regression model contains the following explanatory variables: number of producers from the EU (PRODUCER\_EU), number of domestic producers (PRODUCER\_DOM), number of products with health claims (HC) and the dummy variable REG, taking value 1 for markets with existing regulation (Slovenia and Croatia) and 0 otherwise. Since the particular aim is to test the differences between Serbian and other WBC market structures, the dummy variable for Serbia (SRB) is also included, as well as the interaction term of this dummy and other explanatory variables. The estimation results of this initial model are presented in Column (1) of Table 2.

In order to explore which type of HC significantly contributes to the different functional food market structures across WBC, three variables are included in the model to account for: general (non-specific; type 0), functional (type 1), and risk-disease type (type 2), and estimation results are given in Column (2) of Table 2.

**Table 2:** The role of regulation, origin of producers, and HC

Dependent Variable: NO\_PROD

Variable	Regression coefficient	
	(1)	(2)
Constant	2.6191**	2.7459**
REG	-6.7268***	-6.9873***
SRB	7.1947**	7.2128**
PRODUCER_EU	1.4074***	1.4375***
PRODUCER_DOM	2.1215***	2.1699***
PRODUCER_DOM*SRB	-1.4405**	-1.4834**
HC	1.2009***	
HC_0		1.0396**
HC_1		1.3731***
Adjusted R-squared	0.793	0.783
F-statistic (prob)	27.211 (0.000)	22.185 (0.000)
Jarque-Bera (prob)	2.716 (0.257)	1.1913 (0.551)
Durbin-Watson stat.	2.1050	2.0621
Breusch-Pagan-Godfrey stat.	9.3851(0.153)	11.523 (0.127)
RESET test	1.3200 (0.281)	1.1192 ( 0.339)

**Note:** p-value in parentheses of the test statistics; \*\*\* statistically significant at 1% level; \*\* statistically significant at 5% level; statistically significant at 10% level.

According to the results<sup>5</sup>, the significant negative coefficient of the variable REG indicates that the existence of regulation decreases the number of products. In other words, Slovenian and Croatian functional food markets with existing regulation seem to have a smaller number of N&H products. This factor appears crucial in explaining the differences across WBC functional food markets. The implication of this result is explained in more detail in the next section of the paper. The meaning of the significant and positive coefficient for the dummy variable for Serbia is obvious. The variable intercept term confirms a significantly larger number of N&H products in Serbian market compared to the other WBC.

The origin of producers present in the WBC market is also an important factor. The presence of both domestic and EU producers has a positive impact on the number of N&H products. The impact of the number of EU producers is significant in the whole WB region. Judging by the regression coefficients values, it seems that the domestic producers contribute more to N&H growth than the EU producers, implying that unregulated markets provide more incentives for the variety of claims, and consequently more N&H products. Furthermore, we found a significant difference between Serbia and others with respect to the number of domestic produce effects<sup>6</sup>. The lower coefficient for Serbia than for the other WBC (coefficient of interaction term -1.4405; column (1) in Table 2) indicates a lower positive response of Serbian market to the unit increase of the number of domestic producers than in other WBC.

In addition the number of HC per product category seems to have a significant positive impact on the total number of N&H products in the WBC market. To investigate whether these effects differ between Serbia and the other WBC, the change in slope coefficient is tested by adding the interaction term along with the HC variable. However, it appears the effect of the HC variable does not differ in Serbia compared to the other WBC.

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5 According to specification and diagnostic tests, it seems that estimated models from Table 1, perform well. The Jarque-Bera test statistics are not significant, indicating that residuals are normally distributed. According to the Durbin-Watson test statistics for AR(1) errors and the Breusch-Pagan-Godfrey test, it seems that problems of autocorrelation and heteroskedasticity in the residuals are not evident. Finally, the RESET test shows there are no specification errors, such as incorrect functional form, omitted variables, or correlation between regressors and error term.

6 The effects of the number of producers from the EU on N&H product numbers are not significantly different in Serbia than in the other WBC (due to the insignificant interaction term of the dummy variable SRB and the number of EU producers, it is not included in the final model).

Regarding the issue of HC type effects, it seems that the number of HC of type 2 (risk-disease) does not contribute significantly in explaining the differences in market structure. Contrary to this, both general (HC\_0) and functional health claim (HC\_1) types have a significant impact on the dependent variable, with a slightly higher slope coefficient of the functional HC type variable (column (2) in Table 2).

It is often argued that the health related information provided on foods is not always understandable for consumers. The use of pictograms as a dominant visual form of product communication is adjusted to the manufacturers' intention to exploit the position of the socially responsible firm that cares about consumer health and well-being<sup>7</sup>. It also might indicate the most effective marketing strategy communication for average consumer knowledge. That is why this form of product communication has to be considered, so the previous model is extended by including the variable pictogram (PICT). Since it measures the number of products containing pictograms, this variable is useful in defining the percentage of marked products. Including the variable PICT in the model, the intention is to test whether the visual product presentation influences market diversification across the WBC N&H market.

**Table 3:** The effects of pictograms

Dependent Variable: NO\_PROD

Variable	Coefficient	t-Statistic	Prob.
Constant	2.2747	1.7142	0.0959
REG	-6.5219	-3.2250	0.0028
SRB	10.1997	3.2227	0.0029
PRODUCER_EU	1.3959	6.5168	0.0000
PRODUCER_DOM	2.1483	4.5796	0.0001
PRODUCER_DOM*_SRB	-1.6499	-2.3645	0.0241
HC	1.1998	3.7760	0.0006
PICT	2.9119	0.7338	0.1859
PICT*SRB	-11.6017	-1.3508	0.4683
Adjusted R-squared	0.787414	Jarque-Bera (prob)	2.004329 (0.3671)
F-statistic (prob)	19.98290 (0.000)	Durbin-Watson stat.	2.015256
Breusch-Pagan-Godfrey stat.	10.7255 (0.2177)	RESET Test	0.3075 (0.5831)

**Note:** p-value in parentheses of the test statistics.

<sup>7</sup> This form of product communication targets the typical functional food consumer – well educated, young, high income, and female. It includes waist measure, good digestion and heart, etc. The logos and images used to state or imply a claim play an important role in the way claims are perceived and understood by the consumer.

Judging by the estimation results presented in Table 3, all earlier included variables remain significant in explaining dependent variable variations. However, the regression coefficient of the additional variable PICT, although positive, is not significant. Also, in the case of Serbian market, the regression coefficient appears not to be significantly different than for the other WBC markets (interaction term PICT\_SERB). This implies that the visual form of the product presentation does not significantly increase the number of N&H products in the WB region. This could be explained by the fact that producers use pictograms either as an alternative or in addition to the conventional health claims on already existing products. It cannot increase the number of products itself. However, it appears to be an effective form of health benefit communication for the average consumer.

## 5. POLICY IMPLICATIONS

This paper examines the role of regulation in configuring the functional food market in Serbia. The analysis addresses the importance of legislation in functional food market development. The overall research does not focus on market size measured by volume and share. Thus, the analysis is not based on the weighted estimates. It rather aims to examine differences between countries in the WB region regarding the current state of functional food market development (measured by number of products with N&H claims) and its structure (estimated by number of producers, product origin and type, as well as visual form of claim presentation). Made on an *ad hoc* basis, it is the first analysis of this kind in WBC. Overall, the research gives an overview of the current state of the market in Serbia, resulting in important policy ramifications.

The estimation results clearly point out that the existence of regulation of N&H claims, the origin of the producers, and the presence of health-claim products make a significant difference to the WBC market and competitiveness. In comparison with regulated markets in the region (Slovenia and Croatia), the unregulated Serbian market is characterized by a larger number of both N&H claim products and manufacturers, as well as the dominance of domestic and non-specific health claims. As mentioned earlier, more than one third of all products registered in the WBC market is surveyed in Serbia. Domestic manufacturers dominate over both EU and other WBC producers in Serbian market structure. Most of these industries are privatized. On-going restructuring processes during transition focus more attention on the firms' market orientation and competitiveness. In other words, domestic firms are oriented towards construction of socially responsible behaviour – they put more emphasize on marketing consumer health

and well-being. On the other hand, higher import duties on food might also be responsible for the lower presence of foreign companies in Serbian market compared to other countries in the region.

The results of this paper show that the functional food market is operative even under unregulated conditions. However, it provides a greater opportunity to manipulate consumer choice. The market is mostly composed of non-specific health claims, and this might be considered an important obstacle for further development. This is particularly true if the health benefit of novel food is not widely known or scientifically approved. In addition, consumers are confused by different forms of product presentation (pictograms) that aggressively address product health benefits.

The analysis presented in this paper confirms that food consumers are not generally provided with the specific health information that might lead to healthier food choices (1- functional or 2- disease risk health claim types). In fact, the health claim type 0 (general type) is dominant in Serbia and all over the WBC region. From the consumers' perspective, the use of health claims in the food market in general might be controversial. Due to the existence of regulation this type of claim is not even considered eligible. Thus the strong dependence of market development based on non-specific health claims might be explained by the absence of regulation. It is also important to note that even if regulation is adopted, the market is faced with very slow implementation of the law in practice - regulation effects are limited, at least in the early period, due to the fact that successful implementation of regulation relies on the existence of relevant institutions and their strong support of system functioning. In other words, regulation is applicable only if the accompanying institutions exist.

Although the visual form of presentation does not appear important in our explanation of differences in the level of functional food market development, companies exploit it as an effective marketing tool. It appears to be an effective form of health benefit communication for the average consumer who is not very interested in detailed information provided by the label.

This paper's research also addresses important issues of the further market development of N&H claim products in Serbia. The market structure would not be the same if new nutrition claims were introduced. The list of adopted nutrition claims in Serbia has to be completed with EU regulation 116/2010 (the Commission regulation amending Regulation (EC) No 1924/2006). The improved list targets the most important public health policy issues regarding

non-communicable diseases and it might facilitate further market development. However, the introduction of health claims regulation in Serbia would probably lead to a significant change in the functional food market structure, as has already happened in those countries in the region where regulation has been adopted. It could decrease the number of N&H products, particularly those with health claim type 0. In this situation domestic producers could be seriously affected, as their aggressive advertising of products with health claims might be judged inadequate. This could also lead to a loss of consumer confidence, not only in products with health claims but also in the overall offer of certain manufacturers.

On the other hand, this change could give producers the opportunity to explore and facilitate further growth by concentrating their efforts on production and advertising of food with scientifically approved claims. It could lead to the choice of healthier food by better-informed consumers, as well as to the improvement of public health in the country. Finally, functional food market development is based on the versatile cooperation of all stakeholders - consumers, producers, and public policy makers, especially in the field of nutrition and health.

## 5. ACKNOWLEDGMENTS

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Some of the results from the first version of this paper were presented at the International conference: *Market Failures and the Role of Institutions*, EACES, Milocer/Montenegro, September 2011.

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<sup>8</sup> FOCUS-BALKANS: Food Consumer Sciences in the Balkans: Frameworks, Protocols and Networks for a better knowledge of food behaviours, FP7 Cooperation Work Programme: Theme 2 – Food, Agriculture and Fisheries, and Biotechnology, Grant Agreement no 212579.

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