

The Analysis of the Efficiency of Capital Investments in Trade of Serbia

Radojko LUKIC¹

Abstract

The capital investments are significant factor of efficiency of trading companies business. The aim of this work is to empirically research the efficiency of capital expenditure in fixed assets of trading companies, with detailed insight into Serbia. All the relevant methods of research are applied, above all comparative and statistical analysis. The results of the research show that the efficiency of fixed capital expenditure of trading companies in Serbia are significantly lower compared to countries with developed market economy and EU. It is the result of unfavourable business conditions and low purchasing power of citizens. The main contribution of this work is to indicate the need of undertaking relevant measures by managers of trading companies so as to improve efficiency of capital expenditures in fixed assets, as important determinant of overall performance. These measures are primarily related to stronger implementation of modern technology, faster development of electronic trade, research, development and innovation.

Keywords: Fixed capital expenditures, efficiency, global, European Union, Serbia

JEL classification: F65, L81, M40

1. Introduction

This work analyses measures and factors of efficiency of fixed capital expenditures in trade companies on the global level, with special insight into Serbia. The capital expenditure in fixed assets is very significant determinant of performance of companies in all business sectors, including trade. Their size varies and is determined by nature of business sector. The average depreciation to sales within business sectors is as follows: communication 16,0%, media 10,7%, pharmacy industry 8,7%, automobile industry 6,1%, aviation 5,8%, utilities 5,7%, high-tech 5,5%, automobile supplier 5,1%, chemicals 5,0%, transportation 4,8%, engineering 4,6%, steel 4,4%, consumer goods 3,4%, retail 1,9% (Pulling the Capex Lever, 2010, A.T, Kearney). The average capital expenditure to sales within business sectors is as follows: communication 13,3%, media 8,6%, pharmacy

¹ **Radojko LUKIC** Faculty of Economics, University of Belgrade, Serbia,
E-mail: rlukic@ekof.bg.ac.rs

industry 6,1%, automobile industry 9,0%, aviation 8,2%, utilities 12,9%, high-tech 12,9%, automobile supplier 5,3%, chemical industry 5,3%, transportation 8,7%, engineering 6,8%, steel 6,7%, consumer goods 4,5% and retail 3,7% (Pulling the Capex Lever, 2010, A.T, Kearney). According to the shown data the lowest share is in retail. It is in accordance with its business nature: substantial part of total assets relates to turnover assets. Nevertheless, capital expenditure in fixed assets, as well in intangible assets (capital expenditures for research and development) are – concerning their impact on performance – very significant in retail (Puah, 2012; Li, 2014).

The capital expenditure is key instrument of strategic management of trading companies (Retail Operations – Six success factors for a tough market, 2013). Capital quality, operative efficiency, management level and capacity cost control is evaluated on the basis of them (Li, 2014). Beside physical assets (buildings, plants, equipment) capital investments of trade in Serbia, also include current assets. Inclusion of current assets is done because the substantial part relates to current assets, i.e., regarding the nature of their business they are very significant investment in retail chains inventory. Consequently, for measuring the efficiency of capital investment in trade in this paper we use ratio of fixed assets and profit, ratio of fixed assets turnover (net fixed assets to sales) and current assets turnover ratio (Li, 2014).

The *aim* of this work is to thoroughly explore the efficiency of capital expenditures in fixed assets of trade in Serbia in period after new economic crisis (2008). For that purpose we compare it with the countries of developed market economy (United States of America, Canada) and European Union. Such approach to research gives basis for proposing relevant measures for improvement of the efficiency of fixed capital investments of trade in Serbia in the future.

The *main contribution* of this work is that it should, based on official empirical data, realize what the conditions of the efficiency of capital expenditure in fixed assets of trade in Serbia is, as an important prerequisite for proposing relevant measures for its improvement in the future. Concerning the trade sector in Serbia – the results of the research are unsatisfactory, and the necessity emerges for managers of trading companies in Serbia to take relevant measures so as to improve the efficiency of capital expenditure, both in fixed and turnover assets.

Vast *literature* is devoted to the analysis of the efficiency of fixed capital investments in trade due to its economic significance (Berman, 2010; Cornile, 2011; Evans, 2005; Katua, 2014; Levy, 2007; Lovreta, 2011; Lukic, 2011, 2012, 2013a,b, 2014a,b,c,d; Mandal, 2008; Radović, 2014; Lukic, 2015). Also, there are important publications concerning this topic (Deloitte, Eurostat, Statistic Office of the Republic of Serbia). On contrary, there are no fully written papers in Serbia which analyse the issue of the efficiency of fixed capital investments in trade, so this gap should be filled with this paper.

The *main hypothesis* of the research in this work is that the capital expenditure in fixed assets is very significant factor of efficiency of turnover assets, work productivity and profitability of trading companies. The second hypothesis is that the fixed capital investments in development of online trade are more and more significant factor of retail chain business total efficiency. The third

research hypothesis relates to the trade of Serbia concerning the necessity of undertaking relevant measures as a function of improving efficiency of fixed capital expenditures and decrease of the gap in relation to the countries of developed marked economies, and European Union. All tested hypotheses are proved.

The *research methodology* of the given hypotheses is adjusted to the nature of analysed issues. Primarily it is comparative analysis, ratio financial analysis and statistical methods.

The *limitations* of this work is that the data for expressing efficiency of capital investments in fixed assets are measured and calculated differently in selected countries, in spite of the process of their harmonisation. That decreases the possibility of international comparison of the efficiency of fixed capital expenditure in all business sectors, including trade.

The main sources of used *empirical data* for research of the issue in this work are, beside literature and publications, annual financial reports of trading companies, official statistics of United States of America, Canada, European Union (Eurostat), Serbia (Statistical yearbook of the Republic of Serbia) and websites. The primary data are processed in concordance with the aim of the issue of this paper.

2. Capital investments in fixed assets of trade of the European Union

Fixed capital investments are very important for the improvement of the efficiency of trade business in European Union. Statistically observed, they participated in 2012 in total fixed capital investments on the level of European Union (EU) with 4,64% (author's calculation – Eurostat). Capital investments in fixed assets of trade (wholesale and retail, motor vehicle service) differ in selected member countries. Table 1 shows the fixed capital investments in trade of the European Union for 2008-2012.

Table 1. Capital investments in fixed assets of trade in selected countries of the European Union, 2008-2012 (in millions euros)

	2008	2009	2010	2011	2012
European Union (EU – 28)	-	-	-	-	123,500,6
Germany	15,423,1	16,246,5	16,751,6	20,184,4	20,913,1
France		14,352,0	16,328,9	17,891,0	17,656,0
Croatia	1,380,3	1,031,6	786,5	687,5	534,8
Italy	18,646,6	15,423,7	31,769,6	13,951,5	12,915,8
Netherlands	6,901,2	4,992,1	4,462,9	5,851,6	5,069,5
Slovenia	1,042,7	620,7	598,7	547,3	465,0
Sweden	3,203,0	2,518,3	2,582,5	3,072,7	3,098,3
United Kingdom	21,954,6	16,260,1	16,926,7	19,525,2	21,079,9

Source: Eurostat

According to the data, major capital investments in fixed assets of trade in the European Union are in Germany, France, Italy and United Kingdom, and in 2012 they participated as follows: 16,26% Germany, 13,82% France, 9,76% Italy and United Kingdom with 17,07% (author's calculation – Eurostat). Capital investments in fixed assets of trade in Croatia and Slovenia are significantly lower compared to other observed countries, and decreased from year to year. In 2012 capital investments in fixed assets of trade in Croatia were higher compared to Slovenia for 15,01% (author's calculation – Eurostat).

The significant indicator of efficiency of fixed capital investments is also investment rate, expressed as a relation of investments and added value at factor costs. Table 2 and Figure 1 show the investment rate (investments/added value at factor costs) in trade of selected countries of the European Union for the period 2008-2012.

Table 2. Investment rate (investments/added value at factor costs) in trade of selected countries of the European Union for the period 2008-2012, in million euros

	2008	2009	2010	2011	2012
European Union (EU – 28)					10,7
Germany	7,1	6,2	7,0	7,8	8,4
France		9,0	9,7	10,2	10,3
Croatia	26,3	23,1	19,2	17,2	14,8
Italy	16,4	14,7	23,6	11,0	11,2
Netherlands	10,5	8,0	6,5	8,3	7,3
Slovenia	26,5	20,4	17,6	15,0	14,5
Sweden	10,6	8,8	7,6	8,3	8,2
United Kingdom	11,7	10,2	9,9	11,1	12,7

Source: Eurostat

The data in the given table show that the investment rate, as the indicator of the efficiency of fixed capital investments in the trade of the European Union decreased from year to year in the observed period in almost all countries. It is, beside other things, due to economic crisis. In 2012, in countries adjacent to Serbia, investment rate in trade was the highest in Croatia (14,8%) and Slovenia (14,5%). In United Kingdom (12,7%) and Italy (11,2%) was above, and in Germany (8,4%), France (10,3%), Netherlands (7,3%) and Sweden (8,25) below the average of the European Union (10,7%).

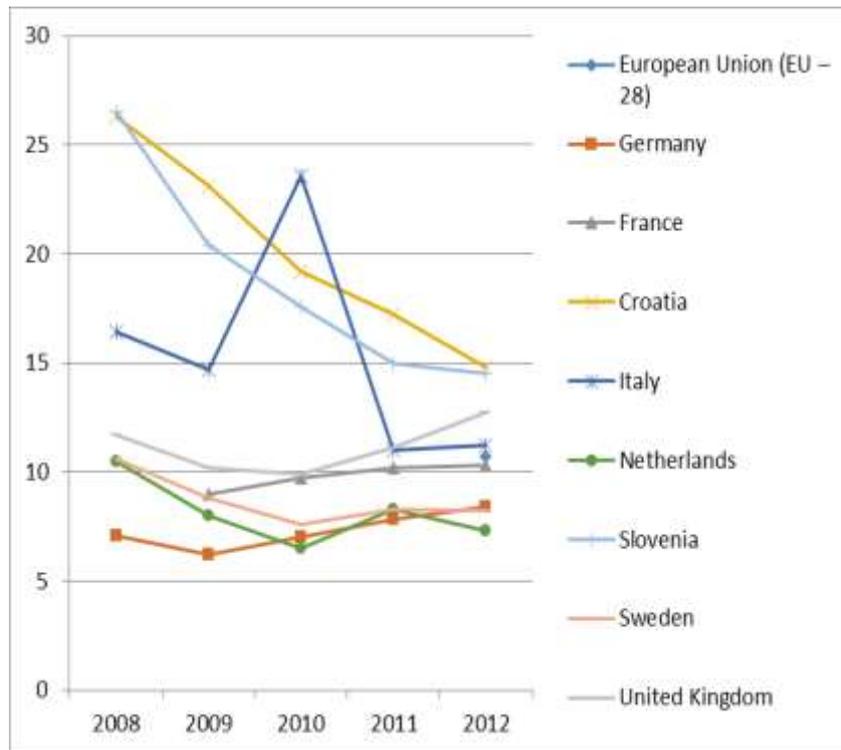


Figure 1. Investment rate (investments/added value at factor costs) of trade of selected countries of the European Union for the period 2008-2012 in million euros

Note: Author's Figure

Source: Table 2

3. Capital investments in fixed assets of trade in United States of America

In United States of America there are differences concerning the size of capital investments in selected economy sectors. So, for example, in total capital investments in United States of America in 2013 selected sectors participated as follows: agriculture, construction, extraction of oil/gas with 2,69%, production of non-durable products with 50,37%, durable products production with 24,95%, information technology 6,70%, financial and professional service with 6,61%, trade and transport with 8,64% (author's calculation – 2014 US Investment Monitor – Ernst & Young). The role of distributional sector is not negligible.

There are noticeable differences concerning the size of capital investments in fixed assets in trade of selected countries in the European Union. Concerning this issue there is also differences between European Union and United States of America. Table 3 shows the capital expenditure (in absolute amount) per trade sector (wholesale and retail) in United States of America in the period 2008-2011.

Table 3. Capital expenditure in fixed assets per trade sector (wholesale and retail) in United States of America for the period 2008-2011 (millions dollars)

	2008	2009	2010	2011	Percent of change 2010-2011
Total capital expenditures (total economy)	1,294,491	1,015,322	1,036,153	1,152,206	11,2
Wholesale	32,370	25,252	31,075	35,471	14,1
Retail	73,234	58,428	65,252	67,449	3,4

Source: 2013 Capital Spending Report – Census. Gov

In 2011 in United States of America fixed capital investments in trade (wholesale and retail) participated in total capital expenditure (total economy) with 8,93%, i.e. wholesale 3,08% and retail 5,85%. The share is larger than in European Union (2012 – 4,64%). The same year, in total capital investments in trade, wholesale participated with 34,46% and retail with 65,54% (author's calculation – 2013 Capital Spending Report – Census. Gov).

The fixed assets investments in trade differ in specific lines of business (category of product). Table 4 show the fixed assets investments in trade per categories of products in United States of America for the 2006-2010 period.

Table 4. Fixed assets investments in trade per categories of products in United States of America, 2006-2010

	Assets expenditure, (millions dollar)	Assets expenditure/ Sales, (%)
Construction, special trade	\$27,9	2,3%
Wholesale, durable goods	\$28,1	1,3%
Wholesale, nondurable goods	\$71,7	1,0%
General merchandise stores	921,2	3,3%
Food stores	\$290,4	2,9%
Auto dealers and gas stations	\$100,1	2,4%
Apparel and accessory stores	\$101,0	3,8%
Home furniture and equipment stores	\$117,8	2,3%
Eating and drinking places	\$112,1	7,3%
Miscellaneous retail	\$101,8	2,2%

Source: Hirschey, 2012

As the data show, in the United States of America the fixed assets investments are very significant in apparel, general merchandising stores and, especially, restaurants. It is specific that in the USA investments in research and development (R&D) grow faster than investments in propaganda and fixed assets (Hirschey, 2012). It can be said deliberately that it is the case with other countries.

In the form of ratio analysis Table 5 show the recent capital expenditure in trade per types and categories of products in the United States of America.

Table 5. Recent capital expenditure in fixed assets per types and categories of products in the United States of America – ratio analysis

Date updated: 5. January 2015.				
	Capital expenditures (million dollar)	Capital expenditures /Amortization	Net capital expenditures /Sales	Net Capital expenditures/ EBIT (1-t)
Food wholesalers	\$863,19	NA	1,81%	87,31%
Oil/gas distribution	\$59,999,77	378,34%	13,84%	214,10%
Retail (automotive)	\$2,898,85	489,67%	3,87%	130,11%
Retail (building supply)	\$2,474,10	78,40%	-0,35%	-5,63%
Retail (distribution)	\$7,864,35	490,36%	8,04%	133,71%
Retail (general)	\$21,029,87	405,90%	1,88%	64,80%
Retail (grocery and food)	\$5,484,95	246,58%	2,95%	228,91%
Retail (online)	\$5,771,85	549,58%	7,68%	266,84%
Retail (special line)	\$14,399,73	516,06%	3,00%	77,79%
Total	\$1,007,450,21	233,80%	6,21%	77,06%

Source: Capital expenditure by Sector (US) – NYU Stern
(http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/capex.html; accessed 23/3/2015 am)

The data in the table show the tendency of significant increase of assets expenditures for development of electronic trade.

4. Capital expenditures in fixed assets of trade in Canada

Table 6 shows the fixed assets capital expenditures in wholesale and retail Canada for the period 2010-2014 (million dollars).

Table 6. Capital investments in fixed assets in wholesale and retail trade in Canada, 2010-2014 (million dollars)

	2010	2011	2012	2013	2014
Total economy	346,876,6	365,208,7	392,706,6	398,768,4	404,524,3
Wholesale	5,324,8	4,984,4	5,659,0	5,948,6	6,370,5
Retail	8,301,5	8,194,7	9,572,0	10,211,0	9,115,0

Source: Statistics Canada, CANSIM, table 029-0005 and Catalogue no. 61-205-XIB. Last modified: 2014-02-26

As the data show, capital investments in fixed assets in wholesale and retail trade in Canada show the tendency of recent growth. In total capital investments in fixed assets on the level of total economy in 2014, trade participated with 3,87%, i.e. wholesale with 1,57%, retail with 2,25% respectively (author's

calculation - Statistics Canada, CANSIM, table 029-0005 and Catalogue no. 61-205-XIB. Last modified: 2014-02-26). Therefore, it is lower compared to European Union and, especially United States of America. It is quite understandable concerning the fact that trade in the USA sets aside considerable amount for application of modern technology and development of electronic trade (Shin, 2014). The Walmart company is known in application of RFID technology. The effects are faster inventory turnover, smaller cost per employee, greater efficiency of sale etc., which positively affects overall performance.

5. Capital investments in fixed assets of selected global retailers

In order to thoroughly analyse the treated issue in this work, further research will show the dynamics of capital investment in fixed assets of selected global retail chains. Table 7 and Figure 2 show the capital expenditures of Walmart company for fiscal period 2011-2015.

Table 7. Capital expenditures of Walmart company for fiscal year, 2011-2015

	2011	2012	2013	2014	2015
Sale, (billions USD)	421,85	446,95	469,16	476,29	385,65
Capital expenditures (fixed assets), (billions USD)	12,7	13,5	12,9	13,12	12,17
Capital expenditures (fixed assets)/ Sale, (%)*	3,01	3,02	2,74	2,75	2,50
Sale/ Capital expenditures (fixed assets)*	35,08	34,30	39,08	36,61	32,08

*Note: *Author's calculation*

Source: <http://www.marketwatch.com/investing/stock/wmt/financials/cash-flow> (accessed 23/3/2015 am)

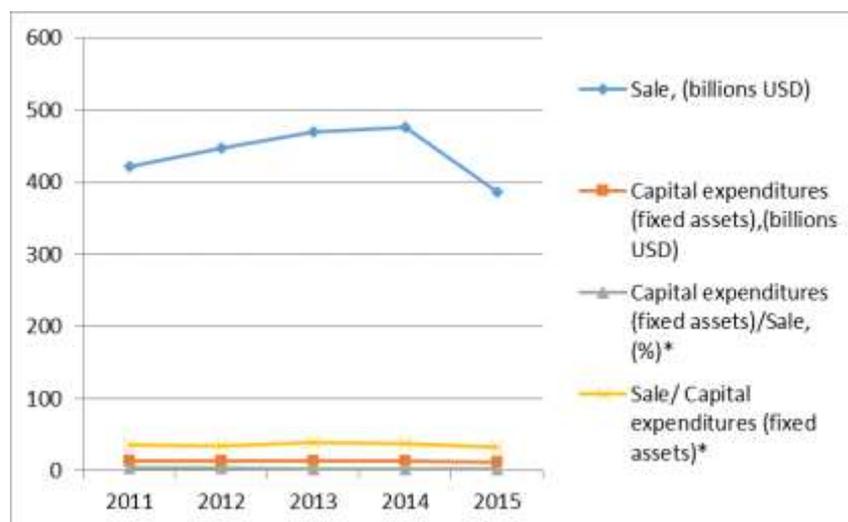


Figure 2. Capital expenditures of Walmart company for fiscal year, 2011-2015

Note: Author's Figure

Source: Table 7

The data in the table show that the capital expenditures in Walmart company are 5% lower and that they decreased recently. The efficiency of the capital expenditures in Walmart company increased and decreased over time. It was higher than in Tesco company. Recently, Walmart company invests in development of electronic trade, as it is the characteristics of modern retail. So, for example, from total capital expenditures (\$13,1 billion) in 2014, \$12,7 billion related to physical, and \$0,4 billion on e-commerce. It is expected that capital expenditure in e-commerce in (October) 2015 will amount \$1,0 billion. It is planned that the capital expenditure in e-commerce in 2016 amount \$1,2-1,6 billion (according to: <http://news.walmart.com/news-archive/2014/10/15/walmart-will-accelerate-investments-in-e-commerce-and-moderate-global-square-footage-growth>; accessed 23/3/2015 am).

In order to clearly envisage the position of Walmart company regarding capital investments in fixed assets we will, based on recent data, show their percent share in sale of selected companies, their major opponents. The percent share of capital investments in fixed assets in February 2015 was as follows: Target Corporation – 4,8%, Dollar Tree Inc. – 4,2%, Dollar General Corporation – 3,1%, Family Dollar Stores Inc – 4,2%, Wal Mart Stores Inc. – 2,8%, Costco Wholesale Corporation – 1,8%, Carrefour – 2,9%, Metro AG – 1,4%, Kroger – 2,4%, Whole Foods Market – 5,0% and Safeway – 2,1% (according to: http://marketrealist.com/analysis/stock-analysis/consumer/clothing/charts/?featured_post=257734&featured_chart=257749; Feb 18, 2015 9:16 am). Capital investments in fixed assets of observed companies are highest in Whole Foods Market, and the smallest in Metro AG. Based on the data, we can conclude that the Walmart company is on the average level among all observed companies concerning the capital investments in fixed assets.

Table 8 and Figure 3 show the capital expenditure of Tesco company, regarding the fact that it is one of the most important global competitor of Walmart company.

Table 8. Capital expenditure of Tesco company in fiscal year, 2009-2013

	2009	2010	2011	2012	2013
Sale (million USD)	356,48	378,67	512,97	530,60	525,25
Capital expenditure (fixed assets), (million USD)	17,28	37,07	47,39	63,66	38,07
Capital expenditure (fixed assets)/Sale, (%)*	4,84	9,78	9,23	11,99%	7,24
Capital expenditure (fixed assets)*	20,94	10,21	10,89	8,41	13,81

Note: *Author's calculation

Source: <http://www.marketwatch.com/investing/Stock/TESO/financials/cash-flow> (accessed 23/3/2015 am)

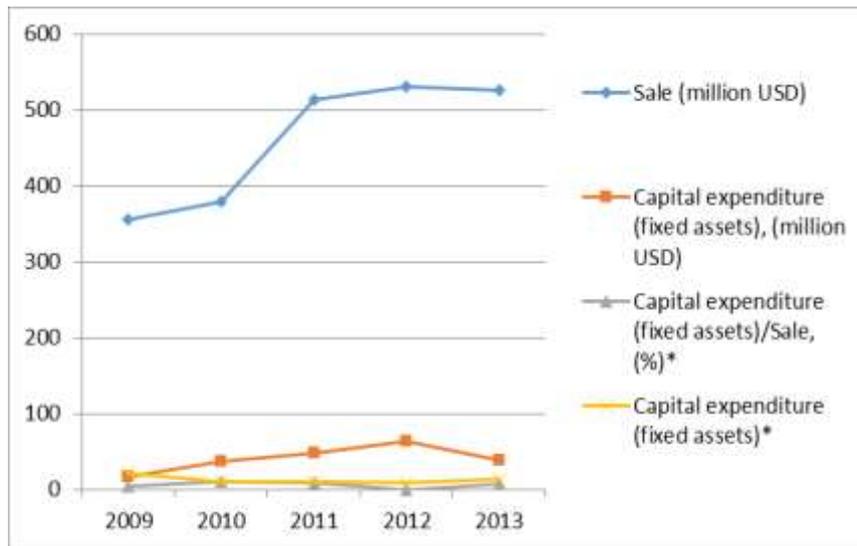


Figure 3. Capital expenditure of Tesco company for fiscal year, 2009-2013

Note: Author's Figure

Source: Table 8

Capital expenditure in percents of sales in Tesco company amounted 3,80% in 2014 (author's calculation, according to: http://www.tescopl.com/files/pdf/reports/ar14/download_annual_report.pdf; accessed 23/3/2015 am).

They are lower than 5 percent, i.e. higher than Walmart's. During time, the efficiency of fixed assets decreased in Tesco company, and than in 2013 slightly increased. The efficiency of the capital expenditure in Tesco company is lower compared to Walmart.

The main global competitors of Walmart company, beside Tesco are Metro Group and Carrefour. For the sake of comparison, we will present their capital expenditures in percents of sale.

The capital expenditures in percents of sale in Carrefour were as follows: 2012 – 2,01%, 2013 – 2,88%, and 2014 – 3,22% (author's calculation according to: <http://www.4-traders.com/CARREFOUR-4626/financials/>; http://www.carrefour.com/sites/default/files/PRESS_RELEASE_FY_2014_EN_050315.pdf; accessed 23/3/2015 am). It is planned that they amount in 2015 – 2,93% and 2016 – 2,94% (according to: <http://www.4-traders.com/CARREFOUR-4626/financials/>; accessed 23/3/2015 am). Capital expenditures of company Carrefour are increasing from year to year, and they are at the same level as Walmart's.

Capital expenditures in percent of sales in Metro Group company were: 2013 – 1,09% and 2014 – 1,13% (author's calculation according to: Metro Group – Annual Report 2013/2014; www.metrogroup.de/.../reports/metro-group-annual-report-2013-14_en.pdf; accessed 23/3/2015 am). They are lower compared to its main global competition, already analysed.

6. Capital investments in fixed assets of trade in Serbia

Capital expenditures in fixed assets differ between countries and are caused by the influence of numerous factors. Table 9 and *Figure 4* show the capital expenditures in fixed assets in percents of gross domestic product (GDP) for selected countries, in order to put more light on Serbia in that context.

Table 9. Gross fixed capital investments in percent from GDP in selected countries, 2010-2013

	2010	2011	2012	2013
Canada	23	23	24	24
Croatia	21	20	20	19
France	22	22	22	22
Germany	19	20	20	20
Italy	20	20	19	18
Serbia	19	18	21	-
Netherlands	20	20	19	18
Slovenia	21	20	19	20
Sweden	22	23	23	22
United Kingdom	16	16	16	16
United States	18	19	19	19

Source: <http://data.worldbank.org/indicator/NE.GDI.FTOT.ZS> (accessed 23/3/2015)

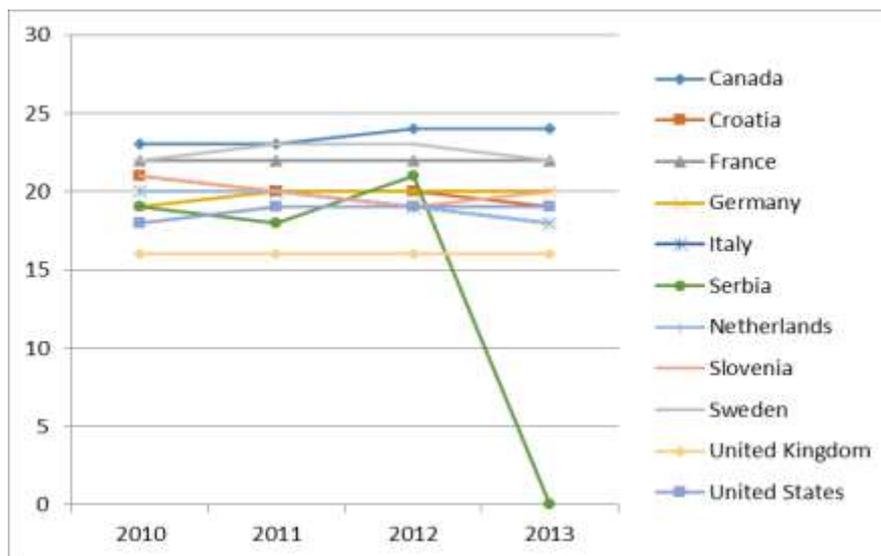


Figure 4. Gross fixed capital investments in percents (in %) from GDP of selected countries, 2010-2013

Note: Author's Figure

Source: Table 9

Gross fixed capital investments in percent of Gross Domestic Product in Serbia are lower compared to Canada, France and Sweden. They are higher compared to United Kingdom and United States. In 2012 they were higher compared to Croatia and Slovenia, countries of the region.

Capital expenditure in fixed assets on the level of total economy is reflection of their size in certain sectors. Regarding that, Table 10 presents percent share of fixed assets in business revenues of selected economy sectors, with special insight into trade of Serbia in 2013.

Table 10. The share of capital expenditure of fixed assets in business revenues of selected sectors in Serbia, 2013

Sector	Capital expenditure (fixed assets), (in 000 dinars)	Share of capital expenditures (fixed assets) in total economy, (%)*	Fixed assets/Business revenues, (%)*
Agriculture, forestry and fishing industry	347,173,626	4,76	106,44
Mining	401,325,326	5,50	111,69
Processing industry	139,592,6979	19,15	63,26
Construction	826,250,391	11,33	185,20
Wholesale, retail, car and motor-cycle repair	782,256,974	10,87	27,53
Transportation and warehousing	597,289,592	8,19	119,16
Accommodation and food service	116,506,500	1,59	223,07
Information and communication service	354,813,457	4,85	115,68
Financial and insurance work	232,151,600	3,18	504,34
Real estate business	222,080,552	3,04	853,84
Total – companies	7,284,108,251	100,00	88,09

Note: Author's calculation

Source: Business registers agency

In 2013 trade participated in total capital expenditures (fixed assets) of economy in Serbia with 10,87%. It is significantly higher compared to similar sectors: transportation and warehousing, and especially, accommodation and food service. The high share of fixed assets in business revenues (i.e. higher amounts of fixed assets than business revenues) in observed business sectors, except processing industry and trade, is the reflection of very unfavourable business conditions and low purchasing power of citizens in Serbia. Very low share of fixed assets in business revenues of trade was influenced by, among other things, very nature of its business. In the assets structure of trade the biggest share is related to turnover assets. The share of fixed assets is significantly lower.

Table 11 shows the investments rate (investments/added value at factor cost) of trade in Serbia for the 2008-2012 period.

Table 11. Investment rate of trade in Serbia, 2008-2012

	Investment of added value at factor cost, (%)
2008	22,74
2009	27,84
2010	23,52
2011	23,53
2012	22,15
Descriptive Statistics:	
N	5
Minimum	22,15
Maximum	27,84
Mean	23,9560
Std. Deviation	2,24707

Note: Author's calculation. Descriptive statistics conducted with the SPSS program

Source: Statistical yearbook of the Republic of Serbia, 2010, 2011, 2012, 2013 and 2014

Investment rate (investment/added value at factor cost) of trade in Serbia in observed time period has cyclic movement trend – it grew and declined. It was 23,95% on average, and it is higher than in European Union (see Table 2).

Table 12 show the capital expenditure in fixed assets of trade in Serbia for 2008-2013 period.

Table 12. Capital expenditure in fixed assets of trade in Serbia, 2008-2013

	Number of companies – enterprises	Number of employed	Capital expenditures (fixed assets), (in 000 dinars)	Fixed assets/ Business revenues, (%)*	Capital expenditures (fixed assets) per company – enterprise, (in 000 dinars)*	Capital expenditures (fixed assets)/ Number of employed, (in 000 dinars)*	Capital expenditures (fixed assets)/ Net income, (%)
2008	37,077	215,540	982,366,954	44,53	26,495,319	4,557,701	1169,04
2009	34,982	208,594	1,009,583,847	44,98	28,860,095	4,839,946	1363,51
2010	35,474	202,585	735,991,172	29,45	20,747,340	3,632,999	918,75
2011	33,451	199,718	754,145,195	28,04	22,544,772	3,776,050	825,57
2012	33,393	195,235	777,748,387	25,92	23,290,761	3,983,652	844,56
2013	33,341	191,653	792,256,974	27,53	23,762,243	4,133,809	889,88

Note: *Author's calculation

Source: Business Registers Agency

As all indicators show, the capital expenditures in fixed assets of trade in Serbia had moderate recent decrease which is the consequence of very bad business conditions and decrease of purchasing power of citizens. The percent share of

capital expenditure (fixed assets) in business revenues (sale) of trade in Serbia is practically non-comparable to trade of countries with developed market economy, i. e. European Union, as well as industry standards, because it is very high due to very low sale. Average capital expenditure per enterprise (expressed in 000 dinars) moved in observed time period between 20,747,340 (2010) up to 28,860,095 (2009) dinars; and per employee from 3,636,999 (2010) up to 4,839,946 (2009) dinars. The relation between capital expenditure (fixed assets) and net income shows that they are financed from external sources (bank loans etc.).

In further elaboration of the treated issues we will make reference to efficiency of capital expenditures in fixed assets of trade in Serbia. Indicator of capital expenditures efficiency in fixed assets is relation between business revenues and fixed assets (business revenues/fixed assets). As to envisage the efficiency of total capital expenditures (investments) in trade of Serbia we will also make reference on inventory turnover indicator (business revenues/inventory). Further more, we analyse the indicators: return on assets and return on equity. Table 13 and Figure 5 show the indicators of the efficiency of capital expenditure (investments) and profitability of trade in Serbia for 2008-2013 period.

Table 13. Efficiency of capital expenditure and profitability of trade in Serbia, 2008-2013

	Fixed assets turnover (business revenues/fixed assets), coefficient	Inventory turnover (business revenues/inventory), coefficient	Return on sales (net income/business revenues), (%)	Return on assets (net income/assets), (%)	Return on equity (net income/capital), (%)
2008	2,40	6,58	3,55	3,99	10,55
2009	2,22	6,23	3,29	3,35	9,21
2010	3,39	5,55	3,20	3,84	13,42
2011	3,56	6,38	3,38	4,22	13,70
2012	3,85	5,77	3,06	3,90	13,03
2013	3,63	6,34	3,09	3,71	11,97
Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Fixed assets turnover	6	2,22	3,85	3,1750	,68844
Inventory turnover	6	5,55	6,58	6,1417	,39605
Return on sales	6	3,06	3,55	3,2617	,18541
Return on assets	6	3,35	4,22	3,8350	,29235
Return on equity	6	9,21	13,70	11,9800	1,78058
Valid N (listwise)	6				

Note: Author's calculation. Descriptive statistics conducted with the SPSS program

Source: Business Registers Agency

In the observed period the efficiency of capital expenditure in fixed and turnover assets, and profitability of trade in Serbia had a cyclic movement, i.e. from 2008 (when new economic crisis emerged) up to 2010 it slightly decreased, and from that year up to 2013 it rose. The average values of analysed indicators amounted: fixed assets turnover – 3,17%, inventory turnover - 6,14%, return on sales - 3,26%, return on assets – 3,83%, and return on equity – 11,98%. That means, in the trade of Serbia (averagely three years) fixed assets turned 3,17 times, and inventories 6,14%. Hundred dinars that are invested in fixed assets averagely annually gain 3,17 dinars of business revenues, and in turnover assets 6,14 dinars. Efficiency of the capital expenditures in fixed assets of trade in Serbia is lower compared to the counties of the European Union, which, for example in 2012 amounted 79,15 turnovers (author's calculation according to Eurostat). Likewise, the profitability of trade in Serbia is lower compared to the European Union, which amounted 6,24% in 2012 (Eurostat).

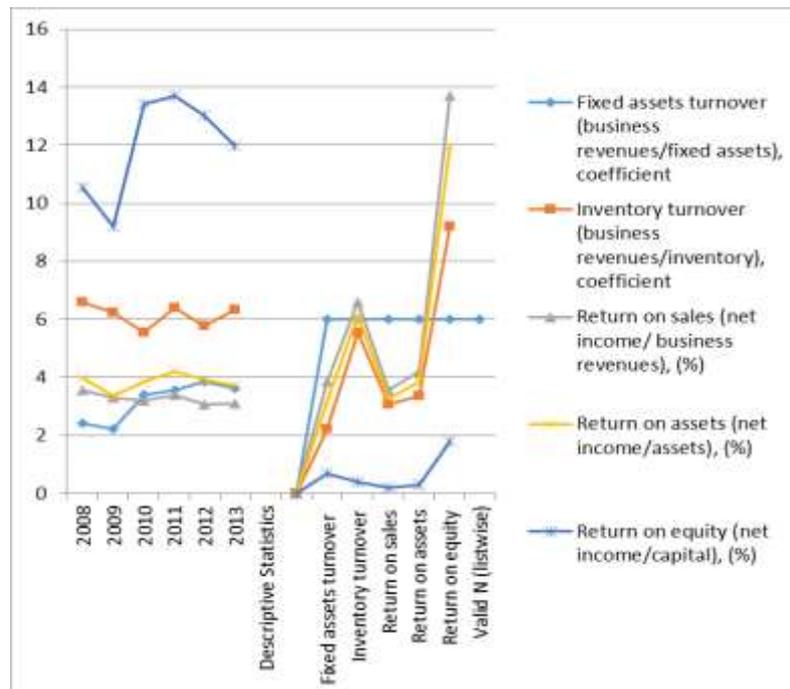


Figure 5. Efficiency of capital expenditure and profitability of trade in Serbia, 2008-2013

Note: Author's Figure

Source: Table 13

With the help of correlation analysis we will envisage the impact of the efficiency of fixed capital expenditures on profitability of trading business in Serbia. Table 14 shows the correlation analysis of the efficiency of investments and profitability of trading business in Serbia.

Table 14. Correlation analysis of the efficiency of investments and profitability of trade in Serbia

Correlations		Fixed assets turnover	Inventory turnover	Return on sales	Return on assets	Return on equity
Fixed assets turnover	Pearson Correlation	1	-,455	-,678	,476	,886*
	Sig. (2-tailed)		,365	,139	,340	,019
	N	6	6	6	6	6
Inventory turnover	Pearson Correlation	-,455	1	,639	,112	-,484
	Sig. (2-tailed)	,365		,172	,832	,331
	N	6	6	6	6	6
Return on sales	Pearson Correlation	-,678	,639	1	,312	-,355
	Sig. (2-tailed)	,139	,172		,547	,490
	N	6	6	6	6	6
Return on assets	Pearson Correlation	,476	,112	,312	1	,715
	Sig. (2-tailed)	,340	,832	,547		,110
	N	6	6	6	6	6
Return on equity	Pearson Correlation	,886*	-,484	-,355	,715	1
	Sig. (2-tailed)	,019	,331	,490	,110	
	N	6	6	6	6	6

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

Note: Author's calculation. Descriptive statistics done with the SPSS program

Source: Table 13

The data in the given table show relation between the efficiency of fixed capital expenditures (fixed assets turnover), on one side and on the other: inventory turnover – negative mean correlation; return on sales – strong negative correlation; return on assets – positive mean correlation; and return on equity – strong positive correlation. Correlation between inventory investment and: fixed assets turnover is negatively mean; return on sales is positively strong; return on assets is positively weak; and return on equity negatively mean. The knowledge on these correlations represents a basis for taking relevant measures as a function of improving impact of the efficiency of investments on the profitability of trade in Serbia. So, for example, modelled upon modern western trade, larger investment in online trade can significantly improve the profitability of trade in Serbia (further: *Retail Futures 2018, May 2013, Centre for Retail research*). *The share of online trade in Serbia is significantly lower than in the countries of developed market economy. The research showed that only 21,2% enterprises received orders via internet during 2013 (The application of information and communication technology in the Republic of Serbia, 2014, The Republic Statistical Office, Belgrade).*

As to thoroughly analyse the efficiency of capital expenditure in fixed assets and turnover assets of trade in Serbia we will research the efficiency of application of fixed assets in selected trading companies (Table 15, Figure 6).

Table 15. The efficiency of capital expenditure and profitability of selected trading companies in Serbia, 2013

	Fixed assets turnover (business revenues/ fixed assets), coefficient	Inventory turnover (business revenues /inventory), coefficient	Return on sales (net income/ business revenues), (%)	Return on assets (net income/ assets), (%)	Return on equity (net income/ capital), (%)
Delhaize Serbia	2,37	3,30	5,26	7,14	11,42
Mercator-S	1,65	4,84	0,81	0,95	2,11
IDEA	3,92	3,43	(-3,63)	(-6,66)	(-40,00)
Knez Petrol	42,29	9,25	0,59	4,19	21,89
OMV Serbia	3,87	10,33	(-1,75)	(-4,34)	(-7,56)
Lukoil Serbia	2,72	5,00	(-10,71)	(-10,71)	(-0,20)

Note: Author's calculation.

Source: Business Registers Agency

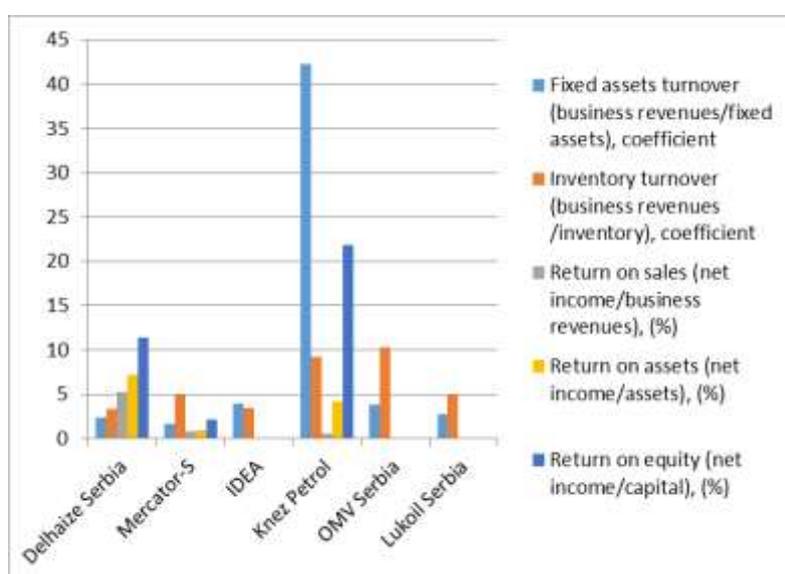


Figure 6. The efficiency of capital expenditure and profitability of selected trading companies in Serbia, 2013

Note: Author's Figure

Source: Table 15

The data in the table show that the efficiency of the capital expenditures in fixed assets and turnover capital differs between analysed trading companies. It is significantly higher in companies that do business with fuel compared with those which sell food. In relation to foreign trading companies (Walmart and Tesco) capital efficiency is lower in analysed trading companies in Serbia. Some trading companies operated with loss so their profitability is negative.

7. Conclusion

Based on the conducted empirical analysis of the given issue in this work we can conclude that the capital expenditure in research and development are larger than in fixed assets almost in all companies, including trading. Capital expenditures in online trade also grow. It all has positive effect on overall business performance of trading companies.

The economic crisis reflected on the amount of fixed investments of retail chains. The trend is – decrease of capital expenditures in fixed assets in many global retailers, except in development of online trade.

The efficiency of capital expenditure in trading companies of Serbia is lower compared to analysed countries of developed market economies (United States of America, Canada) and European Union. Unfavourable business conditions and low purchasing power of citizens had negative impact on that trend. In order to improve the efficiency of capital investments, so as in fixed assets, likewise in inventory, it is necessary to take relevant measures such as: further investment in research and development, innovation, modern technology and online trade.

References

1. Berman, B. and Evans, J. R. (2010). *Retail Management*. Prentice Hall, Boston.
2. Cornile, D. and Langohr, J. (2011). “The distributive trade sector and its impact on euro area prices”. *ECB Monthly Bulletin*, 35-52.
3. Deloitte: *Global Powers of Retailing* 2015.
4. Eurostat – Annual Report on European SMEs 2013/2014 – A Partial and Fragile Recovery. Final report – July 2014.
5. Eurostat – *Business economy – size class analysis*. Data from April 2013.
6. Eurostat – *Key figures on European business with a special feature on SMES*, (2011). European Commission, Pocketbooks.
7. Evans, J. R. (2005). “Are the largest public retailers top financial performers? A longitudinal analysis”. *International Journal of Retail & Distribution Management*, 33(11), 842-857.
8. Hirschey, M., Skiba, H. and Wintoki, M. B. (2012). “The Size, Concentration and Evolution of Corporate R&D Spending in U.S. Firms from 1976 to 2010: Evidence and Implications”. *Journal of Corporate Finance*, 18, 496-518.
9. Katua, N.T. (2014). “The Role of SMEs in Employment and Economic Growth in Selected Countries”. *International Journal of Education and Research*, 2(12), 461-472.
10. Levy, M. and Weitz, B. A. (2007). *Retailing Management*. McGraw-Hill, Irwin, Boston.

11. Li, C., Dong, H., Chen, S., & Yang, Y. (2014). "Working Capital Management, Corporate Performance, and Strategic Choices of the Wholesale and Retail Industry in China". *The Scientific World Journal*, 2014, 953945. doi:10.1155/2014/953945, 1-15.
12. Lovreta, S. (2011). *Trgovinski menadžment*. Ekonomski fakultet, Beograd.
13. Lukic, R. (2011). *Evaluacija poslovnih performansi u maloprodaji*, Ekonomski fakultet, Beograd.
14. Lukic, R. (2012). "Sustainable Development of Retail in Serbia". *Review of International Comparative Management*, 13 (4), 574-586.
15. Lukic, R. (2013a). *Računovodstvo trgovinskih preduzeća*. Ekonomski fakultet, Beograd.
16. 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.
17. Lukic, R. (2014a). „The economic and financial status of trade entrepreneurs in Serbia“, *Economic and Environmental Studies*, 14 (3), 239 -264.
18. Lukic, R. (2014b). "The profitability of trade in Serbia". *Asian Journal of Management Research*, 4 (3), 485-500.
19. Lukic, R. (2014c). "The Analysis of the Efficiency of Trade Costs Management in Serbia", *Economia Seria Management*, 17(2), 1-15.
20. Lukic, R. (2014d). "Analysis of the Efficiency of Small Independent Retailers in Serbia". *Eurasian Journal of Business and Economics*, 7(13), 91-103.
21. Lukic, R. (2015). "The Analysis of Profit per Employee in the Trade of Serbia". *Economia. Seria Management*, 18(1), 5-16 .
22. Mandal, N. and Goswami, S. (2008). "Value added statement (VAS) – A critical Analysis". *Great Lakes Herald*, 2(3), 98-120.
23. Pua, C-H., Wong, S.S-L. and Habibullah, S. (2012). "Rationality of business operational forecasts: evidence from Malaysian distributive trade sector". *MPRA*, 1-26.
24. Pulling the Capex Lever, (2010). A.T, Kearney, 1-16.
25. Radović, M. M. (2014). "Unleashing the potential of the small and medium enterprise sector in Serbia". *Economic research – Ekonomska istraživanja*, 27(1), 700-712.
26. Retail Futures 2018, May 2013, Centre for Retail research.
27. Retail Operations – Six success factors for a tough market, (2013).Ernst & Young LLP, 1-16.
28. Shin, S. and Eksioğlu, B. (2014). "Effects Of RFID Technology On Efficiency And Profitability In Retail Supply Chains". *The Journal of Applied Business Research*, 30 (3), 633-646.
29. Statistički godišnjak Republike Srbije (2014). Republički zavod za statistiku, Beograd.
30. Upotreba informacione i komunikacione tehnologije u Republici Srbiji 2014. Republički zavod za statistiku, Beograd.