

## Financial Performance Analysis of the Companies in the Agricultural Sector and Food Industry in the Republic of Srpska

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### Abstract

The objective of the research was to analyse operational results and financial positions by companies in the agricultural sector and food industry in the Republic of Srpska in the 2012-2015 period. The scientific and research methods of classification and compilation, the analysis of time series, comparison, size and structure analysis, method of descriptive statistics, calculation of financial position indicators and methods of conclusion were used. The results of the research show that the agricultural sector, during the four analysed years, suffered loss, whereas the food industry was profiting during the same period. The number of employees in the agricultural sector declined, although its productivity increased while the number of employees in the food industry increased as well as its productivity. The return on equity and assets was negative in the agricultural sector, but it was positive in the food industry. Both sectors were heavily indebted and illiquid, but currently solvent.

*Key words:* financial performance, agriculture, food industry, the Republic of Srpska

### Introduction

Agriculture is an important economy sector of the Republic of Srpska (RS), and what is also very important for agricultural production is food industry as a stable consumer of raw materials of agricultural origin. Agricultural production is, to different extent, the main activity of over 100,000 individual farms. Holders of serious commercial agricultural production are joint-stock companies, limited liability companies or agricultural cooperatives.

In the RS, there were between 308 and 330 companies/cooperatives in the 2012-2015 period, while 270 to 309 companies operated in the food industry.

There are many theories about the purpose and goals of business operations. A number of these goals are of a financial nature and are reduced to achieving a positive difference between income and expenses and the greater return on invested capital. Performance analysis of individual companies regularly deals with their managerial structures. However, in addition to the individual results that can be found in their business and audit reports, a company is interested in the results achieved by the entire economy and its individual sectors and subsectors. Some aggregate indicators reflect the "blood count" and the health of a country's economy.

The company's business results are systematized in the form of financial statements, balance sheets and income statements. The balance sheet consists of data about assets, liabilities and equity. An active side of balance sheet consists of assets divided into current assets and long-term (fixed) assets, while the other side of balance sheet consists of liabilities (current and long-term) and equity. The income statement consists of data regarding revenues and expenses, and finally shows whether a company realized profit or suffered loss. Different relations are also derived from the information contained in the financial statements. Financial ratios are designed to help in financial statements evaluation. They usually include profitability ratios, liquidity ratios and debt ratios (Brigham and Huston, 2007). Business performance analyses of the companies in the agricultural sector in B&H or the Republic of Srpska have been performed by some authors, from time to time, but there is no systematic monitoring over the performance.

In the Republic of Srpska, Stojanović and Stojanović (2015) carried out a financial analysis of the general position of the agricultural sector in the Republic of Srpska in the 2010-2012 period, without going into the analysis of data for certain sectors. Vaško et al. (2016) analysed (only) revenues, costs and business results of agricultural companies in the sector of agriculture in the 2007-2014 period. Kulelija et al. (2016a) analysed the liquidity of 153 firms from the agribusiness sector in B&H in the 2008-2014 period, while the same authors (2016b) analysed, at the same time, the profitability of milk processors in Bosnia and Herzegovina. Similar surveys were conducted by numerous researchers outside B&H. Jakšić et al. (2016) analysed the profitability of 3,022 agricultural companies in six Southeast European countries in the 2012-2014 period. Vukoje et al. (2013) have calculated the financial results and financial position of agricultural enterprises in Serbia for the 2007-2010 period, and Vukoje and Dulić (2017) analysed financial results and financial position of the Vojvodina agro-enterprise in the 2010-2016 period.

Novotna and Svoboda (2015) analysed the business results of 830 farms in the Czech Republic based on their balance sheets and profit and loss statements in 2004-2010.

## Materials and Methods

The analysis has been based on the available data derived from the so-called short balance sheets and income statements of the legal entities registered in the Republic of Srpska. Legal entities may be registered under the Companies Act, the Agricultural Cooperative Act and the Law on Associations of Citizens and Foundations. According to the Law on the Register of Financial Statements (Official Gazette of RS, 74/10 and 94/15), all companies are obliged to submit their financial reports to the Intermediary Agency for IT and Financial Services of the Republic of Srpska (IAITFS RS). This analysis used the financial data of 308 - 330 companies in the agricultural sector, and 270 - 309 companies in the food industry. Among companies classified in group A - Agriculture, forestry and fishing; only the companies classified in the subgroups of agriculture (01) and fishing (03) were subject to analysis. Among companies classified in group C - Processing industry, only foodstuffs producers (10), beverage producers (11) and tobacco producers (12) were subject to the performance analysis. The analysis covered the four-year period (2012–2015) and included the calculation of productivity, efficiency, liquidity and solvency ratios. Formulas for calculating these ratios are commonly known, but one can refer to a foreign (Bragg, 2002) and a domestic (Mikerević, 2011) source of literature. The analysis also included trend analysis, i.e. analysis of historical data, as well as the comparative analysis of two interdependent sectors - agriculture and food industry.

## Results and Discussion

The key business outcomes of the two selected sectors have been systematized below and the selected indicators have been calculated. The resulting sector and subsector ratios may in some cases serve as a benchmark (criteria) for estimation of the individual companies' financial performance.

### Aggregate financial results

Generally, about one-third of the enterprises in the agricultural sector were financially inefficient over the entire period, i.e. they had a negative financial result (Tables 1, 2).

Tab. 1. Sub-sectors' contribution to the profitability of the agriculture and fishing sector (in KM) (2012-2015)

*Грански допринос профитабилности сектора пољопривреде и рибарства (у КМ) (2012-2015)*

Label	Sub-sector	2012	2013	2014	2015
01.11	Cultivation of cereals (excluding rice), legumes and oilseeds	-4,789,784	-1,707,196	-6,640,364	-5,141,746
01.13	Cultivation of vegetables, melons and watermelons, rooted and tuberous vegetables	427,992	69,571	-72,852	724,378
01.15	Tobacco production	2,316	68,230	-338,001	220,491
01.16	Processing of textile plants	0	0	0	-1,787
01.19	Cultivation of other one-year crops	6,252	9,065	36,824	22,008
01.21	Grape production	-238,108	-571,984	-584,941	-91,553
01.22	Growing tropical and subtropical fruit	-1,463,383	-179,234	-104,991	-105,354
01.23	Citrus production	0	0	0	10,334
01.24	Cultivation of apples and other fruits	196,094	-4,654,703	-811,322	2,282,861
01.25	Cultivation of berry, nuts and other fruits	-16,511	5,133	56,319	71,232
01.27	Cultivating plants for making beverages	52,820	10,273	783	6,919
01.28	Cultivation of plants for use in pharmacy, aromatic spice and medicinal plants	36,005	52,523	69,932	106,500
01.29	Cultivation of other perennial crops	-43,476	22,098	0	1,065
01.30	Cultivation of planting material and decorative plants	82,388	197,647	145,840	-803,039
01.41	Cattle breeding for milk production	-2,908,534	-907,525	-960,051	-6,464,507
01.42	Growing of other cattle and buffalo	-604,543	-243,191	-947,559	-1,299,026
01.43	Growing horses, donkeys, mules and mules	-109,987	0	-93,683	-436,683
01.45	Breeding of sheep and goats	-15,994	-10,577	-34,297	-325,144
01.46	Pig production	492,779	-3,194,319	228,258	-1,981,012
01.47	Poultry farming	206,476	733,212	734,989	732,215
01.49	Growing of other animals	-161,774	-88,976	328,255	108,637
01.50	Mixed agricultural production	89,773	-206,338	-710,323	-626,652
01.61	Secondary activities in crop growing and planting	2,923	52,829	134,373	69,841
01.62	Support activities in animal husbandry	825	-99,430	87,497	1,992
01.70	Hunting, trapping in traps and related service activities	6,568	19,331	41,816	28,646
02.30	Collection of non-cultivated forest products and products, except forestry assortments	0	138,199	864,723	0
03.11	Fishing	12,538	0	0	0
03.12	Freshwater fishing	-80,641	-77,685	52,425	-1,873
03.21	Sea Aquaculture	18,235	1,360	-18,847	0
03.22	Freshwater aquaculture	-452,898	-4,881,522	-623,066	-1,339,595
	<b>Total:</b>	<b>-9,251,649</b>	<b>-15,443,209</b>	<b>-9,158,263</b>	<b>-14,230,852</b>

*Source: Own processing of data acquired by the IAITFS RS.*

Tab. 2. Sub-sectors' contribution to the profitability of the food industry (in KM) (2012-2015)

*Грански допринос финансијском резултату сектора прехранбене индустрије (у КМ) (2012-2015)*

Label	Sub-sector	2012	2013	2014	2015
10.11	Processing and preserving of meat	-1,323,252	79,788	-536,389	1,207,588
10.12	Processing and preserving poultry meat	-2,481	-16,699	-6,649	99,971
10.13	Production of meat and poultry meat products	-4,225,063	730,251	463,790	4,314,243
10.20	Processing and preserving of fish, shellfish and molluscs	297,935	195,775	190,097	248,678
10.31	Processing and preserving of potatoes	-728,793	396,810	-379,751	370,731
10.32	Production of fruit and vegetable juices	361,824	411,353	679,028	1,215,326
10.39	Other processing and preserving of fruits and vegetables	-328,356	-4,002,902	-4,199,465	-3,295,031
10.41	Production of oils and fats	-267,919	-141,364	26,581	0
10.51	Production of milk, dairy products and cheese	-1,755,816	2,558,365	1,301,552	-3,295,006
10.52	Production of ice cream and other frozen mixtures	-71,005	-79,959	9,362	-33,090
10.61	Production of mill products	1,638,535	-2,620,746	-1,093,543	-1,030,811
10.62	Production of scrap and scrap products	3,468,055	3,252,741	2,136,614	2,360,922
10.71	Production of bread, fresh pastry and cakes	1,293,873	3,830,744	4,541,683	4,587,628
10.72	Production of breadcrumbs and biscuits, production of permanent pastries and cakes	399,247	467,859	860,440	889,779
10.73	Production of pasta, noodles, couscous and similar flour products	-386,619	13,109	36,901	63,714
10.81	Sugar production	-2,601,985	-2,591,429	-6,447,494	-1,764,884
10.82	Production of cocoa, chocolate and sugar products	4,913,103	9,616,401	14,253,922	10,681,592
10.83	Processing of tea and coffee	761,109	2,457,895	-275,577	672,332
10.84	Production of spices and other food additives	-378,828	-1,988	55,849	73,295
10.85	Production of finished food and meals	-43,005	0	4,089	12,785
10.86	Production of homogenised food and dietary foods	287,874	-74,746	-74,746	0
10.89	Production of other food products, d. n.	2,023,181	1,878,892	2,233,356	1,663,583
10.91	Production of finished food for domestic animals	3,221,095	4,678,421	3,569,523	3,739,297
11.01	Distillation, purification and mixing of alcoholic beverages	1,706,496	320,222	584,031	1,005,663
11.02	Production of grape wine	517,179	690,985	1,756,774	836,368
11.05	Beer production	-1,237,504	205,275	6,418,049	6,216,927
11.07	Production of refreshing beverages, production of mineral water and other bottled waters	738,289	662,134	732,211	2,161,372
12.00	Tobacco production	-2,614,824	-13,334,728	-11,407,433	-4,643,315
	<b>Total food industry:</b>	<b>5,662,345</b>	<b>9,582,459</b>	<b>15,432,805</b>	<b>28,359,657</b>

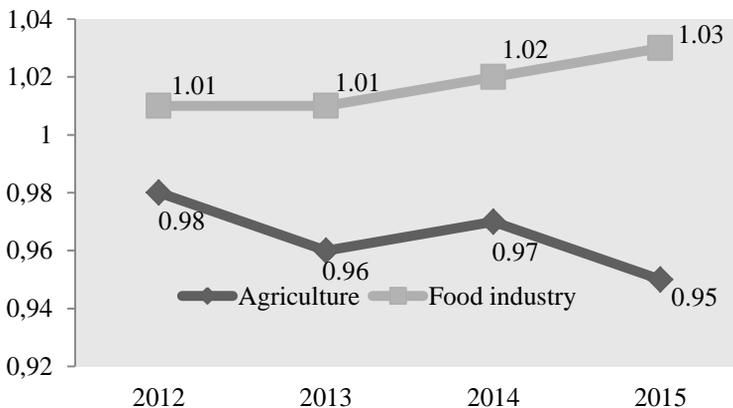
*Source: Own processing of data acquired by the IAITFS RS.*

For four years, the entire sector suffered an aggregate loss of between 9 and 15 million convertible marks (KM) per annum. Therefore, the financial positions of various branches of agricultural sector were different. The biggest contributors to the total loss of the whole sector were cereal and milk producers, among other reasons, due to the number of companies involved in these activities. The biggest profit was achieved by vegetable producers and poultry fattening farms.

Given the organizational form, the largest loss occurred in large companies, i.e. joint-stock companies, although there were only a few of them. The co-operative sector has been having increasingly significant financial problems, and only SMEs (which mostly have the status of limited liability companies) were relatively efficient. Comparing to the agriculture sector, the situation was better in the food industry. The whole sector had positive results, with a constant increase in total profits. Also, in this sector, there were 100 companies that were operating with losses, but the contribution of the positive part was dominant, so the overall financial result was also positive. The biggest contributors to the total food industry income in the RS were producers of ready-to-eat animal feed, meat, confectionery and dairy industry, but the most positive results were achieved by chocolate, animal feed stuffs and breweries.

### Ratio analysis

Economic efficiency ratios have been calculated from the previous data related to the fluctuation of revenues and expenses.



Graph 1. Economic efficiency ratios (2012-2015)

*Коефицијенти економичности (2012-2015).*

Source: Own processing of data acquired by the IAITFS RS.

The operations of agricultural sector have been inefficient ( $E < 1$ ) over the years, with deterioration of the economic efficiency ratio, while the food industry sector's operations have been efficient ( $E > 1$ ), with an increase in the economic efficiency ratio.

Tab. 3. Return on asset (2012-2015)

*Поврат на активу (2012-2015)*

	ROA	2012	2014	2015	2016
1.1	Agriculture*	-1.62%	-2.78%	-1.53%	-2.34%
1.2	Food industry*	0.55%	0.90%	1.33%	2.38%
2.1	Agriculture**	0.09%	-0.98%	0.10%	-1.04%
2.1	Food industry**	2.74%	3.17%	3.05%	4.03%

\* Net profit / Assets; \*\* (Net profit + Interest) / Assets

Source: Own processing of data acquired by the IAITFS RS.

Given that the agricultural sector operated with negative financial results, its return on assets was negative. However, if interest costs were subtracted from the loss, the return on the asset would become positive and have an increasing trend over the analysed period. Food industry has a positive return on assets in both options (without or with interest costs). According to this indicator, the companies in the food industry sector were more efficient than the companies in the agricultural sector.

Tab. 4. Return on equity (2012-2015)

*Поврат на капитал (2012-2015)*

	ROE	2012.	2013	2014	2015
1.1	Agriculture*	-4.24%	-7.70%	-4.20%	-6.55%
1.2	Food industry*	1.34%	2.10%	2.98%	5.37%
2.1	Agriculture**	0.24%	-2.72%	0.27%	-2.92%
2.1	Food industry**	6.61%	7.38%	6.84%	9.08%

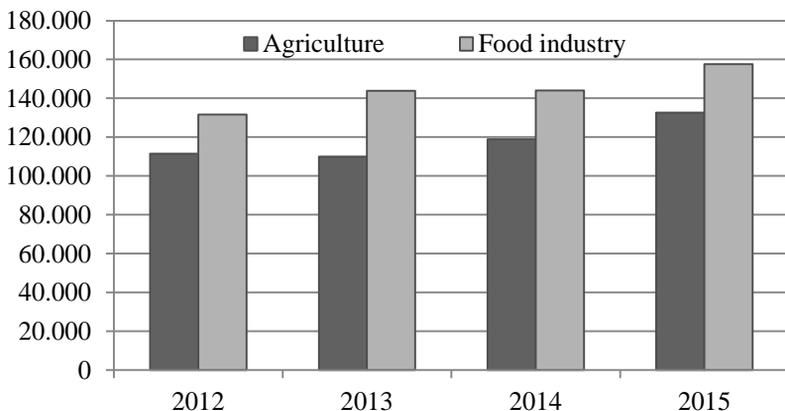
\*Net profit / Equity; \*\* (Net profit + Interest) / Equity

Source: Own processing of data acquired by the IAITFS RS.

Given that equity's value is lower than total assets in both sectors, the return on assets is higher than return on equity. In the case of agricultural sector companies return on equity (ROE) is negative while the companies in the food industry sector have positive ROE (as well as ROA).

Productivity, seen as the total income per employee, was on the increase in both sectors. In the agricultural sector, revenues decreased, while at the same time, the number of employees decreased to a greater extent, which therefore led to productivity increase.

In the food industry sector, both revenue and the number of employees grew, although the revenue grew faster, again resulting in productivity increase.

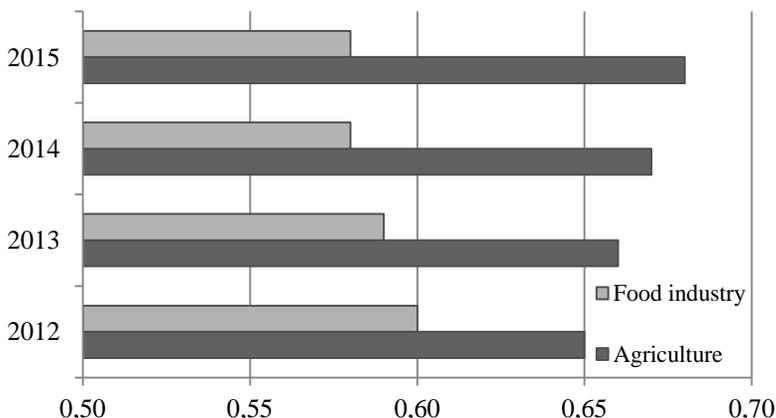


Graph 2. Income per employee (2012-2015)

*Приход по запосленом (2012-2015)*

Source: Own processing of data acquired by the IAITFS RS.

The indebtedness ratio has been observed at two levels, as the ratio of debt to total assets, and the ratio of debt to equity. The ratio of debt to total assets increased in the companies of agricultural sector, while this ratio decreased in the case of food sector companies. However, both groups of companies have unfavourable structure of financial sources as more than 50% of total assets is financed through debt.

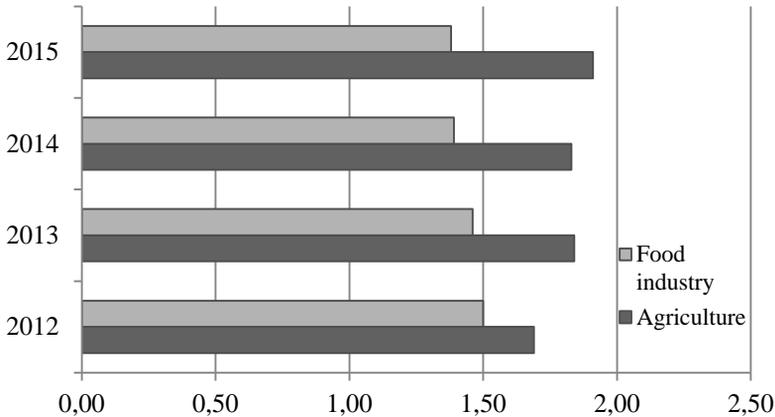


Graph 3. Debt to total assets ratio (2012-2015)

*Коефицијент дуг/актива (2012-2015)*

Source: Own processing of data acquired by the IAITFS RS.

The debt of the agricultural sector companies increased and was almost twice as big as their equity. The food industry companies' debt decreased slightly, but was still higher than their equity.



Graph 4. Debt to equity ratio (2012-2015)

*Коефицијент дуг/капитал (2012-2015)*

Source: Own processing of data acquired by the IAITFS RS.

In addition to over-indebtedness, companies in the agricultural sector are generally illiquid. Quick ratio altered for the worse in 2015, largely due to decrease in cash and receivables compared to the level of short-term liabilities that increased.

Tab. 5. Quick ratio and current ratio (2012-2015)

*Коефицијенти убрзане и текуће ликвидности (2012-2015)*

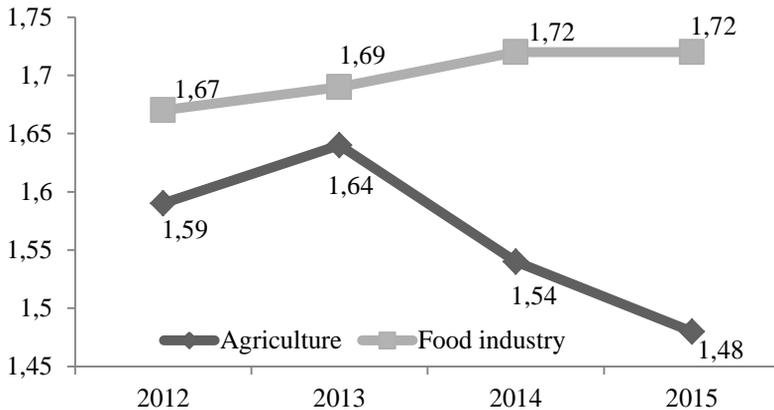
	Liquidity Ratio	2012	2013	2014	2015
1.1	Agriculture*	0.47	0.49	0.49	0.43
1.2	Food industry*	0.56	0.61	0.64	0.63
2.1	Agriculture**	0.91	0.91	0.87	0.88
2.2	Food industry**	0.93	0.97	1.01	1.01

\* Quick ratio = Short-term receivables, short-term investments and cash / Short-term liabilities

\*\* Current ratio = Current assets / Short - term liabilities

Source: Own processing of data acquired by the IAITFS RS.

The current ratio is lower than 1 (and should be > 2) indicating that short-term liabilities could not be settled up even if all current assets (including inventories) would be collected. Food industry has more favourable liquidity indicators than the agricultural sector, but they are also unsatisfactory and below its criteria.



Graph 5. Solvency ratio (2012-2015)

*Коефицијент солвентности (2012-2015)*

Source: Own processing of data acquired by the IAITFS RS.

Both solvency ratios are greater than 1 and indicate that the business assets are currently higher than the liabilities. Liabilities could be settled through the sale of assets, but only providing that the book value of the asset represents its fair (market) value.

## Conclusion

During the whole period (2012-2015), the agricultural sector in the Republic of Srpska was not economically efficient (total revenues were lower than total expenses), while the food industry sector operated efficiently at the same time (earnings achieved). According to previous findings, return on assets and equity has been negative in the agricultural sector but positive in the food industry. The agricultural sector is also heavily indebted. During the four-year period, the situation altered for the worse as the liabilities were on slight increase while equity value stagnated. The food industry is also heavily indebted and its short-term and long-term debt is 40-50% higher than its equity. Generally, the main businesses dealing with agriculture are illiquid as quick ratio and current ratio of this sector are below the target level. A similar finding is also true for companies in the food industry sector. Long standing aggregate loss of the companies from the agricultural sector in the Republic of Srpska suggests the need for a more drastic solution to the destiny of one hundred "losers" that burden the overall result of the whole sector.

At the same time, the food industry sector is showing greater vitality, as its financial performance improved during the period, although there are also companies in this sector cumulating losses from year to year.

## References

- Bragg, S. (2002). *Business Ratios and Formulas, a comprehensive guide*. New Jersey: John Wiley & Sons.
- Brigham, E. F. and Houston, J. F. (2007). *Fundamental of Financial Management*. Thomson South-Western.
- Jakšić, D., Zekić, S., Ristić, M. and Mijić, K. (2016). Profitabilnost poljoprivrednih preduzeća u zemljama Jugoistočne Evrope. *Agroekonomika*, 45(71), 1-11.
- Kulelija, B., Ognjenović, D., Bajramović, S. and Bećirović, E. (2016a). Liquidity of agro-food sector in Bosnia and Herzegovina in function of sustainable business. *Works of the Faculty of Agriculture and Food Science of University of Sarajevo*, LXI(66/1), 437-439.
- Kulelija, B., Ognjenović, D., Bajramović, S. and Bećirović, E. (2016b). Rentabilnost proizvođača mlijeka u Bosni i Hercegovini. *Radovi Poljoprivredno-prehrambenog fakulteta Univerziteta u Sarajevu*, LXI(66/2), 167-176.
- Mikerević, D. (2011). *Finansijski menadžment*. Banja Luka: Ekonomski fakultet.
- Novotna, M. and Svoboda, J. (2014). The economic results of farms in the Czech Republic. *Journal of Central European Agriculture*, 15(4), 31-50.
- Sredojević, Z., Naumovski, V. and Kresović, B. (2016). Evaluacija poslovnih performansi u funkciji strategije razvoja preduzeća. *Agroekonomika*, 45(71), 93-103.
- Stojanović, T. and Stojanović, S. (2015). Finansijska analiza položaja preduzeća iz poljoprivrednog sektora Republike Srpske. *Agroznanje*, 16(4), 549-557.
- Vaško, Ž., Ostojić, A., Rokvić, G., Drinić, Lj., Mrdalj, V., Figurek, A. and Brković, D. (2016). *Poljoprivreda i ruralni razvoj u Republici Srpskoj do 2020. godine*. Poljoprivredni fakultet, Univerzitet u Banjoj Luci.
- Vukoje, V., Jelić, D., Glišović, A. and Dobrenov, I. (2013). Finansijski rezultati poslovanja poljoprivrednih preduzeća Srbije. *Agroekonomika*, (57-58), 64-74.
- Vukoje, V. and Dulić, V. (2017). Kretanje osnovnih indikatora uspjeha poljoprivrednih preduzeća Vojvodine. *Agroekonomika*, 46(73), 43-53.
- Zakon o registru finansijskih izvještaja (2010). Službeni glasnik Republike Srpske, br. 74/2010 i 94/2015.

# Анализа финансијских перформанси компанија у секторима пољопривреде и прехранбене индустрије у Републици Српској

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## Сажетак

Циљ истраживања је била анализа оперативних резултата и финансијске позиције привредних друштава у сектору пољопривреде и у прехранбеној индустрији у Републици Српској у периоду 2012-2015. година. Током истраживања кориштене су научно-истраживачке методе класификације и компилације, анализе временских серија, компарације, анализа њихове величине и структуре, методе дескриптивне статистике, израчунавања индикатора финансијске позиције и метода закључивања. Резултати истраживања показују да је сектор пољопривреде у Републици Српској током све четири анализираних године пословао са губитком, док је прехранбена индустрија у истом периоду пословала са добитком, при чему је положај појединих грана различит. Број запослених у сектору пољопривреде се смањивао, због чега је њена продуктивност расла, а број запослених у прехранбеној индустрији је растао, али је расла и њена продуктивност. Поврат на капитал и активу у сектору пољопривреде је био негативан, а у сектору прехранбене индустрије позитиван. Оба сектора су била доста задужена и великвидна, али тренутно солвентна.

*Кључне ријечи:* финансијске перформансе, пољопривреда, прехранбена индустрија, Република Српска.

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