Controller's performance analysis of the largest stone fruit producer in the Republic of Srpska (Bosnia and Herzegovina) in light of COVID-19 pandemic

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Abstract

This paper explores the possibilities of applying and the benefits of controlling tools for performance analysis of agricultural companies in Bosnia and Herzegovina. In order to obtain a clearer picture of the dynamics of business performance, particularly in the conditions of the COVID-19 pandemic, a controller's review of the largest stone fruit producer in Bosnia and Herzegovina has been conducted. The review covers three-year period (2020-2022) and includes the benchmarking of the observed company with the top three competitors in the country and the entire industry's average. Performance analysis of the largest stone fruit producer in Bosnia and Herzegovina has shown that the COVID-19 pandemic had significantly adverse effects on its business performance. Compared to the beginning of the pandemic, there was a significant decrease in total revenue, net profit, market share; activity indicators also significantly declined, and consequently, profitability ratios as well. The case study presented in this paper illustrates that no matter how strong and dominant companies may be in the market, they are also at greater risk of losing out during times of crisis and uncertainty. This study confirmed the findings of other research and demonstrated that large firms adapt to changes with more difficulty than smaller ones and that Return on Assets (ROA) is an indicator that points to deeper structural issues that further reflect on other performance metrics. Additionally, by combining controlling tools and multiple financial indicators, the case study provides a practical example of how to detect the initial signs of a business crisis early on and understand the causes of poorer performance, as well as where to seek opportunities for improvement.

Key words: controlling, performance analysis, benchmarking, financial indicators

INTRODUCTION

The COVID-19 pandemic has caused significant difficulties for business environments globally. The lockdown measures and reduction in mobility have created many obstacles within the supply chain and have threatened the continuity of all companies' activities, on a broad range of types of entities, from listed companies to small and medium-sized enterprises (Achim et al., 2022). Understanding the financial challenges faced by agriculture firms during the pandemic can help industry stakeholders and firms adapt their business strategies, build resilience, evaluate risks and opportunities, and allocate resources effectively (Bobitan et al., 2023).

The results of the study performed by Bobitan et al. (2023) showed that only a part of the analyzed agricultural firms have developed their dynamic capabilities that help them effectively find solutions to adjust to the volatility of the market in a short timeframe. The authors concluded that agriculture firms should improve their risk management framework to be more proactive and improve their resilience capabilities.

Some authors emphasize the undeniable significance of controlling as a useful tool for risk management (Stefko et al., 2019; Csikósová et al., 2022) especially in conditions of uncertainty and crises (Eldridge et al., 2014). Numerous authors have addressed controlling and the significance of its tools for effective management and achieving better financial performance (Sprinkle, 2003; Morales & Pezet, 2012; Spickova, & Myskova, 2015; Pisar & Bilkova, 2019; Khudyakova et al., 2019).

Several authors have explored the significance of controlling as a management tool in agriculture. Gottlieb et al. (2021) studied small family firms in the area of farm business, finding negative state of small enterprises using control practices. Since most agricultural firms are family businesses it is interesting to mention a comprehensive review of the empirical literature on use of controlling tools in SMEs which found that management accounting and control seem to be generally less relevant to family businesses than to non-family businesses (Senftlechner & Hiebl, 2015).

However, research has shown that the introduction of controlling has a positive effect on the financial success of businesses, including the agricultural sector. Gloy and LaDue (2003) examined the linkage between the adoption of financial management practices and profitability for a group of New York dairy farms. They found out that there are positive returns to conducting detailed financial analyses by farmers. Also, Vanhuyse (2016) explored the impact of management practices of farm businesses in England on financial performance. Management practices, including controlling, taking into account the environment to achieve organizational goals, were found to have positive effects on individual farm financial performance, both for all farm types as well as per farm type.

One of the indispensable tools of controlling is benchmarking. It is believed that through benchmarking, comparisons between businesses are made, and the process leads to improved effectiveness, enhancing performance (Horváthová et al., 2021). Bobitan et al. (2023) explored how firms operating in the agricultural sector have understood the need to identify and follow the best practitioners in the market, performing a benchmarking analysis aimed at providing insights into firms' financial sustainability. According to Wilson et al. (2005), through 'benchmarking' a farm business manager would: measure current financial performance; identify areas of performance where improvement needs to be made, and identify drivers and therefore changes which can be made to current husbandry and business management processes and practices in order to improve enterprise and/or whole farm performance. This has been confirmed by Vanhuyse's study (2016) showing that benchmarking has positive, statistically significant effects on financial performance of farm businesses in England.

Building upon the consensus regarding the importance of benchmarking as a controlling tool in achieving better business performance, the next question that arises is which indicators to monitor and compare. Horváthová et al. (2021) claim that the most important indicators are profitability indicators Return on Assets – ROA, Return on Equity – ROE and Return on Sales – ROS, which were confirmed by several other authors (Očko, 2009; Bogetoft, 2012; Bărbuță-Misu et al., 2019). These are important financial indicators which determine internal risk factors, such as business risk.

According to Deloitte Center for the Edge (2013) ROA is the most effective, broadly available financial measure to assess company performance. In the environment of turmoil and uncertainty, the long-term trajectory of ROA is the best financial scorecard of a company's health and an indicator of how its decisions play out.

The literature review on financial health indicates that the ratios as identified in the DuPont Expansion model, could be a valuable method to measure the financial performance of the agricultural industry in England (Vanhuyse, 2016). In their study, Wilson et al. (2005) presented an overview of the most common whole farm physical and financial performance indicators and benchmarking practices used in Eastern Australia. Financial performance indicators usually relate to profitability or earning capacity, liquidity (i.e. short-term financial stability) and solvency (i.e. long-term financial stability). However, these indicators are being compared between: (1) the same business in one or more previous years; (2) a similar business or group of businesses (i.e. in same district, region, etc.) where the performance indicator relates to the same time period and/or previous time periods, and/or (3) the industry in which the business is located.

MATERIALS AND METHODS

The subject of this research is the possibilities of applying and the benefits of controlling tools for analyzing the business performance of agricultural companies in the Republic of Srpska (Bosnia and Herzegovina). For this purpose, a controlling analysis of the business performance of the largest fruit producer in the Republic of Srpska (RS), the company Agroimpex Nova d.o.o. Banja Luka, has been conducted.

Materials used for this analysis are two essential financial statements: balance sheets and income statements (profit and loss accounts) publicly available in APIF[1] and FIA[2] databases. In order to obtain a clearer picture of the dynamics of business performance, particularly in the conditions of the COVID-19 pandemic, financial reports for three years, 2020-2022, were used.[3] Therefore, performance indicators have been compared between the same business for three consecutive years. Additionally, the benchmarking method was used by comparing the performance indicators of the observed company with the same indicators of the top three competitors in the industry, in the RS, as well as with the average for the entire industry at the level of Bosnia and Herzegovina (B&H).[4]

The controller's performance analysis is based on absolute indicators and relative indicators, i.e. financial ratios. Absolute indicators are selected figures from balance sheets and income statements such as: total revenue, sales revenue, net profit, profit before taxes, operating profit, total assets, current assets, inventory, receivables, current liabilities, and payables. Financial ratios include the following groups of ratios: profitability ratios, liquidity ratios, leverage ratios and asset management ratios. Formulas for calculating these ratios are commonly known and can be found in numerous literature on financial management (e.g. Van Horne, 1995; Bragg, 2002), controlling (e.g. Bragg, 2004; Očko, 2009) and accounting (e.g. Meigs & Meigs, 1999; Wheeling, 2008).

RESULTS AND DISCUSSION

Profitability - the starting point for controlling

As many authors agree (Očko, 2009; Bogetoft, 2012; Deloitte Center for the Edge, 2013; Wood & McConney, 2018; Bărbută-Misu et al., 2019; Horváthová et al., 2021) the most important indicators are considered to be indicators of profitability (Return on Sales – ROS; Return on Assets – ROA and Return on Equity – ROE) showing the result of utilizing the company's potential.

According to Deloitte Center for the Edge (2013) the most effective, broadly available financial measure to assess company performance is ROA. Očko (2009) explains that the standard size of ROA varies from industry to industry, but it is generally considered that ROA must be higher than the interest rate on long-term investments in the bank or risk-free investments (such as treasury bills). In practice, it is evident that capital flows to where ROA is higher. If management utilizes its assets in projects that more optimally create value, ROA will rise, but if resources are used in projects that consistently yield little value, ROA will stagnate (Deloitte Center for the Edge, 2013).

We begin the profitability analysis with two basic indicators: (1) ROS[5] and ROA[6]. As we can see in Table 1, in 2020 the company had a solid ROA of 5.6 and a ROS of 11.7, with sales revenues amounting to 13.5 million KM. Total assets turnover ratio was relatively low (0.48), which was due to holding a large amount of other current assets (60.5% of total assets) not related to the core business. In the following two years (2021-2022), there was a significant decrease in sales revenue (on average by

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[1] Intermediary Agency for IT and financial services ad Banja Luka (abbreviated APIF) established by the Government of Republic of Srpska in order to establish and manage business registers.

[2] Financial-intelligence Agency (abbreviated FIA) established by the Government of Federation Bosnia and Herzegovina in order to establish and manage business registers.

[3] Although more relevant conclusions could be derived if the analysis had been based on a longer period, i.e. for at least a five years period, due to the unavailability of data for the years preceding the pandemic, the research has been limited to only three years period.

[4] The industry here refers to the activity of stone fruits production, not to the whole agricultural production in Bosnia and Herzegovina.

[5] Return on sales (ROS), or net profit margin, is calculated as the ratio of net profit to sales revenue.

[6] Return on Assets (ROA) is calculated as the ratio of net profit and total assets. There is another way to achieve the same result: ROA = ROS * Assets turnover ratio.

9.34%). This mostly reflected in the decrease in ROS (from 11.7 to 3.85 in 2022), as well as in the decrease in ROA (from 5.61 to 1.46 in 2022). Additionally, there was a decrease in the assets turnover ratio due to the increase in assets (mostly due to investment in land acquisition).

Table 1. Important parameters for the company Agroimpex Nova Banja Luka for the period 2020-2022

Title	2020	2021	2022
Sales Revenue	13.536.783 KM	8.496.862 KM	11.125.306 KM
Net Profit	1.583.450 KM	296.789 KM	428.294 KM
Revenue growth in relation to the previous year	-19,5%	-37,2%	30,9%
Return on Sales (ROS)	11,70	3,49	3,85
Assets	28.221.830 KM	28.776.608 KM	29.256.199 KM
Return on Assets (ROA)	5,61	1,03	1,46
Assets Turnover Ratio (ATR)	0,48	0,30	0,38
Equity	19.576.323 KM	19.390.815 KM	18.855.511 KM
Return on Equity (ROE)	8,09	1,53	2,27

Source: Author's calculations and presentation of data

As seen from Table 1, the revenue of the largest fruit producer significantly decreased during the pandemic. In 2022, this revenue was 18% lower than at the beginning of the pandemic. Taking into account other revenues, which amounted to 2 million KM in 2020 but were only 50 thousand KM at the end of 2022, it can be concluded that the total revenues decreased by as much as 28%. The net profit during the same period declined from 1.6 million KM to 428 thousand KM, i.e., by 73%. However, considering that sales revenue dropped by 37% in 2021, only to then increase by 31%, we can conclude that the company started to recover after the pandemic shock that occurred during 2021. Given that the pandemic has passed, it is expected that this positive trend will continue, with the main question what is the realistically expected revenue growth?

To reach the answer it is important to analyze the market, i.e., competitors, in order to determine which ROA values are expected and acceptable. In Table 2, we provide the profitability analysis of the observed company in the context of the entire industry sector, as well as specifically comparing it with the top three competitors in the RS. We sort the companies by the size of their sales revenue.

Table 2. Comparison of achieved sales revenue, profitability, and asset turnover ratio of Agroimpex Nova company with its 3 top competitors and the industry average in 2022

	Sales Revenue	ROA	ROS	Asset turnover
Agroimpex Nova, Banja Luka	11,125,306 KM	1.46	3.85	0.38
DMS-Company, Bijeljina	3,865,384 KM	2.20	1.60	1.37
Gilmark, Gradiška	2,241,807 KM	2.80	2.20	1.26
Fruit Eco, Gradiška	1,333,422 KM	0.50	4.00	0.13
Average, B&H	**612,663 KM**	**1.20**	**4.40**	**0.27**

Source: Author's calculations and presentation of data

First, we notice that the average ROS in the observed industry is 4.40, the asset turnover ratio is 0.27, and the average ROA (the product of ROS and asset turnover ratio) is 1.20. We can conclude that the observed industry sector is low-profitability, and none of the top 4 companies in the RS achieves a ROS higher than the industry average.

By the size of sales revenue, Agroimpex Nova ranks first, second in ROS, and third in both ROA and asset turnover ratio. The reason for this can be found, as mentioned above, in the low asset turnover. The problem with comparing the largest company with the top three competitors might be that all three companies are significantly smaller in size. The study by Achim et al. (2021) showed that, in Romania, small agricultural companies during the pandemic showed better financial performance than a number of large and medium-size enterprises. Therefore, it would be more reasonable to look for the best practices in similar companies from the region that achieve better profitability and asset management indicators.

Agroimpex Nova did manage to recover in 2022 (achieving a sales growth of 31%) after a sales decline in 2021 (by 37%), but this success must also be verified in relation to the market growth rate. This is only a success if the entire market is growing at a slower rate.

Table 3. Market information for the period 2020 – 2022

	Revenues growth rate		-2.00
	2020	**2021**	**2022**
Total Market Revenue	29,867,883 KM	22,506,224 KM	28,795,152 KM
Revenue growth in relation to the previous year	-8.6%	-24.6%	27.8%
Agroimpex's Market Share (%)	45.3%	37.8%	38.6%

Source: Author's calculations and presentation of data

The entire market experienced a decline of 2.0% during the observed period, with a growth of 27.8% in the last year. Considering that Agroimpex Nova's sales decline was higher during the observed period, the company lost 6% of market share. During the observed period, Agroimpex Nova had a significantly greater decrease in total revenues (-28%) compared to current assets (-5.2%), while total assets increased by 3.6%. Therefore, it can be concluded that the COVID-19 pandemic led to a reduction in business activity (asset turnover ratio) and the company's inability to leverage its assets to generate revenue and profit. This trend undoubtedly contributed to weaker profitability, but the causes of the decline might not be solely external factors, as the two largest competitors recorded significantly higher sales growth rates during the same period: 20.90% (DMS-Company, Bijeljina) and 38.85% (Gilmark, Gradiška). Although the size of the company could be one of the relevant factors, it is not unreasonable to conclude that the problem could also lie in inadequate current assets management[7], which slows down the turnover of total assets and thereby reduces ROA. This complies with Očko (2009) who noticed that asset turnover ratio and return on investment are the most important indicators, the decrease of which can predict an upcoming business crisis quite early.

To complete the story on profitability, it is necessary to include Return on Equity (ROE)[8]. According to the DuPont model, ROE is the product of ROA and the capital multiplier, which indicates the proportion of equity in total assets. The lower the proportion of equity in total assets, the higher the capital multiplier, resulting in higher return on equity. In our case, the proportion of equity is twice as high as debt, leading to lower returns on equity.

In 2020, the owner earned 8.07 KM on 100.00 KM of invested equity, while in 2022, they earned only 2.28 KM, which is a 77% decrease. Since the debt has increased in the meantime and the proportion of equity in total assets has decreased, the main reason for this decrease in ROE is the lower ROA. Due to the lower ROA and higher debt obligations, whose interest rate is certainly higher than ROA[9], there is a negative effect of financial leverage that will continue to adversely affect ROE in the future.

Table 4. Comparison of ROE and equity share of Agroimpex Nova company with its 3 top competitors and the industry average in 2022

	ROE	Equity share
Agroimpex Nova, Banja Luka	*2.30*	*0.64*
DMS-Company, Bijeljina	0.44	0.05
Gilmark, Gradiška	5.00	0.55
Fruit Eco, Grediška	0.80	0.61
Industrial average, B&H	**6.90**	**0.06**

Source: Author's calculations and presentation of data

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[7] Rational asset management is reflected in a higher revenue growth rate compared to total asset growth.

[8] Return on Assets (ROE) is calculated as the ratio of net profit and total equity.

[9] According to CBBH - Annual report 2022, nominal interest rate on loans for non-financial companies was approximately 4.2% at the end of 2022.

To objectively assess the investment position of the owner of this company, it would be good to know if they earn the same, less, or more than others in their industry. We will know this when we calculate ROE in the same way for other competitors in the market. As we can see, Agroimpex Nova has the highest equity share, but modest ROE especially in comparison to the industry average. The fact is that using borrowed capital compels a company to efficiency, while using its own capital tends to inertia. However, one should be very cautious in interpreting the results because improvements in ROE can arise not only from better business performance (higher profits or better total asset turnover), but also from an increase in debt. The capital multiplier can turn average earnings into above-average returns to owners simply by increasing the use of borrowed funds, but only if there is a positive effect of financial leverage - if ROA is higher than the average interest rate on borrowed funds (Meigs & Meigs, 1999).

To keep financial leverage under control, Očko (2009) suggests to use several other indicators such as: debt ratio[10], equity financing ratio[11], debt factor[12] and interest coverage ratio[13]. These indicators should also be observed over a longer period to better understand the relationships and trends over the years and to predict future movements more easily based on historical data.

Table 5. Debt ratio, equity ratio and debt factor for the company Agroimpex Nova Banja Luka for the period 2020-2022

	2020	2021	2022
Assets	28,221,830 KM	28,776,608 KM	29,256,199 KM
Equity	19,576,323 KM	19,390,815 KM	18,855,511 KM
Liabilities	8,645,507 KM	9,385,793 KM	10,400,688 KM
Profit before taxes	1,759,389 KM	329,766 KM	475,882 KM
Interest cost	172,534 KM	299,420 KM	287,547 KM
Net profit	1,583,450 KM	296,789 KM	428,294 KM
Depreciation	735,349 KM	1,472,021 KM	1,481,155 KM
Debt ratio	**0.31**	**0.33**	**0.36**
Equity ratio	**0.69**	**0.67**	**0.64**
Debt factor	**3.73**	**5.31**	**5.45**
Interest coverage ratio	**11.20**	**2.10**	**2.65**

Source: Author's calculations and presentation of data

Earning power has certainly improved in 2022 compared to the previous year, but debts are also increasing. At this point, it takes almost 5.5 years to cover all the debts with the earned income. In 2020, the interest coverage ratio was over 11, and now the situation is significantly worse, both due to the sales decline and increased indebtedness. The cost of capital currently being paid is unfavorable and leads to erosion of business profits and lower ROE. The company can still service its debt, but the financial leverage is working against it.

Another very important piece of information is the relationship between ROE and EBITROA[14]. As long as ROE exceeds EBITROA, leveraging is beneficial (Očko, 2009). As we can see in the Figure 1, ROE exceeded EBITROA only in 2020, but as sales declined, so the relationship between ROE and EBITROA deteriorated.

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[10] *Debt ratio = total liabilities / total assets*. This is a good indicator for monitoring the growth of indebtedness over several years. If it consistently increases, there is a greater risk that the positive effects of financial leverage will turn against the company.

[11] *Equity ratio = equity / total assets*. It is the opposite of debt ratio and it shows how much of the assets are financed by the company's own resources. Together, these two indicators add up to 1.

[12] *Debt factor = total liabilities / (net profit + depreciation)*. The debt factor tells us how many years it takes to cover total liabilities from the earned profit, increased by depreciation.

[13] *Interest coverage ratio = (profit before tax + interest) / interest*. This ratio shows how many times the interest is covered by EBIT. If this ratio is 1, only creditors are making money, and if it is less than 1, a company is unable to cover the interest on the debt.

[14] *EBITROA = (EBT + Interest) / Total Assets*. EBITROA is similar to ROA, except here we use earnings before interest and taxes (EBIT).
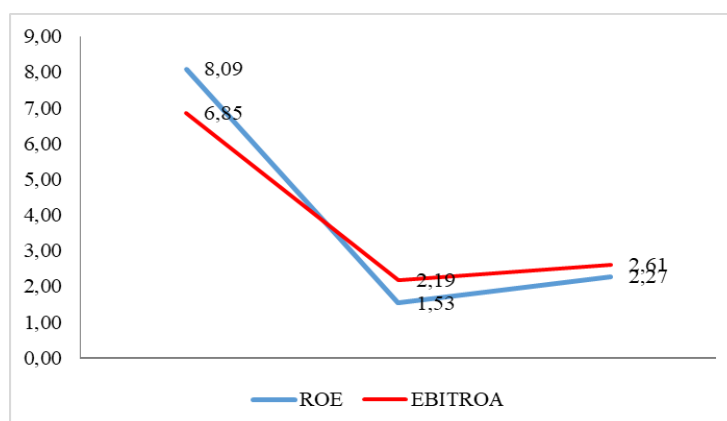
Figure 1. Comparison between ROE and EBITROA for the period 2020-2022
Source: Author's calculations and presentation of data

Based on the balance sheet data, it can be concluded that the company increased its debt in order to invest in long-term assets (acquisition of land), but due to the pandemic crisis and a sharp decline in revenue, this has also led to a deterioration of leverage indicators.

Liquidity as a controlling tool

Even though there are several levels of liquidity, we will focus on two indicators that are most commonly used in literature and practice: the current ratio[15] and the quick ratio[16]. While in literature it is often mentioned that the current ratio should be around 2 and the quick ratio around 1, in practice, this is often not the case. Therefore, the industry average is typically used as a standard measure, which is a more objective benchmark in a specific case.

Table 6. Comparison of the current ratio and quick ratio of Agroimpex Nova company with its 3 top competitors and the industry average in 2022

	Current ratio	Quick ratio
Agroimpex Nova, Banja Luka	*4.54*	*3.92*
DMS-Company, Bijeljina	0.97	0.66
Gilmark, Gradiška	1.23	1.23
Fruit Eco, Gradiška	0.51	0.10
Industrial average, B&H	**0.66**	**0.53**

Source: Author's calculations and presentation of data

Liquidity indicators of the company are not only better than the average and competition but also have increased during the period. One of the reasons is a significant reduction in payables, as well as the replacement of short-term loans with long-term ones. However, excessive liquidity can be a double-edged sword, especially if it is not serving to increase profitability.

In addition to liquidity ratios, there is another approach, based on the average number of days for collecting receivables and servicing payables.

Table 7. Overview of the average 'days sales outstanding' and 'days payables outstanding' of the company Agroimpex Nova, 2020-2022

	2020	2021	2022
Days sales outstanding	65.08	47.00	51.41
Days payables outstanding	150.09	174.84	137.13

Source: Author's calculations and presentation of data

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[15] *Current ratio = current assets / current liabilities*. If this ratio is greater than 1, it is considered that the company has a liquidity reserve in form of net working capital. It is desirable that this ratio is 2.

[16] *Quick ratio = (cash + receivables) / current liabilities*. It is desirable that this ratio is 1.

From the available data, we can see that the company collects its receivables from customers 2.3 to 3.7 times faster than it pays its suppliers, indicating its exceptional negotiating power and, consequently, high liquidity. Therefore, the fact that despite these conditions, the company records unsatisfactory ROA and ROE is even more concerning. However, given the circumstances caused by the COVID-19 pandemic, it is possible that the company objectively was not able to profitably utilize its liquid assets. As a consequence, the asset turnover ratio, ROA and ROE have declined.

Business performance indicators in broader context

To consider a broader context, we are monitoring a total of 4 companies (Agroimpex Nova and its 3 top competitors in the RS), which cover 64% of the growing pome and stone fruits market. We use competitors sorted by sales revenue to determine industrial concentration using Pareto's principle. In our case (Table 8), 4 companies from the RS represent 8.5% of a total number of companies, but generate 64% of the industry's sales revenue. We can conclude that the influence of the largest players is significant, indicating strong industrial concentration. The total market size is "valued" at 28.8 million KM, with the top four companies from RS generating revenues of 18.5 million KM.

Table 8. Comparison of sales revenue of Agroimpex Nova company with its 3 top competitors and the total market for the period 2020-2022

Sales Revenue	2020	2021	2022	Growth rate
Total industry, B&H	29,867,883 KM	22,506,224 KM	28,795,152 KM	-1.81
Agroimpex Nova, Banja Luka	*13,536,783 KM*	*8,496,862 KM*	*11,125,306 KM*	*-9.34*
DMS-Company, Bijeljina	2,644,464 KM	855,139 KM	3,865,384 KM	20.90
Gilmark, Gradiška	1,162,726 KM	1,941,551 KM	2,241,807 KM	38.85
Fruit Eco, Grediška	1,673,047 KM	1,812,193 KM	1,333,422 KM	-10.73
Other companies	10,850,863 KM	9,400,479 KM	10,229,233 KM	-2.91

Source: Author's calculations and presentation of data

Another important piece of information is market share. Increasing market share is highly desirable and a sure sign of progress. Its growth typically strengthens efficiency and profitability economies of scale come into play, and suppliers usually become more tolerant when negotiating terms of collaboration. Thus, it is no wonder that increasing market share is considered an absolute imperative when setting business goals.
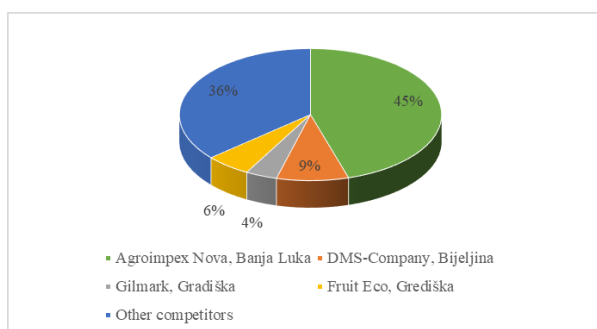

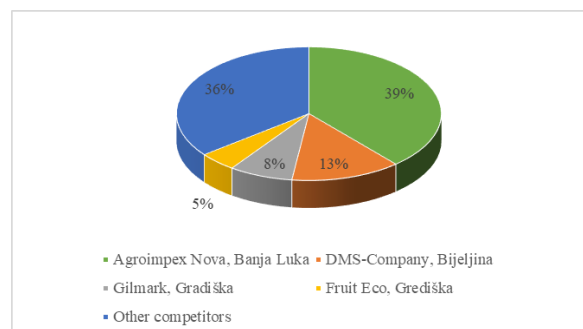Figure 2. Market Share of Agroimpex Nova and its competitors in 2020 (source: the author)

Figure 3. Market Share of Agroimpex Nova and its competitors in 2022 (source: the author)

Agroimpex Nova had a 45% market share in 2020, which decreased to 39% by the end of 2022. It is interesting to note that other companies still hold 36% of the market, while the two top competitors from the RS have increased their market shares by 4% each. The explanation for such changes can be found in the company's export orientation. Due to better earning opportunities, the company has been oriented towards exports in previous years, with a significant foreign market being Russia. With the pandemic, export opportunities have decreased, prompting the company to find other markets for selling its products. It is possible that turning to domestic or other markets involves selling at lower prices, which

understandably led to a decrease in revenue. Although Agroimpex Nova remains the strongest company in the market, the fact remains that the competition is growing while it weakens. It is evident that the observed company is still the largest in terms of revenue, but its growth rate is lower than the industry average, especially compared to these two competitors who significantly increased their market shares during the observed period. Controlling could help them calculate, based on this data, at what rates their revenue should grow to retain and/or regain lost market share. This information serves as the basis for developing operational and strategic plans (Očko, 2009).

Productivity as a controlling tool

To understand productivity performance, it is useful to compare the number of employees, revenue per employee, and profit per employee. If everyone operates in the same market, selling similar products, it is important to identify who is more productive. Being more productive means achieving better results with fewer employees and having more efficiently organized business processes.

Table 9. Comparison of the number of employees and productivity indicators of Agroimpex Nova with the top 3 competitors and the industry average in 2022

	Number of employees	Sales revenue per employee	Net profit per employee
Agroimpex Nova, Banja Luka	58	191,816 KM	7,384 KM
DMS-Company, Bijeljina	5	773,077 KM	11,663 KM
Gilmark, Gradiška	1	2,241,807 KM	49,310 KM
Fruit Eco, Gradiška	17	78,437 KM	3,102 KM
Total Industry, B&H	**149**	**193,256 KM**	**1,556 KM**

Source: Author's calculations and presentation of data

Agroimpex Nova is a company that generates the highest sales revenue in the market but also employs the highest number of workers (almost 40% of the total number of employees in this industry). Revenue per employee is below the industry average and significantly lower compared to the two top competitors in the RS (DMS-Company and Gilmark). The explanation for such high productivity of the competition can probably be found in the fact that these companies employ a large number of seasonal workers, thereby reducing labor costs and influencing such high rates of profit per employee.

While a decline in sales primarily affects productivity, such a large company is expected to better utilize economies of scale and achieve better results per employee. It is certain that the COVID-19 pandemic had a very unfavorable effect on productivity due to the decrease in sales revenue. However, revenues were declining faster than expenses, meaning that the company failed to respond to the pandemic crisis with better cost rationalization. Perhaps, modernizing production processes, improving organization, and automation could contribute to increased productivity and thus prevent adverse effects of new crisis in the future.

To draw accurate conclusions, it is far more reasonable and appropriate to seek benchmarks in similar companies from the region that are closer to this company in terms of revenue size, number of employees, and market orientation. Comparing achieved performances with local companies engaged in the same business, but significantly different in terms of size, production organization, and sales market from the observed company, obviously cannot be a sufficiently high-quality source of information for controlling.

CONCLUSION

Financial statements and the indicators derived from them are invaluable tools of controlling, which, on the other hand, is an indispensable management tool. However, it is essential to have the skill to interpret financial information and place it in a broader context to better manage risks and anticipate the future. By using various indicators, benchmarking, and trend analysis, controlling helps to identify the causes leading to the deterioration of performance indicators, thus representing an indispensable tool for strategic and business planning and decision-making.

Numerous studies have shown the contribution of controlling to successful business operations and risk management, especially in turbulent times. When resources are limited and there is uncertainty in both the internal and external environment, it is particularly important to know how to use what is available and do so rationally, respecting the principles of economy, efficiency, and effectiveness.

This is equally important for agricultural enterprises as it is for other business entities, perhaps even more so given the multiple risks they face. The case study presented in this paper illustrates that no matter how strong and dominant companies may be in the market, they are also at greater risk of losing out during times of crisis and uncertainty.

The case study shows that the largest producer of stone fruits in Bosnia and Herzegovina, the company Agroimpex Nova, suffered numerous negative effects due to the COVID-19 pandemic. Compared to the beginning of the pandemic (2020), by the end of 2022, there was a decrease in: total revenue by 28%; net profit by 73%; domestic market share by 6%. Due to reduced business activity, there was a slower turnover of assets, which reflected in the decrease of ROA and ROE indicators. All of this adversely affected the financial leverage and the productivity of the company. Considering that the most significant deterioration occurred in 2021 when the pandemic was at its peak, and the company showed signs of recovery in 2022 when the pandemic began to subside, it is evident that the pandemic was the primary cause of unfavorable business performance indicators. However, the deterioration of these indicators was more drastic compared to the case of the top 3 competitors and the industry average.

Therefore, the study also confirmed the findings of other research and demonstrated that large firms adapt to changes more difficult than smaller ones and that ROA is an indicator that points to deeper structural issues that further reflect on other performance metrics. That is precisely why effective management of limited resources is of paramount importance, with controlling being one of the key tools enabling management to detect the initial signs of a business crisis early on.

REFERENCES

Achim, M.V., Safta, I.L., Văidean, V.L., Mureșan, G.M., & Borlea, N.S. (2022). The impact of covid-19 on financial management: evidence from Romania. *Economic Research-Ekonomska Istraživanja*, 35(1), 1807-1832. DOI: https://doi.org/10.1080/1331677X.2021.1922090

Bărbută-Misu, N., Madaleno, M., & Ilie, V. (2019). Analysis of risk factors affecting firms' financial performance - Support for managerial decision-making. *Sustainability*, 11, 4838, 1-19. DOI: https://doi:10.3390/su11184838

Bobitan, N., Dumitrescu, D., & Burca, V. (2023). Agriculture's efficiency in the context of sustainable agriculture - A benchmarking analysis of financial performance with data envelopment analysis and malmquist index. *Sustainability*, 15, 12169, 1-27. DOI: https://doi.org/10.3390/ su151612169

Bogetoft, P. (2012). *Performance Benchmarking: Measuring and Managing Performance*. New York: Springer.

Bragg, S.M. (2002). *Business Ratios and Formulas: A Comprehensive Guide*. New Jersey: John Wiley & Sons, Inc.

Bragg, S.M. (2004). *Controller's guide to planning and controlling operations*. New Jersey: John Wiley & Sons, Inc.

Csikósová, A., Čulková, K. & Janošková, M. (2022). Controlling tools use in business processes management. *TEM Journal*, 11(1), 356-366. DOI: https://doi.org/10.18421/TEM111-45

Deloitte Center for the Edge. (2013). Success or struggle: ROA as a true measure of business performance. *Report 3 of the 2013 Shift Index series*. Deloitte University Press. https://www2.deloitte.com/us/en/ insights/topics/operations/success-or-struggle-roa-as-a-true-measure-of-business-performance.html

Eldridge, S., van Iwaarden, J., van der Wiele, T., & Williams, R. (2014). Management control systems for business processes in uncertain environments. *International Journal of Quality and Reliability Management*, 31(1), 66-81. DOI: https://doi.org/10.1108/IJQRM-03-2012-0040

Gloy, B.A., & LaDue, E.L. (2003). Financial management practices and farm profitability. *Agricultural Finance Review*, 63(2), 157-174. DOI: https://doi.org/10.1108/00215060380001147

Gottlieb, U., Hansson, H., & Johed, G. (2021). Institutionalized management accounting and control in farm businesses. *Scandinavian Journal of Management*, 37(2). DOI: https://doi.org/10.1016/j.scaman.2021.101153

Horváthová, J., Mokrišová, M., & Vrábliková, M. (2021). Benchmarking - A way of finding risk factors in business performance. *Journal of Risk and Financial Management*, 14(221), 1-17. DOI: https://doi.org/10.3390/jrfm14050221

Khudyakova, T., Shmidt, A., & Shmidt, S. (2019). Implementation of controlling technologies as a method to increase Sustainability of the enterprise activities. *Entrepreneurship and Sustainability Issues*, 7(2), 1185-1196. DOI: http://doi.org/10.9770/jesi.2019.7.2(27)

Meigs, R.F., & Meigs, W.B. (1999). *Račnovodstvo: Temelj poslovnog odlučivanja.* Deveto izdanje. Zagreb: Mate.

Morales, J., & Pezet, A. (2012). Financialization through hybridization: The subtle power of financial controlling. *In Finance: The Discreet Regulator* (pp.19-39). Palgrave Macmillan, London. DOI: https://doi.org/10.1057/9781137033604_2

Očko, J., & Švigir, A. (2009). *Kontroling, upravljanje iz backstagea*. Zagreb: Knjiga print d.o.o.

Pisar, P., & Bilkova, D. (2019). Controlling as a tool for SME management with an emphasis on innovations in the context of Industry 4.0. *Equilibrium, Quarterly Journal of Economics and Economic Policy*, 14(4), 763-785. DOI: https://doi.org/10.24136/eq.2019.035

Senftlechner, D., & Hiebl, M.R.W. (2015). Management accounting and management control in family businesses: Past accomplishments and future opportunities. *Journal of Accounting & Organizational Change*, 11(4), 573-606. DOI: https://doi.org/10.1108/JAOC-08-2013-0068

Spickova, M., & Myskova, R. (2015). Costs efficiency evaluation using life cycle costing as strategic method. *Procedia Economics and Finance*, 34, 337-343. DOI: https://doi.org/10.1016/S2212-5671(15)01638-X

Sprinkle, G.B. (2003). Perspectives on experimental research in managerial accounting. *Accounting, Organizations and Society*, 28(2-3), 287-318. DOI: https://doi.org/10.1016/S0361-3682(01)00058-7

Stefko, R., Gallo, P., Matusikova, D., & Molcak, T. (2019). Use of controlling in tourism sphere as a modern efficient management tool. In: Štetić, S. (Eds.), *Modern management tools and economy of tourism sector in present era* (pp.509-526). DOI: https://doi.org/10.31410/tmt.2019.509

Vanhuyse, F. (2016). The impact of management practices on financial performance: evidence from farm businesses in England. [Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy]. School of Agriculture, Policy and Development, University of Reading. https://core.ac.uk/download/pdf/74206889.pdf

Wheeling, B. (2008). *Introduction to Agricultural Accounting.* New York: Thomson Delmar Learning.

Wilson, R.H., Charry, A.A., & Kemp, D.R. (2005). Performance indicators and benchmarking in Australian agriculture: synthesis and perspectives. *Extension Farming Systems Journal*, 1(1), 45-57.