SCIENTIFIC REVIEW

THE IMPACT OF DEPRECIATION EXPENSE ON PERFORMANCE OF TRADE IN SERBIA

Radojko Lukic[27], **Azra Hanic**[28], **Aida Hanic**[29]

ABSTRACT

Large retail chains conduct intensive replacement of old technology with new, more efficient one, especially in the field of energy, and in accordance with the application of the concept of sustainable development in business. These changes affect depreciation expenses and profits. Due to this, in this paper we will primarily research the dynamics of depreciation expenses and their impact on profit in sales of US, Japan, European Union, Russia, with special insight into Serbia based on original collected data. In order to thoroughly process given issues, numerous cases from practice were analyzed – depreciation of retail companies from different countries, especially the developed market economies. Presented methodological approach (comparative analysis, *ratio analysis*, descriptive statistics, correlation analysis, case studies) and research results(especially to point out the significance of continuous complex analysis of all relevant angles) should serve as a basis for more efficient management of depreciation expenses in modern trade.

KEY WORDS: Capital Expenditures, Depreciation And Amortization, Technical Equipment Of Work, Profit

JEL:F65,L81,M40

UDC: 330.142.211.2:339.13(497.11)

338.58

COBISS.SR-ID 227955724

[27]Corresponding Author, Faculty of Economics, University of Belgrade, Serbia,e-mail: rlukic@ekof.bg.ac.rs
[28] Belgrade Banking Academy, Belgrade, Serbia
[29] Belgrade Banking Academy, Belgrade, Serbia

INTRODUCTION

In order to improve cost efficiency in trade, particularly in retail, new business, information and communication technology is being increasingly applied, as well as principles of energy efficiency in existing and new business premises and stores. In addition to that, technical equipment of work and the quality of customers' service is on the higher level, what is, beside applied concepts and methods of calculation, reflected on size of depreciation expenses as a component of total operating costs and thus profit of retail chains. Keeping all this in mind, this paper empirically investigates factors which affect the dynamics of depreciation expenses of global retail chains in different countries, with special insight into Serbia. This should serve as a basis for more efficient management of depreciation expenses in order to increase profits in the trade.

The subject of this paper is to analyze the efficiency of the management of depreciation expenses in modern trade companies. The aim of the research is to treat issues thoroughly: theoretical-methodologically and empirically especially by analysing cases from domestic and international retail practice. The purpose is to develop a valid basis (theoretical-methodological and empirical) for more efficient management of depreciation expenses in modern retail chains, especially in Serbia, as for the future research of this trendy issue.

Vast literature was written in this field. But nevertheless, all issues are not yet resolved, especially practical ones. While writing this article we mainly relied on contemporary literature dealing with the problems of depreciation with special reference to trade (Berman, 2010; Levy, 2007; Lukic, 2011; Lukic, 2015a,b) and particularly published in prestigious international journals (Cole, 2015; Cornile, 2011; Crosby, 2012; Görzig, 2007; Hirschey, 2012; Lennhoff, 2014, Lukic, 2012; Lukic, 2014; Lukic, 2015a,b; Lukic, 2016; Shin, 2014), and studies (Asian Retail Sector - DBS; Cost Segregation Analysis; Deloitte: International Financial Reporting Standards - Considerations for the Retail Industry, Retail Operations - Six success factors for a tough market). All relevant information from these and other literature were used as a theoretical-methodological and empirical basis for such complex analysis of the problems treated in this paper.

The issue that is the subject of research in this paper is current. Due to this, the basic fundamental research hypothesis is: efficient management of depreciation expenses affects profit increase of retail chains. This was particularly indicated by "expenses segregation studies." Under conditions of intensive replacement of existing equipment with more efficient, in terms of energy savings and better service for customers, it is very significant to manage the expenses of depreciation in retail chains. All of this reflects positively on profits, as a primary business objective, all together with the maximum satisfaction of customers' needs.

Research methodology is adapted to the issue, object, purpose and hypothesis tested in this study. It is based on research in history, literature, depreciation accounting aspects, comparative analysis and statistical analysis. Methodological research limitation is reflected in the fact that because, in certain cases, "frequent" changes of regulations and methods of calculation, data on depreciation are not fully "comparable" in individual retail companies from different countries. But, it does not substantially diminish the validity of empirical research results obtained in this work.

We primarily used original empirical data collected from a variety of comparable sources to research the issue. These are: literature, studies, agency reports, statistical yearbooks, and annual financial statements of retail companies. All are largely "processed" in accordance with a defined research hypothesis and character of the analyzed problems in this paper.

THEORETICAL-METHODOLOGICAL BASIS FOR ANALYSIS OF DEPRECIATION EXPENSES IN TRADE

Depreciation expenses have an impact on overall operating costs, profits and tax liabilities in trade. Tax liabilities may be reduced with the application of the concepts and methods of calculating depreciation, i.e. accelerated depreciation. Also, with the implementation - cost segregation studies – on one part (20% - 30%) and by shortening the lifetime duration (from 39 to 5, 7 or 15 years) of physical assets in retail can be (at a given tax rate, for example, 40% or 35%) significant savings can be achieved (in depreciation expenses and tax liabilities) (Quoted from: cost Segregation Analysis; http://www.costsegadvisor.com/Cost_Segregation/CSA_Documents/CostSegAdvisor_Presentation%28main%29.pdf) (May 22, 2016).

In order to practically illustrate the application of cost segregation studies in trade we assume the following: $ 1,000,000 value of the property, additional depreciation of cost segregation studies 30%, and the tax rate is 40%. In this case, the annual tax savings are $ 120.00 [$ 300,000 ($ 1,000,00 x 0.30) x 0.40]. This has favourable impact on overall performance in trade.

THE SHARE OF DEPRECIATION IN GROSS DOMESTIC PRODUCT IN TRADE

The share of depreciation (fixed assets costs) in gross domestic product in trade is very significant. Table 1 shows the percentage share of depreciation in gross domestic product (at current prices) in trade of selected countries.

Table 1: The share of depreciation in gross domestic product in trade of selected countries (current prices), (%)

	2010	2011	2012	2013	2014
Austria	2.74	2.72	2.83	2.86	2.90
France	4.73	4.74	4.75	4.71	4.74
Germany	4.73	4.67	4.87	4.90	4.89
Hungary	8.02	7.80	8.17	7.64	7.37
Italia	6.03	5.97	6.10	5.98	5.72
Slovenia	9.78	9.33	9.29	8.55	7.82
United Kingdom	4.07	4.17	4.21	4.17	-
Australia	4.58	4.29	4.20	4.18	4.17
Serbia*	5.59	4.32	4.97	4.13	-

*Note: * author's calculations*

Source: OECD, Statistical Yearbook of the Republic of Serbia

The data in the table show significant differences in the percentage share of depreciation in gross domestic product in trade. So, for example, in 2014 the percentage share of depreciation in gross domestic product of trade in Slovenia amounted to 7.82%, and in Austria 2.90%. These differences are primarily caused by a number of economic factors, such as: use of productive technology, market structure, the different methodology of calculating depreciation and other (Görzig, 2007).

Considering the trade in Serbia, it is similar to France, Germany, the United Kingdom, and Australia in terms of percentage of depreciation (gross operating surplus) in gross domestic product (volume of sales). It should be borne in mind that methodologies for calculating depreciation in trade of individual countries differ. However, it does not significantly affect the percentage share of depreciation in gross domestic product of trade

in Serbia and in other countries. In order to provide full information on the expenses of depreciation in trade of Serbia, we should bear the following fact in mind: in 2013 the gross operating surplus (depreciation) participated in value added at factor costs with 44.87% (author's calculations: Structural business statistics, Statistical Yearbook of the Republic of Serbia 2015, the Republic Institute for statistics, Belgrade). All this indicates that the depreciation is significant factor of the performance in trade of Serbia. In other words, it can be improved by efficient management of depreciation expenses.

DEPRECIATION EXPENSES OF RETAIL IN THE US

In order to gain a better idea about the depreciation expenses of trade in individual countries, Table 2 shows the percentage share of depreciation expenses in net sales of retail trade corporations in the United States.

Table 2: Depreciation expenses of retail trade corporations in the US, % of net sales

	Total retail Total assets $50 million and more					Food and beverage stores Total assets $50 million and more				
	4Q 2014	1Q 2015	2Q 2015	3Q 2015	4Q 2015	4Q 2014	1Q 2015	2Q 2015	3Q 2015	4Q 2015
Depreciation, expenditures, and amortization of real estate, plants and equipment, % net sales	1.86	2.08	1.98	2.05	1.95	2.10	2.22	2.10	2.09	2.08

Source: U.S. Census Bureau, https://www.census.gov/econ/qfr/ (March 21, 2016)

In the US, the depreciation expenses in retail range between 1.86 to 2.8% of net sales, and between 1.08 to 2.20% in food and beverage retail. It is much lower compared to Russia. It is believed that one of the reasons for this is that in Russia considerably more attention is paid to the "quality" of customer service, in terms of available retail space (sales area) and the like.

As is known, the depreciation is one of the important sources of capital expenditure funding. Table 3 shows capital expenditure ratio and depreciation in retail for individual product categories in the United States.

Table 3: Ratio of capital expenditure and depreciation in retail sales by sector in the United States, January 2016

	Number of firms	Capital expenditures/Depreciation	Net capital expenditures/Sales
Auto	26	395.75%	3.20%
Construction materials	5	86.39%	0.96%
Distributers	83	507.22%	7.43%
General	19	427.89%	2.74%
Grocery and food	17	227.64%	1.82%
Online	39	621.71%	6.44%
Special lines	124	564.37%	4.97%

Source: Capital Expenditures - NYU Stern School of Business
(http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/capex.html (May 22, 2016)

As can be seen from the data presented in the table, depreciation is one of the important sources of funding of capital expenditures in US retail. The type of retail determines the amount of capital expenditure. In the US retail they range in percentage of sales from 0.96% (construction materials) to 6.44% (online).

What should be strongly stressed is that depreciation belongs to the major sources of financing of capital expenditures throughout the food chain, especially in retail and food restaurants. Data on the food chain in the United States presented in Table 4 show this.

Table 4: Capital expenditures and depreciation ratio of food chain in the United States, January 2016

Food chain	Number of firms	Capital expenditures/Depreciation	Net capital expenditures/Sales
Farming/Agriculture	37	1838.45%	5.43%
Food processing	89	1130.52%	10.00%
Food wholesale	14	1477.47%	1.75
Retail (grocery and food)	17	227.64%	1.82%
Restaurant/Dining	83	216.51%	4.19%

Source: Capital Expenditures - NYU Stern School of Business (

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/capex.html (May 22, 2016)

In order to provide better insight into the nature and size of the depreciation in food retail, according to research presented by Food Marketing Institute (FMI), Table 5 shows the percentage share of the cost of goods sold, operating expenses, depreciation and amortization in net food sale.

Table 5: The size and structure of operating costs in food retail, 2008, % of net sales

Total net company's sales	100.0
Costs of the goods sold	70.7
Gross margin	*29.3*
Total wages	11.2
Employees benefits	3.6
Real estate leasing	1.8
Depreciation & Amortisation	1.4
Services	1.4
Material	1.0
Maintaining and repairs	0.7
Tax and licences	0.4
Insurance	0.3
Other operating costs	4.3
Total operating costs	*26.3*

Source: FMI, The Food Retailing Industry Speaks, of 2008.

According to the data presented in the table, depreciation and amortization therefore participate in net sales of foods with 1.4%, on average. All in all, profit increase may be, to a certain extent, affected by efficient management of depreciation expenses in food retail.

DEPRECIATION EXPENSES OF TRADE IN RUSSIA

Depreciation expenses of fixed assets in Russia in 2014 participated in the total expenditures in motor vehicles trade and repair with 4.6%, wholesale trade, except motor vehicles and repair with 12.6%, retail trade, except motor vehicles and repair with 4.7% and food 4.4% (Table 6). The share of amortization of intangible assets in total expenditure is

negligible in all aspects of trade in Russia, as it is the case in other countries. As a defining characteristic in Russia, the share of depreciation expenses of fixed assets in return from sales is significant. So, for example, in 2014 depreciation expenses of fixed assets participated in sales in retail trade with 4.6% (author's calculations: Торговля в России 2015).

Table 6: The share of depreciation in total expenditures of trade in Russia, 2005 - 2014 (%)

	2005	2012	2013	2014
Motor vehicle and repair trade				
Fixed assets depreciation	3.8	4.1	3.9	4.6
Amortisation of non-material assets	0.0	3.5	0.1	0.1
Wholesale, except motor vehicle and repair trade				
Depreciation of fixed assets	13.5	12.4	12.5	12.6
Amortisation of non-material assets	0.1	0.1	0.1	0.1
Retail, except motor vehicle and repair trade				
Fixed assets depreciation	4.2	3.9	4.3	4.7
Amortisation of non-material assets	0.1	0.3	0.3	0.5
Food				
Fixed assets depreciation	3.1	2.9	3.3	4.6
Amortisation of non-material assets	0.1	0.0	0.1	0.4

Source: Федеральная служба государственной статистики Российский статистический ежегодник – 2015

COSTS OF DEPRECIATION OF TRADE IN SERBIA

As is well known, trade has a significant impact on the performance of the Serbian economy, as it is the case in other countries. So, for example, in 2014 it participated in the total number of companies with 35.10%, the total number of employees with 19.46%, total assets – business premises with 17.29%, and the total income with 33.49% (author's calculations: Annual financial statements Bulletin 2014 Belgrade, July 2015).

As in (national) economy, so as in trade of Serbia, depreciation expenses are significant component of operating costs and determinant of added value. So, for example, in 2013 the gross operating surplus (depreciation) was involved in the value added of Serbian economy with 42.84% and total trade with 44,87%, in wholesale and retail trade and motor vehicles repair 32.88% , wholesale trade, except motor vehicles with 49,52% and in retail except motor vehicles with 35,65% (author's calculations : Statistical Yearbook of the Republic of Serbia in 2015, Statistical office of the Republic of Serbia, Belgrade).

In order to provide a clear perception of the technical equipment of trade in Serbia, Table 7 presents some indicators of efficiency of fixed assets usage (fixed assets) for the period 2010 - 2014.

Table 7: Indicators of fixed assets efficiency usage in trade of Serbia, 2010 – 2014

	Revenue, million dinars	Number of employees	Fixed assets, million dinars	Fixed assets turnover ratio*	Fixed assets per employee, thousand dinars*	Fixed assets, % from revenue*	Net profit, million dinars	Net profit per employee, thousand dinars*
2010	2.495.934	197.677	735.981	3,39	3.723	29.48	80.709	400
2011	2.704.315	200.801	752.829	3,59	3.749	27.83	91.822	457
2012	2.979.785	193.954	788.404	3,77	4.064	26.45	93.687	483
2013	2.987.680	193.201	790.448	3,77	4.091	26.52	89.730	464
2014	2.995.521	185.976	782.430	3,82	4.207	26.11	86.955	467

*Note: *author's calculations*

Source: Business Registers Agency

The data in the table clearly show that the technical equipment of labour of trade in Serbia (measured by fixed assets per employee) has steadily increased in observed period. It amounted 3,966,800 dinars on average (Table 8). However, it is on significantly lower level compared to the trade of some member countries of the European Union, as well as in relation to other comparable countries of developed market economy. So, for example, in 2013 the gross fixed assets per employee in trade was: Austria € 115, France € 58, Germany 65 € Italy € 91, Slovenia € 117, Serbia and the 35 € (calculation performed by the author based on the data: OECD and Eurostat). This had negative impact on labour productivity and overall performance of trade in Serbia, because investment in business capacity was insufficient, especially in modern business technology.

Table 8:Descriptive Statistics - indicators of fixed assets efficiency usage in trade of Serbia

	N	Minimum	Maximum	Mean	Std. Deviation
Revenue	5	2495934,00	2995521,00	2832647,0000	224754,03701
Number of employees	5	185976,00	200801,00	194321,8000	5574,07496
Fixed assets	5	735981,00	790448,00	770018,4000	24307,74943
Fixed assets turnover ratio	5	3,39	3,82	3,6680	,17838
Fixed assets per employee	5	3723,00	4207,00	3966,8000	217,62629
Fixed assets, % from revenue	5	,00	29,48	21,9880	12,36185
Net profit	5	80709,00	93687,00	88580,6000	5062,30622
Net profit per employee	5	400,00	483,00	454,2000	31,76004
Valid N (listwise)	5				

Note: author's calculations

Source: Business Registers Agency

The data in Table 9 show significant impact of technical equipment on profitability of trade in Serbia, measured by the net profit per employee (Table 9).

Table 9:Correlations – indicators of fixed assets efficiency usage in Serbia

		Revenue	Number of employees	Fixed assets	Fixed assets turnover ratio	Fixed assets per employee	Fixed assets, % from revenue	Net profit	Net profit per employee
Revenue	Pearson Correlation	1	-,708	,987**	,993**	,934*	-,462	,637	,901*
	Sig. (2-tailed)		,181	,002	,001	,020	,433	,248	,037
	N	5	5	5	5	5	5	5	5
Number of employees	Pearson Correlation	-,708	1	-,662	-,719	-,909*	,115	,044	-,413
	Sig. (2-tailed)	,181		,223	,171	,033	,854	,944	,490
	N	5	5	5	5	5	5	5	5
Fixed assets	Pearson Correlation	,987**	-,662	1	,960**	,914*	-,512	,629	,870
	Sig. (2-tailed)	,002	,223		,010	,030	,377	,256	,055
	N	5	5	5	5	5	5	5	5
Fixed assets turnover ratio	Pearson Correlation	,993**	-,719	,960**	1	,926*	-,419	,644	,915*
	Sig. (2-tailed)	,001	,171	,010		,024	,483	,241	,029
	N	5	5	5	5	5	5	5	5
Fixed assets per employee	Pearson Correlation	,934*	-,909*	,914*	,926*	1	-,342	,332	,712
	Sig. (2-tailed)	,020	,033	,030	,024		,573	,586	,177
	N	5	5	5	5	5	5	5	5
Fixed assets, % from revenue	Pearson Correlation	-,462	,115	-,512	-,419	-,342	1	-,614	-,590
	Sig. (2-tailed)	,433	,854	,377	,483	,573		,270	,295
	N	5	5	5	5	5	5	5	5
Net profit	Pearson Correlation	,637	,044	,629	,644	,332	-,614	1	,891*
	Sig. (2-tailed)	,248	,944	,256	,241	,586	,270		,042
	N	5	5	5	5	5	5	5	5
Net profit per employee	Pearson Correlation	,901*	-,413	,870	,915*	,712	-,590	,891*	1
	Sig. (2-tailed)	,037	,490	,055	,029	,177	,295	,042	
	N	5	5	5	5	5	5	5	5

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Note: author's calculations

Source: Business Registers Agency

In favour of this there are data on share of depreciation expenses in sales. Table 10 shows the percentage share of depreciation expenses in revenue of trade in Serbia for 2013 and 2014.

Table 10: Share of depreciation expenses in revenue of trade in Serbia, 2013 and 2014 (%) 2013 and 2014

	2013	2014
Business revenue, in thousand dinars	2.891.518.965	2.889.536.354
Depreciation expenses, in thousand dinars	29.314.236	30.558.465
Depreciation expenses, % from business revenue*	*1.01*	*1.05*

*Note: *author's calculations*
Source: Business Registers Agency

Based on the given data in the table it can be concluded that the depreciation expenses participate in business revenues of trade in Serbia with slightly more than 1%. It is, however, lower than trade in many other countries with developed market economies (e.g. USA) and, in particular, Russia. In other words, technical equipment of labour in trade of Serbia is very low. It is necessary to invest more in expansion and modernization of retail space in the future, as well in implementation of new technologies in business. This will definitely have a positive impact on the market, economic, business and financial performance of trade in Serbia.

In order to give detailed consideration on the efficiency of managing depreciation expenses in trade of Serbia we will analyze the depreciation expenses of selected retail companies with the highest percentage share in total revenues in trade of Serbia.

Table 11. shows the percentage share of depreciation expenses in the total revenues of the five largest retail chains in Serbia for the period 2010 - 2014.

Table 11: Depreciation expenses of selected retailers in Serbia, 2010 – 2014

	2010	2011	2012	2013	2014
Delhaize Serbia					
Revenues, million dinars	76.411	68.444	103.221	101.624	74943
Depreciation, million dinars	1.018	2.305	3.154	2.765	
Depreciation, % from revenues*	*1.33*	*3.36*	*3.05*	*2.72*	
Mercator-S					
Revenues, million dinars	47.183	53.003	59.562	63.393	72.554
Depreciation, million dinars	1.367	1.545	1.485	1.429	
Depreciation, % from revenues*	*2.89*	*2.91*	*2.49*	*2.25*	
IDEA					
Revenues, million dinars	40.168	48.435	52.613	55.300	52.169
Depreciation, million dinars	540	794	920	973	
Depreciation, % from revenues*	*1.34*	*1.63*	*1.74*	*1.75*	
Knez Petrol					
Revenues, milliondinars	18.821	31.283	40.378	37.602	39.203
Depreciation, million dinars	31	40	55	56	
Depreciation, % from revenues*	*0.16*	*0.12*	*0.13*	*0.14*	
Veletabak					
Revenues, milliondinars	21.153	21.931	24.754	28.383	37.837
Depreciation, million dinars	31	40	55	56	
Depreciation, % from revenues*	*0.14*	*0.18*	*0.22*	*0.19*	

*Note: *author's calculations*
Source: Business Registers Agency

Depreciation expenses (expressed as a percent of sales) differ in individual observed retail companies in Serbia. These differences are the result of applying different policies and methods of depreciation of fixed assets, and ownership structure (net fixed assets or leasing). In relation to the company Wal-Mart situation is as follows: percentage share of depreciation expenses in total sales at Delhaize Serbia and IDEA is slightly less, in company Mercator-S is higher, and in companies Knez Petrol and Veletabak is considerably lower than at Wal-Mart. Depreciation expenses of food retailers in Serbia (Delhaize Serbia, IDEA and Mercator-S) are lower than in the US, especially in Russia. The reason is, among other things, significantly lower investments in the modernization and expansion of office space, and the application of new technologies in business retailers in Serbia than in the United States and Russia. All in all, the retail trade in Serbia has lower technical equipment of work, especially regarding the use of modern technology, in relation to the countries of developed market economy. This reflects negatively on the overall market, economic, business and financial performance of retail in Serbia. In the future it is

necessary to invest more in the development of business capacities and the implementation of new business technology in retail trade in Serbia. The effect of this is to improve customer satisfaction and overall economic efficiency.

CASE STUDY - AN ANALYSIS OF THE DEPRECIATION EXPENSES OF SELECTIVE GLOBAL RETAILERS

In order to make comprehensive view of impact of depreciation expenses on performance of retail companies in Serbia we will analyze depreciation expenses of selected global retailers. Depreciation expenses, influenced by many factors, primarily technical equipment of operations, differ among individual retail chains. So, for example, they participate in the net sales of the company Home Depot with a little more than 2% (2.1 2.4% -) (Table 12).

Table 12: Depreciation and amortization expenses in Home Depot, 2011 – 2015

	2011	2012	2013	2014	2015
Net sales	$70,395	$74,754	$78,812	$83,176	$88,519
Depreciation and amortization	$1,682	$1,684	$1,757	$1,786	$1,863
Depreciation and amortization, % from net sales*	2.4	2.2	2.2	2.1	2.1

*Note: *author's calculations*
Source: http://www.homedepotar.com/ (May 22, 2016)

Table 13. shows the dynamics of depreciation flow in Wal-Mart Stores, for the period 2011-2020.

Table 13: Depreciation and amortization expenses in Wal-Mart Stores, 2011-2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Revenue, million dollar, *% growth*	421.849,0	446.509,0 *5.8*	468.651,0 *5.0*	476.294,0 *1.6*	468.651,0 *2.0*	503.055,7 *3.6*	521.084,2 *3.6*	539.758,8 *3.6*	559.102,7 *3.6*	573.080,2 *2.5*
Depreciation, expenditure and amortization, million dollar, *% from revenue*	7.641,0 *1.8*	8.106,0 *1.8*	8.478,0 *1.8*	8.870,0 *1.9*	9.173,0 *1.9*	9.501,7 *1.9*	9.842,3 *1.9*	10.195,0 *1.9*	10.560,4 *1.9*	10.824,4 *1.9*

Note: The data presented for the period 2016-2020 are designed.
Source: Annual Report (https://www.tagnifi.com/model-vs-market-wal-mart-stores/ (May 22, 2016)

The data in the table show that at Wal-Mart Stores depreciation expenses participate in total revenues with slightly less than 2% (1.8-1.9%).

The company Costco Wholesale Corp. is a significant competitor in the market for many retailers. With regard to this, we will analyze its depreciation and amortization expenses. Table 14. presents the depreciation and amortization expenses of company Costco Wholesale Corp.

Table 14: Depreciation and amortization expenses of the company Costco Wholesale Corp., 2011 - 2015 (fiscal year is July-August. All values are in US $, millions)

	2011	2012	2013	2014	2015
Sales/revenues	88.92B	99.14B	105.16B	112.64B	116.2B
Depreciation and amortization expenses	855M	908M	946M	1.03B	1.13B
Depreciation and amortization expenses, % from sales/revenues*	*0.96*	*0.91*	*0.89*	*0.91*	*0.97*

*Note: *author's calculations*

Source: Annual Financials for Costco Wholesale Corp. (http://www.marketwatch.com/investing/Stock/COST/financials?CountryCode=US)(May 22, 2016)

The data in the table show that the depreciation and amortization expenses of the company Costco Wholesale Corp. expressed as a percentage of sales (0.89 - 0.97%) were significantly lower than with comparable competitors, such as Wal-Mart ((1.8-1.9%).

Due to the importance, especially from the perspective of comparison with its competitors (Wal-Mart, Costco, and Target), we will analyze depreciation and amortization expenses of the company Target Corp. Table 15. presents the depreciation and amortization expenses of the company Target Corp. for the period 2012 - 2016.

Table 15: Depreciation and amortization expenses of the company Target Corp., 2012 - 2016 (fiscal year is February-January. All values are in US $ millions)

	2012	2013	2014	2015	2016
Sales/revenues	69.87B	73.3B	71.28B	72.62B	73.79B
Depreciation and amortization expenses	2.13B	2.14B	2B	2.13B	2.21B
Depreciation and amortization expenses, % from sales/revenues*	*3.04*	*2.91*	*2.80*	*2.29*	*2.99*

*Note: *author's calculations*
Source: Annual Financials for Target Corp. (http://www.marketwatch.com/investing/stock/TGT/financials) (May 22, 2016)

Depreciation and amortization expenses in the company Target Corp., expressed as a percentage of sales (which ranged from 2.29 to 3.04%), were higher than that of Wal-Mart (1.8-1.9%) and Costco (0.89 to 0, 97%).

Company Whole Foods Market Inc. is highly recognized on the retail market, especially for the sale of organic food in recent times. Therefore, we will analyze its amortization and depreciation expenses. Table 16 presents depreciation and amortization expenses of the company Whole Foods Market Inc. for the period 2011 - 2015.

Table 16: Depreciation and amortization expenses of the company Whole Foods Market Inc., 2011 - 2015 (fiscal year is October-November. All figures are in US $ millions)

	2011	2012	2013	2014	2015
Sales/revenues	10.11B	11.7B	12.92B	14.19B	15.39B
Depreciation and amortization expenses	287.11M	311.55M	339M	377M	439M
Depreciation and amortization expenses, % from sales/revenues*	*2.83*	*2.66*	*2.62*	*2.65*	*2.85*

*Note: *author's calculations*
Source: Annual Financials for Whole Foods Market Inc. (http://www.marketwatch.com/investing/Stock/WFM/financials?CountryCode=US) (May 22, 2016)

Depreciation and amortization expenses of the company Whole Foods Market Inc. are higher than the companies Wal-Mart and Costco Wholesale Corp. This can be partly explained as a result of a larger modernization of retail space and the application of modern technologies in business.

Table 17. presents capital expenditures and depreciation of Japanese company Fast Retailing.

Table 17: Capital expenditures and depreciation, Fast Retailing Company, 2011-2015

	FY2011	FY2012	FY2013	FY2014	FY2015
JGAAP Million yen					
Net sales	820,349	928,669	1,143,003	1,382,907	
Capital expenditures	33,993	40,184	36,681	58,343	
Depreciation and amortization	18,755	18,573	23,691	30,828	N.A.
Goodwill amortization	6,596	5,664	5,297	5,960	
Depreciation and amortization expenses, % from net sales*	2.28	1.99	2.07	2.22	N.A.
IFRS Million yen					
Revenue	N.A.	N.A.	1,142,971	1,382,935	1,681,781
Capital expenditures	N.A.	N.A.	39,681	58,813	62,461
Depreciation and amortization	N.A	N.A.	23,607	30,808	37,758
Depreciation and amortization expenses, % from net sales*	N.A.	N.A.	2.06	2.22	2.24

*Note: *author's calculations*
Source: Annual Report (http://www.fastretailing.com/eng/ir/financial/investment.html) (May 22, 2016)

In Japanese company Fast Retailing capital expenditures record growth in observed recent years, and are depreciated over 50%. Depreciation sales rate range between 1.99% - 2.28% (JGAAP), 2.06% - 2.24% (IFRS) respectively. It is, therefore, lower than the company's Wal-Mart.

By nature, depreciation expenses in electronic trade should be lower than in the rest of the trade with a fixed location. This will be illustrated by the example of one company. So, for example, the leading Chinese company JD.com Inc., which specializes in online retail sales, according to the data presented in Table 18, depreciation and amortization as a percentage of sales amounted to 0.42% - 1.75%.

Table 18: Depreciation and amortization expenses in the company JD.com Inc., 2013 – 2016

FY December	2013A	2014A	2015F	2016F
Turnover (RMB m)	69,340	115,002	181,785	267,736
Depreciation and amortization (RMB m)	293	2,022	2,194	2,366
% depreciation and amortization from sales*	*0.42*	*1.75*	*1.20*	*0.88*

*Note: *author's calculations*
Source: Company, DBS Vickers. According to the Asian Retail Sector - DBS (https: //www.dbs.com.sg/.../pdfController.page? ...)(May 22, 2016)

The company Tesco Corp. is one of the major competitors of the company Wal-Mart. Their financial indicators are almost always compared. To other retailers they serve as "standards". Due to this, Table 19 shows retailer's Tesco depreciation expenses for the period 2011 - 2015.

Table 19: Depreciation expenses of company Tesco Corp., 2011 - 2015 (fiscal year is January-December. All values are in US $ millions)

	2011	2012	2013	2014	2015
Sales/revenues	512.97M	530.6M	525.25m	542.99M	279.7M
Depreciation and amortization expenses	38.46M	44.49M	40.78M	42.01M	38.1M
Depreciation and amortization expenses, % from sales/revenues*	*7.49*	*8.38*	*7.76*	*7.73*	*13.62*

*Note: *author's calculations*

Source: Annual Financials for Tesco Corp. (http://www.marketwatch.com/investing/stock/teso/financials) (May 22, 2016)

The company Tesco has significantly higher depreciation and amortization expenses expressed as a percentage of sales (7.49 to 13.62%) than retailer Wal-Mart (1.8 to 1.9%). In other words, they fall into significant sources of financing fixed assets, in particular the application of new technologies in business operations of the company Tesco.

Regarding that Delhaize Group ADR operates in Serbia, bearing in mind the primary goal of the research in this paper – depreciation expenses of trade in Serbia, we will analyze its depreciation and amortization expenses at the global level. Table 20 presents the depreciation and amortization expenses of Delhaize Group ADR for the period 2011 - 2015.

Table 20: Depreciation and amortization expenses of Delhaize Group ADR., 2011 - 2015 (fiscal year is January-December. All amounts are in EUR millions)

	2011	2012	2013	2014	2015
Sales/revenues	21.11B	20.99B	20.59B	21.26B	24.4B
Depreciation and amortization expenses	586M	602M	567M	581M	666M
Depreciation and amortization expenses, % from sales/revenues*	*2.77*	*2.86*	*2.75*	*2.73*	*2.72*

*Note: *author's calculations*
Source: Annual Financials for Delhaize Group ADR (http://www.marketwatch.com/investing/Stock/DEG/financials?CountryCode=US)(May 22, 2016)

From the data presented in the table it can be seen that the depreciation and amortization expenses expressed as a percentage of sales at Delhaize Group ADR (2.72 to 2.86%) are higher than that of Wal-Mart's (1.8 to 1.9%), or are lower in comparison to Tesco (7.49 to 13.62%). In other words, compared to Tesco, they are weaker source of funding for implementation of new technology in business. Depreciation expenses observed in recent years in Delhaize Serbia and Mercator-S are at the level of comparable companies in foreign countries. In other analyzed companies (IDEA, Knez Petrol and Veletabak) are significantly below the level of similar companies in foreign countries.

CONCLUSION

Depreciation expenses are significant factor of total operating expenses size, and profits of retail companies. They differ in trade due to individual aspects, types of stores, product categories and countries. Depreciation expenses are significantly higher in Russian trade compared to the United States. This is explained by the desire to do meet consumer needs better. Depreciation expenses of the company Tesco are significantly higher than in Wal-Mart. Depreciation expenses are higher in conventional trade with a fixed location than in e-commerce.

This raises a key question: Why do these differences in depreciation expenses exist?

These differences are considered to be caused by a number of economic factors, such as the use of productive technology, market structure, disunited methodology of calculation of depreciation and other (Görzig, 2007). Application: A study of segregation costs is reflected on depreciation expenses and taxes. It has an impact on reducing tax liabilities. Its application in trade contributes to increasing profits.

As depreciation expenses in trade of Serbia are concerned, generally speaking, they are at a lower level compared to countries with developed market economy. This means that technical equipment of labour, labour productivity, and application of modern technology in business are at the lower level. In addition, it reflects the quality of servicing customers and overall performance. In the future it is necessary to invest significantly more in new modern sales capacities, logistics, information and communication technology, and in other forms of physical assets in trade of Serbia. This applies particularly to the development of eco-business and retail buildings (shops), transport and equipment. The net effect of this is to increase profits to the maximum satisfaction of consumer needs.

REFERENCES

[1] Asian Retail Sector - DBS. (Available at:) https://www.dbs.com.sg/.../pdfController.page?... (May 22, 2016)

[2] Berman, B.and Evans, J. R. (2010). Retail Management. Boston: Prentice Hall.

[3] Cole, C.J., Jones, C.L. (2015). The Quality of Management Forecasts of Capital Expenditures and Store Openings in MD&A. Journal of Accounting, Auditing & Finance, 30(2), 127-149.

[4] [Cornile, D., Langohr, J. (2011). The distributive trade sector and its impact on euro area prices. ECB Monthly Bulletin, 35-52.

[5] Cost Segregation Analysis. (Available at:) http://www.costsegadvisor.com/Cost_Segregation/CSA_Documents/CostSegAdvisor_Presentation%28main%29.pdf (May 22, 2016)

[6] Crosby, N., Devaney, S., Law, V. (2012). Rental depreciation an capital expenditure in the UK commercial real estate market, 1993-2009, Journal of Property Research, 29(3), 227-246.

[7] Deloitte: International Financial Reporting Standards – Considerations for the Retail Industry,(2008). (Available at:) http://www.iasplus.com/en/binary/dttpubs/0811ifrsretail.pdf (May 22, 2016)

[8] Федеральная служба государственной статистики Российский статистический ежегодник - 2015 г.

[9] Godišnji bilten finansijskih izveštaja 2014, Agencija za privredne registre, Beograd, Jul 2015.

[10] Görzig, B. (2007). Depreciation in EU Member States: Empirical and Methodological Differences. EU KLEMS Working Paper Series No 17, 1-29 . (Available at:) http://www.euklems.net/pub/no17.pdf (May 22, 2016)

[11] Hirschey, M., Skiba, H., Wintoki, M. B. (2012). The Size, Concentration and Evolution of Corporate R&D Spending is U.S. Firms from 10976 to 2010: Evidence and Implications. Journal of Corporate Finance, 18, 496-518.

[12] Lennhoff, D.C. (2014). Valuation of Big-Box Retail for Assessment Purposes: Right Answer to the Wrong Question. Real Estate Issues, 39(3),21-32.

[13] Levy, M., Weitz, B. A. (2007). Retailing Management. Boston: McGraw-Hill, Irwin.

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

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

[16] Lukic, R. (2014). The Analysis of the Efficiency of Trade Costs Management in Serbia, Economia Seria Management, 17(2), 1-15.

[17] Lukic, R. (2015a).The Analysis of Profit per Employee in the Trade of Serbia. Economia. Seria Management, 18(1), 5-16 .

[18] Lukic, R. (2015b). Računovodstvo trgovinskih preduzeća. Beograd: Ekonomski fakultet.

[19] Lukic, R. (2016). Energy efficiency in the food retail. Business Excellence and Management, 6(1), 16-35 .

[20] Retail Operations – Six success factors for a tough market, (2013).Ernst & Young LLP, 1-16.

[21] Российский статистический ежегодник - 2015 г. Федеральная служба государственной статистики.

[22] Shin, S. and Eksioglu, B. (2014). Effects Of RFID Technology On Efficiency And Profitability In Retail Supply Chains. The Journal of Applied Business Research, 30 (3), 633-646.

[23] Statistički godišnjak Republike Srbije 2015, Republički zavod za statistiku, Beograd

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

Article history:

- **Received 25 October 2016**
- **Accepted 8 December 2016**