UDC: 339.152(497.11)

Original Scientific Article

THE IMPACT OF MARGIN ON THE PERFORMANCE OF TRADE COMPANIES IN SERBIA

Radojko LUKIC
Faculty of Economics, Belgrade,
University of Belgrade, Serbia

As it is well known, one of the most important forms of profit in trading companies is the gross margin. By its size it should be as such to cover total operating expenses (business costs) and to gain certain amount of profit for the needs of further development and growth of the trading company. It is one of the "critical factors of business success" in trading enterprises. Based on the comparative analysis, in this article we have explored the impact of the gross margin on the performance of trade enterprises in selected countries (United States, European Union, Russia, China, Slovenia, Croatia and Bosnia and Herzegovina), with special emphasis on Serbia. It was concluded that the gross margin of trade in Serbia is at a lower level compared to many western countries, as well as Russia, and China. It was at about the same level as in Croatia, but higher than in Slovenia and Bosnia and Herzegovina. At a given level of gross margin profit increase can be primarily achieved by reducing operating costs by applying "new business model" in the trade of Serbia.

Key words: gross margin, operating expenses, profit, determinants, managing.
Jel classification: L81, M31, M41, O32

rlukic@ekof.bg.ac.rs

1. INTRODUCTION

In trading business, gross margin is used to cover operating costs (business costs) and to achieve the targeted profit. By its structural characteristics it is one of the "critical factors of business success" of trading companies. Gross margin is under the influence of numerous factors and varies among countries, trading companies, retail formats (types of store) and product categories (groups of goods, and the individual items) (O'Riordan, 1993; Potjes, 1993; Manser, 2005; Draganska et al, 2007; D'Arcy, 2012; Nowakowski, 2016; Lovreta, 2016; Kuman 2017; Measuring up Retail Benchmarking Survey, PwC, www.pwc.com/ca/retail, March, 21, 2017). The significant factors of size and structure of gross margins include increased use of modern concepts of cost management, information and communication technology, as well as the Japanese business model in trading enterprises. The direct effects of this we find in reducing of operating costs, as one of the components of gross margin. At the same size of the gross margin this has resulted in an increase of profits in trading companies, that is retailers.

There is a strong correlation between the gross margin and inventory turnover. This is indicated by empirical research in the retail sector (Gaur et al., 2014; Khan et al., 2016). The relationship between the size of gross margins and inventory turnover is reverse. The larger the size of the gross margin the lower inventory turnover and vice versa. Their appropriate control, by using so-called strategic profit model, can greatly affect the achievement of the targeted gross margin return on inventory. More efficient inventory management, at the same size of the gross margin (by increasing their turnover speed) can influence the increase of targeted gross margin return on inventory. Efficient management of the inventory is achieved by the application of the just-in-time philosophy, the concept of product categories managing, as well as the concept of direct product profitability (Berman, 2013; Levy, 2014, Končar et al., 2016ab). It is similarly with effective management of customers and suppliers (Trninic et al., 2011).

Extensive literature has been devoted to the analysis of efficiency of management of gross margin in trading enterprises, which has continuously explored the factors of the gross margin in trade of different countries, regions, individual trading enterprises, sectors of trade (wholesale, retail, and motor vehicles), commercial firms sizes (large, medium and small), retail formats (types of stores) and

product categories. Likewise, the effects of the application of "new business model" on gross margin, as a performance factor of trading companies, have been also investigated in this paper (Lukic, 2017). It especially considers the impact of the gross margin on the performance of trade in Serbia and selected countries.

In other words, the subject of the research in this paper is: the effects of gross margin on performance of trade in selected countries, with special insight into Serbia. The aim of analysis is to provide an appropriate basis for more efficient management of gross margin (with enhanced control of the key factors) in order to increase (target) profit of the trade in Serbia, and it reflects scientific and professional contribution of this paper.

The main hypothesis of this study is that adequate control of the size and the structure of the gross margin can have enormous influence on the target profit of trade enterprises. This particularly applies (in structural terms) on efficient management of operating costs, as a component of gross margin in "new business model" application.

Research methodology of the treated problems in this paper is based primarily on a comparative analysis of the implementation of the strategic profit model. To some extent, the statistical analysis has also been used (descriptive statistics and correlation).

For the purposes of this study we have collected empirical data from different comparable sources such as: literature, internet sources (websites of respective agencies, consulting firms, and retailers), and the Business Registers Agency of the Republic of Serbia. To a large extent, we have also used the original annual financial reports of global retailers and retail companies in Serbia.

2. THE SIZE OF GROSS MARGIN IN TRADE OF SELECTED COUNTRIES

Under the influence of numerous factors, the size of the gross margin varies among countries (Goldberg, 2010). Due to this, we are going to carry out a comparative analysis of the size of gross margin in trade of selected countries (USA, European Union, China, Russia), with special emphasis on Serbia.

In the **United States of America** (USA), there is a well-organized official statistics of gross margin per trade sector (wholesale, retail). Based on this data, Table 1 reveals the size of the gross margin in wholesale in the Unit-

ed States for 2015. (Gross margin is expressed as a percentage of sales: gross margin / sales).

***Table 1**: Gross margin in wholesale, the USA 2015*

	Gross margin, (%)
Wholesale	18,3
Durable goods	23,9
Non-durable goods	13,2

Source: U.S. Census Bureau, https://www.census.gov/wholesale/pdf/awts/historic/notices/2015_Summary_of_Changes.pdf. (March 22, 2017)

In the US, gross margin in the wholesale trade in 2015 amounted to 18.3%. It differs in some product categories: durable goods and non-durable goods. It is significantly higher for durable goods (23.9%) than non-durable goods (13.2%), which is in compliance with their nature.

Gross margin in retail is higher compared to wholesale in the United States. This is consistent with the character of their business. Within the retail sector, gross margin differs among certain product categories. The data in Table 2 show this.

***Table 2**: Gross margin of retail sales in the United States, 2015*

	Gross margin, (%)
Total retail	28,7
Motor vehicle and part dealers	18,7
Furniture and home furnishings stores	46,8
Electronics and appliance stores	30,2
Building material and garden equipment and supplies dealers	34,2
Food and beverage stores	27,9
Health and personal care stores	32,1
Gasoline stations	14,6
Clothing and clothing accessorise stores	45,8
Sporting goods, hobby, book, and music stores	41,7
General merchandise stores	27,2
Miscellaneous store retailers	48,0
Non-store retailers	40,1

Source: U.S. Census Bureau https://www2.census.gov/retail/releases/current/arts/gmper.xls (March 22, 2017)

In some product categories gross margin in the United States ranges from 14.6% (Gasoline stations) to 48.0% (Miscellaneous store retailers). The average gross margin of 25 largest food retailers in the United State (US) in 2015 amounted to 23.6% (Benchmark Data for US Food and Grocery Retail Industry - Solvoyo, https://www.solvoyo.com/benchmark-reports-us-retail-0-1) **(March 24, 2017) . Such gross margin in retail is partly a reflection of the level of development and living standards of the US population.**

Gross margin in distributive trade (wholesale, retail trade and motor vehicles) in **Europe** is influenced by many factors and differs across countries. Table 3 is one comparative illustration of gross margin in the food retail in Europe and Turkey.

***Table 3**: Gross margin in food retail in Europe and Turkey, 2011 – 2015*

	Europe, (%)	Turkey, (%)
2011	17,1	18,0
2012	17,5	18,8
2013	17,9	18,4
2014	17,4	18,0
2015	17,8	17,9

Source: Benchmarking Turkish Retail Supermarkets - Solvoyo, https://www.solvoyo.com/benchmark-reports-turkey-retail-0 (**March 24, 2017**)

In Europe, gross margin (%) in food retail is greater than 17% (closer to 18%) and in Turkey than 18%. Gross margin in food retail is lower in Europe (2015 - 17.8%) and Turkey than in the United States (2015 - 27.9%) (US Census Bureau (https://www2.census.gov/retail/releases/current/arts/gmper.xls) (March 22, 2017) and China (2015- 33.9%) of companies, DBS Vickers. According to China Consumer (Retail Grocery), Asian SparX Insights, 25. Nov. 2016. (https://www.dbs.com/.../pdfController.page?...insights...grocer...) (March 17, 2017).

In the **European Union**, due to differences in the nature of business, gross margin rate differs among sectors of distributive trade (wholesale trade, motor vehicles trade and retail trade). Data in Table 4 show this.

***Table 4**: Gross margin rate in distributive trade of the European Union, 2013*

	Gross margin (%)
Distributive trade	12,11
Wholesale	11,03
Motor vehicle trade	14,23
Retail trade	16,82

Note: The calculation performed by the author
Source: Eurostat

As observed by sectors of trade in 2013 in the EU, the largest gross margin was in retail trade. In the same year, it was higher in motor vehicles than in wholesale, which is logical considering the differences in the nature of their business. Gross margin of wholesale trade was lower than in overall distributive trade. Gross margin of distributive trade in European Union (2013 - wholesale of 11.03% and retail 16.82 %%) is lower than in the US (2015 - Wholesale 18.3% and retail trade 28.7%) (US Census Bureau (https://www.census.gov/wholesale/pdf/awts/historic/notices/2015_Summary_of_Changes.pdf.) (March 22, 2017). All in all, the trends shown by the size of the gross margin per sector of trade, is therefore, in accordance with the nature of their business, and the economic performance in the European Union.

Gross margin of the distributive trade is influenced by different factors, and differs in some member countries of the European Union. Data in Table 5 clearly show this.

***Table 5**: Gross margin of distributive trade in the European Union, 2014*

	Gross margin, (%)
European Union (28)	-
European Union (27)	-
Belgium	19,41
Bulgaria	12,00
Czech Republic	13,63
Denmark	25,62
Germany	21,94
Estonia	13,63
Ireland	15,78

	Gross margin, (%)
Greece	24,57
Spain	22,40
France	21,62
Croatia	17,85
Italy	18,09
Cypress	20,00
Latvia	12,15
Lithuania	16,66
Luxemburg	16,19
Hungary	16,25
Malta	-
Netherlands	19,23
Austria	20,49
Poland	11,20
Portugal	16,80
Romania	16,32
Slovenia	13,79
Slovakia	14,58
Finland	20,68
Sweden	21,72
United Kingdom	20,00
Island	-
Norway	20,90
Switzerland	9,70
Ex Yugoslav Republics	-
Turkey	-
Bosnia and Herzegovina	14,20

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Gross margin	28	,00	25,62	17,2357	5,08089
Valid N (listwise)	28				

Note: The calculation performed by the author. Descriptive statistics were calculated by a software program SPSS
Source: Eurostat

In the methodological sense, the gross margin of distributive trade (wholesale, retail trade and repair of motor vehicles) for each member state of the European Union is calculated on the basis of the relationship between gross margin and turnover. In 2014 it ranged from 11.20% (Poland) to 25.62% (Denmark): on average, for the entire EU, it amounted to 17.23%. Gross margin rate in retail trade in the European Union (2013 - 16.82%) (Eurostat) is lower than in the United States (2015 - 28.7%) (US Census Bureau (https://www2.census.gov/retail/releases/current/arts/gmper.xls) (March 22, 2017), China (2015 - 33.9%) (Companies, DBS Vickers. According to the China Consumer (Retail Grocery), Asian Insights Sparx, 25. Nov 2016. (https://www.dbs.com/.../pdfController.page?...insights...grocer...) (March 17, 2017), and Russia (2014 to 26.02%) (*Торговля в России 2015*, Статистический сборник, Федеральная служба государственной статистики (Росстат), Москва, 2015). These differences are partly the consequences of different degrees of implementation of "new business model".

In order to provide more complex analysis of the size of the gross margin in trade (especially retail) per selected countries, Table 6 shows the trends in gross margin of food retailers in **China** for the period 2012 - 2015.

Table 6: *Gross margin rate in food retail, China 2012 -2015*

	2012	2013	2014	2015
Gross profit margin	30,5%	31,2%	33,0%	33,9%
EBIT margin	0,8%	0,1%	1,5%	1,7%
Net profit margin	-0,4%	-1,6%	0,8%	1,1%

Source: Companies, DBS Vickers. According to the China Consumer (Retail Grocery), Asian Insights Sparx, 25.nov 2016 (https://www.dbs.com/.../pdfController.page?...insights...grocer...) (March 17, 2017)

According to the data shown in the table it can be seen that the gross margin in food retailing in China ranges from 30.5% (2012) to 33.9% (2015). On average (for the analyzed period) it is 32.15%. It is thus higher than in the US (2015 - 27.9%) (US Census Bureau (https://www2.census.gov/retail/releases/current/arts/gmper.xls) (March 22, 2017), Europe (2015 to 17.8%) and Turkey (2015 to 17.9%) (Benchmarking Turkish Retail Supermarkets - Solvoyo, https://www.solvoyo.com/benchmark-reports-turkey-retail-0 (March 24, 2017). It covers all operating costs and achieves a certain profit for the purpose of continuous development and growth of food retailers. In China, the participation of operating expenses in gross margin of

food retailers is high. To put it more simply, the effective management (reduction) of operating costs, by applying new concepts of cost management and Japanese business model, food retailers in China can increase profits at the same size of gross margin (Sorescu et al., 2011).

In relation to trade in the United States and the European Union, size and structure of gross margin of trade in **Russia** is specific. Data in Table 7 show this.

***Table** 7: Structure of gross margins of trade in Russia, 2013 and 2014*

	Motor vehicle trade		Retail	
	2013	2014	2013	2014
Gross margin	11,04%	10,40%	26,50%	26,02%
Operating costs	8,52%	8,96%	24,65%	24,12%
Income	2,52%	1,44%	1,85%	1,90%

Note: The calculation performed by the author
Source: *Торговля в России 2015*, Статистический сборник, Федеральная служба государственной статистики (Росстат), Москва, 2015.

Gross margin in retail trade in Russia is lower than in the US, China, but higher than in the European Union. Trade in Russia as well as China, is characterized by a high percentage of operating costs in the gross margin, that is sales revenue, whose reduction, with the same size of the gross margin, and application of new business models will significantly increase profits (Sorescu et al., 2011). In other words, Russia's trade is typical to spend significant funds on improving the so-called "trading culture".

3. GROSS MARGIN SIZE IN RETAIL TRADE BY SECTORS – CATEGORIES OF PRODUCTS

Gross margin rate differs among trade sectors (forms, types), retail stores (mainly formed by product category or commodity group). Because of the importance of sector analysis, Table 8 shows the gross margin per individual product category. (In addition to the indication of gross margin of the retail per sector – product category, provided information could be used as "standard" for the comparative analysis, benchmarking.)

***Table 8**: Gross margin in retail trade, by sector, 2016*

Sector	Gross margin, (%), (4 Quarter)
Clothes retail	18,15
Internet, Mail order & Online shops	31,48
Department retail & Discount retail	29,38
Pharmacy services & Retail drugstore	4,84
Grocery stores	20,04
Home improvements	37,49
Specialty retail	52,66
Technology retail	19,07
Automotive aftermarket	16,37
Wholesale	12,9

Source: SCI market com, http://csimarket.com/Industry/Industry_Profitability.php?s=1300 (March 23, 2017)

The data in the table show that the gross margin per sector in retail ranges from 4.84% (Pharmaceutical Services & Drugstore) to 52.66% (Specialty retail). Generally speaking, the gross margin was lower in wholesale than in retail in all product categories, except for pharmaceutical services and drugstores. This is consistent with the very nature of their business.

In the retail, gross margin varies in individual companies. Table 9 illustrates gross margin of food retailers (grocery stores).

***Table 9:** Gross margin of selected grocery retailers, 2016*

Company	Gross margin (%), (4 Quarter)
Chefs Warehouse, Inc.	26,09
Core-mark Holding Company, Inc.	5,19
Crystal Rock Holdings, Inc.	52,52
Amcon Distributing Co	5,91
Dominos Pizza Inc	30,69
Agrieuro Corp.	57,77
Ingles Markets Inc	24,12
Kroger Co	22,23
Supervalu Inc	13,55
Weis Markets Inc	16,22

Source: SCI market com, http://csimarket.com/Industry/Industry_Profitability.php?s=1300 (March 23, 2017)

Therefore, grocery retailers have different gross margin. For example, in the company Kroger Co. it amounts 22.23%, while in Supervalu Inc 13, 55%. All in all, gross margin differs in individual sectors of trade (wholesale and retail), within one sector per individual product categories and companies. It is influenced by the size of the wholesaler and retailer, competition, location, logistics, the use of "new business model" and other factors.

4. THE DYNAMICS OF THE GROSS MARGIN SIZE OF SELECTED RETAILERS

The dynamics of the gross margin differs amid global retailers, as shown by the data in Table 10. These differences are conditioned by their size, location, type of business (type of stores and product categories), competition, implementation of new business models, the concept of sustainable development, new information and communication technologies, and other factors.

***Table 10**: Dynamics of gross margin of selected retail companies, 2012 – 2016*

	Dec 31, 2016	Dec 31, 2015	Dec 31, 2014	Dec 31, 2013	Dec 31, 2012
Amazon.com Inc.	35,09%	33,04%	29,48%	27,23%	24,75%
Costco Wholesale Corp.	11,35%	11,09%	10,66%	10,62%	10,55%
eBay Inc.	77,65%	79,39%	67,98%	68,62%	70,04%
Home Depot Inc.	34,19%	34,81%	34,75%	34,57%	34,47%
Lowe's Cos. Inc.	34,82%	34,79%	34,59%	34,30%	34,56%
Netflix Inc.	31,72%	32,27%	31,83%	29,52%	27,25%
Target Corp.	29,53%	29,39%	29,53%	29,73%	30,10%
TJX Cos. Inc.	28,79%	28,55%	28,51%	28,43%	27,33%
Wal-Mart Stores Inc.	24,58%	24,29%	24,31%	24,38%	24,50%

Source: Profitability Analysis, https://www.stock-analysis-on.net/NASDAQ/Company/Amazoncom-Inc/Ratios/Profitability#Gross-Profit-Margin (March 24, 2017)

In the reporting period gross margin of the retailer Wal-Mart Stores Inc is constant (slightly higher than 24%). This is not the case with all observed retailers. For example, gross margin at the retailer Costco Wholesale Corp. has moderate increase in the analyzed period. Displayed dynamics in gross margin rate consequently reflected on the performance of analysed retailers.

5. THE CHARACTERISTICS OF SIZE AND STRUCTURE OF THE GROSS MARGIN IN TRADE OF SERBIA

The trade in Serbia is one of the major generators of performance of the overall economy. The data in Table 11 clearly show this.

***Table 11**: The impact of trade on the performance of the overall economy in Serbia, 2015*

	Percent
Share of trade in total revenue of Serbian economy	33,64%
Share of trade in total number of enterprises in Serbian economy	34,41%
Share of trade in total number of employees in Serbian economy	19,70%

Note: The calculation performed by the author
Source: Business Registers Agency of the Republic of Serbia

In 2015, trade participated in total revenues of the Serbian economy with 33.64%, in the total number of enterprises of the Serbian economy with 34.41% and in the total number of employees of the Serbian economy with 19.70%. Therefore, its participation in the creation of added value of the Serbian economy is enormous. For these reasons it is very important to perform complex analysis of factors of size and structure of gross margin in trade in Serbia and compare it with other markets (US, Europe, European Union, China, Russia, Slovenia, Croatia and Bosnia and Herzegovina). On this basis, appropriate measures could be taken to improve the efficiency of managing gross margin and, therefore, the achievement of the target profit of trading enterprises in Serbia. This will have a positive impact on the creation of added value of the total economy in Serbia.

The determinants of the size and structure of the gross margin in Serbia are specific in relation to the other (above analyzed) comparable countries (Lukic, 2011, 2012, 2013a, b, 2014 b, 2015a, b, c, d, e, f; Lukic et al., 2014). Table 12 shows the gross margin rate, operating costs and operating profit of trade in Serbia for the period 2013–2015 (all rates are expressed from sales revenue). Figure 1, for the same observed period, shows the dynamics of gross margin, operating costs and operating profit of trade in Serbia.

***Table 12**: Structure of gross margin (as a percentage of sales revenue) of trade in Serbia, 2013–2015*

	Gross margin, (%)	Operating costs, (%)	Business profit, (%)
2013	20,45	16,43	4,02
2014	17,41	14,74	2,67
2015	17,57	15,08	2,49

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Gross margin, (%)	3	17,41	20,45	18,4767	1,71083
Operating costs, (%)	3	14,74	16,43	15,4167	,89389
Business profit, (%)	3	2,49	4,02	3,0600	,83624
Valid N (listwise)	3				

Note: The calculation performed by the author. Descriptive statistics was performed by using SPSS statistical software.
Source: Business Registers Agency of the Republic of Serbia

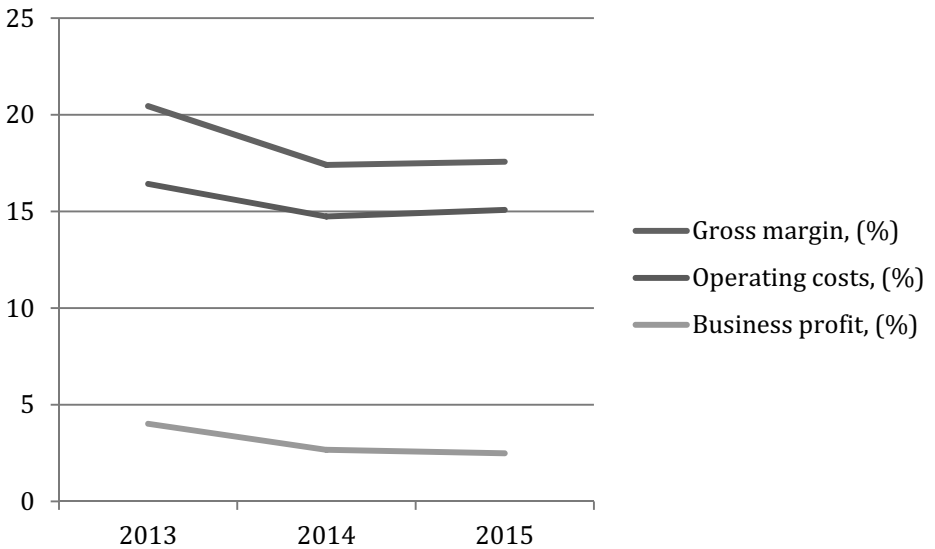

***Figure 1**: The dynamics of gross margin, operating costs and operating profit of trade in Serbia*

Note: Picture of the author
Source: Business Registers Agency of the Republic of Serbia

In Serbian trade (for the period 2013 - 2015) the average margin was 18.47%, the average operating costs amounted to 15.41%, and the average operating profit

amounted to 3.06%. Operating costs (operating expenses) of trade in Serbia were lower than in China and Russia.

In Serbian trade there was positive correlation between the gross margin, on the one hand, and operating costs and business profits, on the other and, likewise, between operating expenses and operating profit (Table 13). However, statistical significance was not met ($p > 0,05$). All this indicates that the gross margin can be a significant factor of profit in trade of Serbia. The target profit of trade in Serbia can be achieved by adequate management of gross margin. The similar could be achieved, with the same gross margin, by more effective management of operating costs. Optimized operating costs and target profit of trade in Serbia can be achieved by the application of "new business model".

***Table 13**: The correlation of gross margin, operating costs and operating profit of trade in Serbia*

Correlations				
		Gross margin	Operating costs	Business profit
Gross margin	Pearson Correlation	1	,990	,988
	Sig. (2-tailed)		,092	,098
	N	3	3	3
Operating costs	Pearson Correlation	,990	1	,956
	Sig. (2-tailed)	,092		,190
	N	3	3	3
Business profit	Pearson Correlation	,988	,956	1
	Sig. (2-tailed)	,098	,190	
	N	3	3	3

Note: The calculation performed by the author. Correlation analysis was performed by using SPSS statistical software.
Source: Business Registers Agency of the Republic of Serbia

In order to provide more complex analysis of gross margin in trade of Serbia, that is more realistic response to the question whether it is higher or lower to the trade of comparable countries, as well as the "standard", Table 14 gives an overview of (comparative analysis) gross margin rate in Serbian trade and selected countries (particularly countries of the region) for 2014.

***Table 14**: Gross margin in Serbian and trade of selected countries, 2014*

	Gross margin, (%)
Denmark	25,62
Germany	21,94
Ireland	15,78
France	21,62
Croatia	17,85
Italy	18,09
Hungary	16,25
Netherlands	19,23
Austria	20,49
Romania	16,32
Slovenia	13,79
United Kingdom	20,00
Bosnia and Herzegovina	14,20
Serbia	17,41

Note: The calculation performed by the author
Source: Eurostat and the Business Registers Agency of the Republic of Serbia

According to the data, gross margin in Serbian trade is lower compared to Denmark, Germany, France, Italy, the Netherlands, Austria, and the United Kingdom, at about the same level as that of the trade in Croatia, and it is higher than the trade in Ireland, Hungary, Romania, Slovenia and Bosnia and Herzegovina. Such size of the gross margin is in line with the macroeconomic performance of the overall economy and the living standards of the population in Serbia. The trade in Serbia is able to cover from it all the costs and achieve a certain profit for the purpose of continuous growth and development.

There is a strong correlation between inventory turnover and gross margin. This is indicated by a number of empirical researches carried out in the retail sector of the developed market economies, and in others (Gaur et al., 2014; Khan et al., 2016). In other words, gross margin is significantly affected by inventory turnover in trade. The relationship between them is reverse – the higher inventory turnover, the lesser gross margin and vice versa. Given that, Table 15 and Figure 2, is in the form of strategic profit model, show the gross margin, inventory turnover coefficient, and gross margin return on inventory in Serbian trade for the period 2013 - 2015.

The strategic profit model indicates the determinants of gross margin return on inventory. It reflects its special character, which in mathematical form goes as follows:

$$\frac{Gross\ margin}{Inventory} = \frac{Gross\ margin}{Sales\ revenue}\ x\ \frac{Sales\ revenue}{Inventory}$$

According to the present strategic profit model, there are two key factors: gross margin return from sales revenue and inventory turnover. Their adequate control may affect the achievement of the targeted gross margin return on inventory.

***Table 15**: The strategic profit model: gross margin return on inventory in trade of Serbia, 2013–2015*

	Gross margin, (%)	Inventory turnover ratio	Gross margin return on inventory, (%)
2013	20,45	6,00	122,70
2014	17,41	6,44	112,12
2015	17,57	5,66	99,44

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Gross margin (%)	3	17,41	20,45	18,4767	1,71083
Inventory turnover ratio	3	5,66	6,44	6,0333	,39107
Gross margin return on inventory, (%)	3	99,44	122,70	111,4200	11,64579
Valid N (listwise)	3				

Note: The calculation performed by the author. Descriptive statistics was performed by using the statistical program SPSS**Source**: Business Registers Agency of the Republic of Serbia

It is, therefore, typical for the trade of Serbia that in the reporting period gross margin return on inventory has been decreasing. It was due to a decrease in gross margin return from sales revenue, as well as inventory turnover.

Correlation analysis carried out (in Table 16) shows positive influence of the gross margin return from sales revenue and moderate effect of inventory turnover ratio on gross margin return on inventory. There is negative influence of inventory turnover speed on gross margin return from sales revenues. However, statistical significance was not met ($p > 0,05$). By increasing the efficiency of inventory investments, gross margin return on inventory can be increased in trade of Serbia.

This can be achieved by applying new business models, modern concept of cost management, information and communication technology, the concept of sustainable development and the Japanese business model.

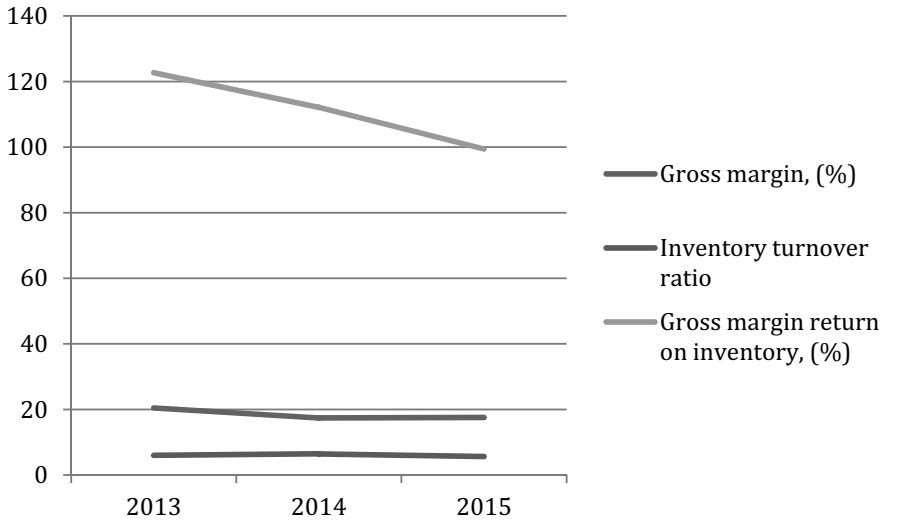

***Figure 2**: The strategic profit model: Gross margin return on inventory*

Note: Picture of the author
Source: Business Registers Agency of the Republic of Serbia

***Table 16**: Correlation analysis of the effectiveness of managing gross margin and inventory in trade of Serbia*

Correlations				
		Gross margin	Inventory turnover ratio	Gross margin return on inventory
Gross margin	Pearson Correlation	1	-,120	,812
	Sig. (2-tailed)		,923	,396
	N	3	3	3
Inventory turnover ratio	Pearson Correlation	-,120	1	,481
	Sig. (2-tailed)	,923		,681
	N	3	3	3
Gross margin return on inventory	Pearson Correlation	,812	,481	1
	Sig. (2-tailed)	,396	,681	
	N	3	3	3

Note: The calculation performed by the author. Correlation analysis was done by using the SPSS statistical software
Source: Business Registers Agency of the Republic of Serbia

In order to provide more complex analysis of the effects of the gross margin management, inventory and business profit it is important to identify business profit return on inventory, in the form of strategic profit model, especially this, because the operating profit is the component of gross margin. Given strategic profit model is mathematically expressed as follows:

$$\frac{Business\ profit}{Inventory} = \frac{Business\ profit}{Sales\ revenue}\ x\ \frac{Sales\ revenue}{Inventory}$$

According to the present strategic profit model, business profit return on inventory is a function of business profits return from sales revenue and inventory turnover. By effective control of the relevant factors, the achievement of targeted business profit return on inventory may be influenced. Table 17 shows the strategic profit model: business profit return on inventory of trade in Serbia for the period 2013 - 2015.

***Table 17**: Strategic Profit Model: Operating profit return on inventory in Serbian trade, 2013 - 2015*

	Business profit, (%)	Inventory turnover ratio	Business profit return on inventory (%)
2013	4,02	6,00	24,12
2014	2,67	6,44	17,19
2015	2,49	5,66	14,09

Note: The calculation performed by the author
Source: Business Registers Agency of the Republic of Serbia

The trade of Serbia is typical of reduction of the business profit return on inventory in the reporting period. This is caused by alternating reduction of operating profit return on sales revenue and inventory turnover ratio. Thus, by increasing inventory turnover ratio it can be, among other things, influenced on the achievement of targeted operating profit return on inventory in Serbian trade. This can be achieved by using the Japanese business inventory philosophy *Just-in-Time* and radio frequency identification.

In order to provide deeper insight into the character of gross margin for the achievement of targeted performance we will provide an analysis of the gross margin of selected trading companies in Serbia. Table 18 presents the relevant indicators of the efficiency of managing gross margin, inventory and operating profit of selected retailers in Serbia in 2015.

***Table 18**: Gross margin of selected retailers in Serbia, 2015*

	Gross margin, (%)	Business profit, (%)	Inventory turnover ratio	Gross margin return on inventory (%)	Business profit return on inventory (%)
Mercator-S	12,27	1,43	8,14	99,87	11,64
Delhaize Serbia	22,31	4,54	9,79	218,41	44,44
Nelt Co.	7,91	2,82	13,51	106,86	38,09
Knez Petrol	4,62	1,08	58,19	269,41	62,84
OMV Srbija	11,95	3,20	28,62	342,00	91,58

Note: The calculation performed by the author
Source: Business Registers Agency of the Republic of Serbia

Based on the data presented in the table, we can conclude that the gross margin of retailers in Serbia is lower compared to many other global particularly food retailers. For example, in 2015 the gross margin of Delhaize Serbia amounted to 22.31% and 24.29% WalMart. This is in line with the macroeconomic performance of the overall economy and the living standards of the citizens in Serbia (which is significantly lower in comparison to countries with developed market economy). In Serbia, the gross margin is higher among food retailers (Mercator-S and Delhaize Serbia) than fuel and oil derivatives (Knez Petrol and OMV Serbia). The inventory turnover ratio is higher for fuel and oil products than food retailers. In this respect, the situation is the same for distribution services retailers, logistics (Nelt Co.), which is in tune with the nature of their business. All in all, type of goods determines the size and structure of gross margin to a large extent, because their turnover speed is different. By matching the size of gross margins and inventory turnover target profit (of analyzed) retailers in Serbia can be achieved, with maximum customer satisfaction.

6. CONCLUSION

The research in this paper has shown that the gross margin is very significant factor in the performance of trade enterprises in all countries, including Serbia. In terms of the size of the gross margin it should be as such that it can cover all operational costs and make some profit. The size of the gross margin is determined by many factors, such as the size of the wholesaler and retailer, the type of trade (wholesale, retail), the type of store, location, competition, product categories, application of new business models etc.

Under the influence of these and other factors, the gross margin of trading companies differs among countries. Thus, for example, the gross margin of trade in Serbia is lower than in the US, Europe, the leading countries of the European Union, Russia, China, on the same level as in Croatia, and higher compared to trade in Slovenia and Bosnia and Herzegovina. Regarding the international position of trade in Serbia in terms of the size of the gross margin, in order to increase profit is necessary to make some reduction in operating costs that are covered by it. This can be achieved, with the greater application of new business models, information and communication technology, the concept of sustainable development (green economy, green logistics, renewable energy sources), new concepts of cost management (costing at basic activities, by managing the value of the trade company, target costs, customer relationship management, etc.) and Japanese concepts of operations.

REFERENCES

Benchmark Data for US Food and Grocery Retail Industry - Solvoyo, https://www.solvoyo.com/benchmark-reports-us-retail-0-1) (March 24, 2017).

Benchmarking Turkish Retail Supermarkets - Solvoyo, https://www.solvoyo.com/benchmark-reports-turkey-retail-0 (**March 24, 2017**)

Berman, B. and Evans, J. R. (2013). *Retail Management.* Upper Saddle River, New Jersey: Pearson Prentice Hall.

China Consumer (Grocery Retail), Asian Insights SparX, 25.Nov 2016. (https://www.dbs.com/.../pdfController.page?...insights...grocer...) (March 17, 2017).

Dragansaka, M., Klapper, D. and Vilas-Boas, S. B. (2007). Determinants of Margins in the Distribution Channel: An Empirical Investigation. *Working Paper* No. 1959, Stanford Graduate School of Business, 1-42.

D'Arcy, P., Norman, D. and Shan, S. (2012). Costs and Margins in the Retail Supply Chain. *Bulletin*, June Quarter, 13-22.

Gaur, V., Kesavan, S, and Raman, A. (2014). Retail inventory. *California Management Review*, 56(2), 55-76.

Goldber, L. S. and Campa, J. M. (2010). The Sensitivity of the CPI to Exchange Rates: Distribution Margins, Imported Inputs, and Trade Exposure. *The Review of Economics and Statistics*, 92 (2), 392-407.

Khan, J. A., Deng, S. and Khan, M.H.A.K. (2016). An Empirical Analysis of Inventory Turnover Performance Within a Local Chinese Supermarket. *European Journal of Scientific Research*, 12 (34), 145-157.

Končar, J. and Leković, S. (2016a). The Role of Retail Strategy in the Development and Efficiency of Business on the Global Electronic Market. *Strategic Management*, 21(4), 22-28.

Končar, J., Leković, S. and Vukmirović, G. (2016b). The assortiment structure and price levels as a factor of marketing channel competitiveness – empirical evidence from the Republic of Serbia. *Ekonomski Vjesnik*, 29, Special Issue: SI, 21-22.

Kuman, V., Anand, V. and Song, H. (2017). Future of Retailer Profitability: An Organizing Framework. *Journal of Retailing*, 93 (1)96–119.

Levy, M., College, B. and Weitz, B. A. (2014). *Retailing Management*. New York: NY McGraw-Hill Education.

Lovreta, S., Končar, J. and Stankovic, LJ. D. (2016). Effects of Increasing the Power of Retail Chains on Competitive Position of Producers. *Acta Polytechnica Hungarica*, (13(4), 121-140.

Lukic, R. (2011). *Evaluacija poslovnih performansi u maloprodaji*. Beograd: Ekonomski fakultet.

Lukic, R. (2012). Sustainable Development of Retail in Serbia. *Review of International Comparative Management*, 13 (4), 574-586.

Lukic, R. (2013a). *Računovodstvo trgovinskih preduzeća*. Beograd: Ekonomski fakultet.

Lukic, R. (2013b). The Influence of Working Assets Efficiency Management on the Profitability of Trade in Serbia. *Review of International Comparative Management*, 14 (5), 731-745.

Lukic, R. (2014a). The economic and financial status of trade entrepreneurs in Serbia. *Ecnomic and Environmental Studies*, 14 (3), 239 -264.

Lukic, R. (2014b). The profitability of trade in Serbia. *Asian Journal of Management Research*, 4 (3), 485-500.

Lukic, R. (20014c). The Analysis of the Efficiency of Trade Costs Management in Serbia, *Economia. Seria Management*, 17(2), 195-209.

Lukic, R. (2015a). The Analysis of Profit per Employee in the Trade of Serbia. *Economia. Seria Management*, 18(1), 1-16.

Likić, R. (2015b). Analiza faktora koji utječu na kreiranje dodatne vrijednosti kao pokazatelj učinkovotosti poslovanja trgovine u Srbiji, *Ekonomska misao i praksa*, 1, 99-125.

Lukic, R. (2015c). The Analysis of Efficiency of Managing Inventories in Trade in Serbia. *Review of International Comparative Management*, 16(2), 222-238.

Lukic, R. (2015d). The Impact of Financial Leverage on Performance of Trade in Serbia. *Business Excellence and Management*, 5(3), 5-21.

Lukic, R. (2015e). The impact of firm size on the performance of trade in Serbia. *Economic and Environmental Studies*, 15(4), 379 – 395.

Lukic, R. (2015f). The capital structure determinants in trade of Serbia. *Business Excellence and Management*, 5(4), 37-49.

Lukic, R., Vojteski-Kljenak, D. and Jovancevic D. (2014). Food waste management. *Management Research and Practice*, 6(4), 23-39.

Lukic, R. and Vojteski Kljenak, D. (2017). Analysis of Intangible Assets in Retail Trade, *Strategic Management*, 22 (2), 18-26.

Manser, M.E. (2005). Productivity measures for retail trade: data and issues. *Monthly Labour Review, July, 30-38.*

Measuring up Retail Benchmarking Survey, pwc; www.pwc.com/ca/retail (March, 21, 2017).

Nowakowski, M. and Karasiewicz, G. (2016). Market Structure and Price-Cost Margins in European Retail Gasoline Industry. *Journal of Management and Business Administration. Central Europe,* 24(2), 105-124.

O'Riordan, D. (1993). Retail Gross Margins, Some international Comparisons. *International Journal of Retail & Distribution Management*, 21(4), 33-39.

Potjes, J. C.A. and Thurik, A. R. (1993). Profit margins in Japanese retailing. *Japan and the World Economy*, 5, 337-362.

Profitability Analysis, https://www.stock-analysis-on.net/NASDAQ/Company/Amazon-com-Inc/Ratios/Profitability#Gross-Profit-Margin (March 24, 2017)

SCI market com, http://csimarket.com/Industry/Industry_Profitability.php?s=1300 (March 23, 2017).

Sorescu, A., Frambach, R.T., Singh, J., Rangaswamy, A. and Bridges, C. (2011). Innovations in Retail Business Models. *Journal of Retailing*, 87, Supplement 1, S3-S16.

Trninic, J., Durcovic, J., & Rakovic, L. (2011). Business Intelligence As Support to Knowledge Management. *Perspectives of Innovations, Economics and Business*, 8(2), 35-40.

Торговля в России 2015, Статистический сборник, Федеральная служба государственной статистики (Росстат), Москва, 2015.

U.S. Census Bureau, https://www.census.gov/wholesale/pdf/awts/historic/notices/2015_Summary_of_Changes.pdf. (March 22, 2017).

U.S. Census Bureau https://www2.census.gov/retail/releases/current/arts/gmper.xls (March 22, 2017)

Rezime

Kao što je poznato, jedan od najvažnijih oblika zarade u trgovinskim preduzećima je bruto marža. Po svojoj veličini ona treba da je tolika da se iz nje mogu pokruti operativni troškovi (troškovi poslovanja) i ostvariti izvestan profit za potrebe daljeg razvoja i rasta trgovinskog preduzeća. Ona spada u „kritične faktore poslovnog uspeha" u trgovinskim preduzećima. U ovom radu, imajući u vidu značaj, na bazi komparativne analize istražen je uticaj bruto marže na performanse trgovinskih preduzeća po selektivnim zemaljama (SAD,

Evropska unija, Rusija, Kina, Slovenija, Hrvatska i Bosna i Hercegovina), sa posebnim osvrtom na Srbiju. Pritom je zaključeno da je bruto marža trgovine u Srbiji na nižem nivou u odnosu na mnoge Zapadne zemlje, Rusiju, i Kinu. Ona je na približno istom nivou kao u Hrvatskoj, ali je veća u odnosu na Sloveniju i Bosnu i Hercegovinu. Pri datom nivou bruto marže povećanje profita može se ostvariti prvenstveno smanjenjem operativnih troškova primenom „novih poslovnih modela" u trgovini Srbije.

Ključne reči: bruto marža, operativni troškovi, profit, determinante, upravljenje

Paper received: 25. IX 2017.
Paper reviewed: 10. X 2017.
Paper accepted: 31. X 2017.