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NON-TRADITIONAL METHODS FOR ASSESSING THE FINANCIAL SITUATION OF A FARM

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Abstract. The main objective of assessing a company's financial state is predicting its future development. In agriculture, failure factors differ from other industries, including high debt and interest rates, lower profitability during recessions, and environmental impacts like droughts and floods. To ensure market survival, modern management of agricultural enterprises is crucial. Business analysis generates data for this. A financially healthy enterprise is profitable, efficiently uses capital, and repays obligations on time. Various methods measure financial performance, chosen based on time frame, purpose, data nature, and sources. Complex measurements should be balanced. Financial issues arise from internal and external factors, often due to environmental changes. In agriculture, understanding success factors is vital for long-term survival as food demand increases. Failure factors are diverse, spanning economic (profitability, liquidity) and non-economic (planning, decision-making). Mismanagement and external factors can lead to farm failure. In this changing environment, success requires future-focused financial development, making retrospective analysis insufficient. Predictive models tailored to each country's specifics are essential for agricultural sustainability. This study explores such models and their relevance for agricultural financial sustainability.

Keywords*: EVA, finance, WACC, NOA.*

JEL Classification: G5

INTRODUCTION

Financial management is a key aspect of a company's existence, necessitating constant monitoring of internal and external factors. These factors impact tools, goals, and financial resource structure adjustments. For effective adaptation, tools evaluating operational efficiency are essential. Traditional performance evaluation tools like profitability, liquidity, and indebtedness indicators are widely used but don't align with the growing market value trend. Non-traditional methods of assessing the financial situation of agricultural enterprises are increasingly at the forefront of interest, as classic financial indicators may prove to be insufficient for a comprehensive assessment of the efficiency and sustainability of these enterprises. One perspective method is EVA, or Economic Value Added, which brings a new dimension to financial analysis. Companies shift towards economic

value indicators, reflecting benefits for owners. Economic value added (EVA) is a prominent concept.

This study focuses on evaluating the economic performance of agricultural firms, centering its analysis on the economic value added (EVA) metric. Recognizing the need for a more nuanced assessment, the research goes beyond conventional financial indicators to provide a holistic view of a firm's capacity to generate economic value exceeding the cost of capital. The primary aim is to propose targeted measures for enhancing the overall performance and financial situation of agricultural enterprises. By leveraging EVA, the study aims to pinpoint areas for improvement and offer insights that contribute to sustainable economic value creation. This research not only contributes to academic knowledge but also provides practical guidance for stakeholders, including investors, managers, and policymakers, fostering informed decision-making for the long-term resilience and growth of the agricultural sector.

1. LITERATURE REVIEW

The financial valuation of a company aims to express its value using a certain amount of money. The potential of the enterprise is valued with a monetary equivalent. The resulting value is usually based on the use of multiple valuation methods. There are three ranges of valuation methods:

1) methods based on the analysis of company revenues;
2) methods based primarily on the analysis of current market prices;
3) methods based on the valuation of individual property items that make up the business; largely, in this case, it is a cost valuation.

The choice of method depends on the functions that the assessment sets. It is most appropriate to use all three basic methods, and the resulting assessment is a creative synthesis of their results (Kislingerová, 2001). The individual methods (techniques) of value calculation that are used should then correspond to the given incentive for valuation and the basic approach to valuation chosen accordingly. In addition to this criticism, another trend is being observed in the area of company performance evaluation – the effort to express long-term effects resulting from the current development of the company. The problem with the economic result as an indicator is the fact that, regardless of whether its determination is based on the accrual or monetary principle, it provides information primarily about current consequences or consequences soon and is therefore only suitable for the operational management of business activities. However, it does not provide information about developments in the long term. For this reason, a number of synthetic performance measures began to be developed, which try to include in one indicator a wide range of activities affecting the functioning of the company, especially in the long term, if possible, throughout its existence (Wagner, 2009).

1.1. Modern Methods of Assessing the Company's Financial Situation

Amidst criticism of traditional metrics, novel approaches to measuring and overseeing business performance are emerging, gradually finding application in real-world operations. Recent times have witnessed an increasing emphasis on

gauging performance based on the company's market value growth. Modern performance measures should fulfil these four key criteria:

1. The first criterion demands a robust link between the indicators and the company's shareholder value, substantiated by statistical analyses.
2. The second criterion calls for the incorporation of a wide spectrum of information and data derived from accounting, encompassing metrics rooted in financial statements. This aims to streamline calculations while enhancing compatibility with prevailing practices.
3. The third criterion necessitates overcoming past reservations about the effectiveness of accounting-based financial metrics. It is vital for these indicators to factor in risk assessment and consider the extent of capital commitment.
4. The fourth criterion entails that modern metrics facilitate both performance assessment and company valuation simultaneously (Maříková, 2001).

Kislingerová (2001) supplements the criteria with the following elements:

- the concept of the cost of lost opportunities (so-called opportunity cost) in the form of price or cost of capital – WACC – in performance measurement.
- Uses operating profit. (NO PAT)

Additional requirements for modern indicators are brought by Pavelková and Knápková (2009):

- The indicator should enable easy and clear identification of its connection with all levels of management.
- The last requirement is that the indicator contributes to the support of value management.

Finding performance indicators that meet all of the above requirements is very challenging. Modern financial measures used to evaluate business performance include:

- economic value added (EVA),
- market value added (MVA),
- cash value added (CVA) and others.

Contemporary approaches place a strong emphasis on creating value for stakeholders, going beyond mere assessments of asset and liability levels over time. Although these techniques have their advantages and disadvantages, it is commonly agreed that their extensive implementation in the Czech market is restricted. For example, economic value-added faces difficulties due to its reliance on public trading, which is uncommon in the Czech Republic. Traditional financial analysis encounters challenges in identifying the specific factors driving changes in indicators, such as differentiating between an improved market position and increased employee motivation (Růčková, 2015).

Furthermore, the economic value added (EVA), market value added (MVA), and cash value added (CVA) methods are described in more detail in this work.

1.1.1. Economic Value Added (EVA)

Economic value added (EVA™) emerged as an alternative to conventional earnings per share, gaining prominence as a more accurate measure of shareholder value. Coined by financial consultants Stern Stewart & Co. in 1991, EVA was touted as a groundbreaking innovation for gauging corporate performance in the late 20th century. However, empirical support for its claim as the ultimate performance measure is limited. A study conducted in 1997 examined EVA performance across 566 US companies, comparing its informational value against accounting profits and residual income. The findings revealed three key takeaways: (1) the connection between improved EVA performance and higher stock returns isn't as flawless as proponents suggest; (2) EVA is more potent in explaining stock movements compared to traditional accounting profit measures, yet accounting earnings still offer noteworthy additional information beyond EVA; and (3) conceptually akin to residual income, EVA is empirically comparable to this metric (Issham et al., 2008).

1.1.2. Benefits of EVA

EVA closely aligns with net present value, adhering to the theory that enterprise value increases when projects with positive NPV are undertaken. It encompasses operational, investment, and financial decisions, reflecting profit, capital profitability, and cost of capital. EVA integrates company activities and participants to enhance invested fund value. It is applicable at various management levels, aligning strategic and operational management. EVA signifies core business contribution, separating from exceptional factors. It transforms intra-company value management in centers influencing asset use. It is useful in investment decisions and valuation and produces results like discounted cash flow. EVA is simpler than other indicators, offering clear economic insight. It serves as a tool for measuring and managing company performance, motivating employees, valuation, and investment evaluation. Common profitability indicators lack risk consideration, time value of money, and share price connection. EVA addresses this gap, demonstrating a strong correlation with share value, credibly signalling value creation for shareholders (Miciuła, Kadłubek, & Stępień, 2020).

1.1.3. Disadvantages of EVA

Calculating the cost of capital, especially equity, can be complex. Critics argue that it lacks inflation adjustment. Many assess companies based on EVA changes, avoiding future revenue estimation, unlike the DCF method. While advantageous, it may lead to value reduction or short-term EVA rise through limited investments. If EVA growth coincides with a higher cost of capital (due to risk or capital structure changes), the value could drop despite EVA increase (Türegün, 2022).

The indicator only considers realized cost/income in a period, excluding expected future benefits directly or through the present value of assets/liabilities. It cannot solely gauge strategic company development. However, enterprise value (similar to DCF valuation) is determined via invested capital, normal EVA, and

expected EVA changes. Both methods yield identical business value results (Onuferová, Čabinová, & Dzurov Vargová, 2020).

2. METHODOLOGY

2.1. Basic Quantities for Calculating EVA

As already mentioned, the following three quantities need to be determined to calculate the economic added value:

- profit from the operational activity of the company – NOPAT;
- capital tied up in assets that serve the operational activities of the company – Capital;
- weighted average cost of capital – WACC.

NOPAT is derived solely from a company's operational activity, serving its core purpose. Non-operational activities are those unrelated to the core purpose. Operating assets support operational activities; non-operating assets do not. EVA uses financial statement data, often inadequate due to creditor-focused accounting and short-term results. Accounting is static, reflecting past facts, but investors need future returns and risks. Thus, the accounting model must adapt to shareholder needs and data consistency for profitability assessment. Developed in the US, EVA aligns with the US GAAP, requiring an understanding of differences from Czech regulations (Subedi & Farazmand, 2020).

2.1.1. Transformation of accounting data into an economic model

Company financial statements provide us with accounting data. However, this must be modified when calculating the economic value added, and an economic model should be created from the accounting model. The reason for the modification is the fact that the current accounting system is mainly oriented towards creditors. In order to comply with accounting principles, investors are therefore not presented with the real assets and liabilities of the company – all items are valued in the accounting according to the method of acquisition at acquisition or own costs (Sharma & Kumar, 2010).

Another reason for transforming economic data is the requirement for consistency of the data needed to measure performance – that is, consistency between economic profit, operating assets, and cost of capital. According to Mařík & Maříková (2005), in this case, it is as follows:

- Operating assets were defined according to how we understand the basic activities of the company (core business). Above all, it is about whether and to what extent to include long-term and short-term financial assets in operating assets.
- Following the previous point, costs and revenues related to operational assets were correctly defined.
- After defining the operative assets, the financing structure was adjusted and the costs of individual case.
- Financial resources were determined.

It is, therefore, clear from the above that before calculating the EVA indicator, the data from the financial statements will need to be transformed. The authors of the EVA concept use a list of 164 adjustments to accounting statements that must be made to modify the accounting model to an economic model. However, most of these modifications are trade secrets, so we will only focus on the modifications that are essential. Data transformation should include four steps.

2.1.2. Conversion to operating assets (conversion to NOA)

During this phase, the analyst adjusts the accounting portrayal of assets to isolate operating assets. This process involves excluding non-operating assets, such as those unrelated to the core business (e.g., non-relevant investments, unfinished projects), and incorporating unreported assets where lessees bear predominant benefits and risks tied to leasing (e.g., financial leasing). These adjustments yield the net operating assets (NOA) indicator value (Wallace, 1997).

2.1.3. Conversion of financial resources

The purpose of this conversion step is to supplement the reported sources of funding so that they provide a complete and realistic picture of funding. The key adjustments in this step are mainly related to leasing and other forms of rental, adjustments to reserves and adjustments to short-term non-interest-bearing liabilities (Dobrowolski et al., 2022).

2.1.4. Tax conversion

Tax conversion consists of the adjustment of taxes resulting from the difference between the economic result from the operating activities of the company (NOPAT) and the accounting economic result. During the calculation, the amount of the tax rate in the given year must be considered (Eugster & Wagner, 2020).

2.1.5. Shareholder conversion

In connection with adjustments to items on the asset side (for example, the inclusion of some items of intangible assets in NOA), it is necessary to make corrections related to, for example, revaluation also on the liability side. The balance sheet balance is generally balanced through equity items; we refer to the increase in equity capital in the adjusted balance sheet as equity equivalents.

2.1.6. Calculation of NOA operational assets

When calculating operating assets, we start from the balance sheet as the initial statement showing the state of the company's assets and liabilities. In the course of the calculation, we gradually set aside non-operating assets, activate items not captured in the balance sheet and reduce assets by non-interest-bearing foreign capital.

2.1.7. Exclusion of non-operating assets

Differentiating operational assets from non-operational ones is a key challenge in this step. The subjectivity of this process relies on the analyst and the company's nature. Short-term financial assets, particularly securities, deserve attention. If they cover loan repayment costs, they are non-operational and excluded from NOA. Cash resources undergo careful analysis. NOA assumes only operationally essential funds, so surplus short-term resources are excluded (Matemane & Wentzel, 2019).

2.1.8. Inclusion of assets not reported in accounting

Czech accounting rules address leased assets with the lessor, but lessees bear associated benefits and risks. In leasing, the economic viewpoint is prioritized, incorporating leased assets in total asset value and related liabilities. Adjusting liabilities also impacts NOPAT adjustment. Equity equivalents arise due to asset valuation from the owner's perspective. They occur when adjusting assets during the transition from the accounting model, without a corresponding liability, directly affecting equity value.

2.1.9. Short-term explicitly non-interest-bearing liabilities

The main part of short-term liabilities are usually supplier loans, i.e., loans that are not explicitly interest-bearing. However, the financial costs of these loans are reflected in the final price of the loan in the form of an increase in purchase prices, which reduces the operating result of the economy. In addition to supplier loans, we can also encounter these hidden financial costs in the case of liabilities to partners, tax liabilities, accruals, etc.

2.1.10. Determination of the size of NOPAT's net operating result

Operating profit post-tax (NOPAT) size hinges on NOA's operating asset calculation. Symmetry between NOA and NOPAT is vital. If assets are part of operating assets, costs and revenues linked to them impact NOPAT. Like NOA, net operating profit hinges on distinguishing costs and revenues tied to the core business activity (Fernández, 2001).

2.1.11. Exclusion of interest paid

Deducted interest, previously subtracted from economic outcome, is reinstated. This includes standard and implicit interest from property leases, preventing double deductions from NOPAT. WACC’s cost of capital deduction in EVA’s basic formula warrants this adjustment.

2.1.12. Exclusion of extraordinary items

Selecting economic results from regular activities eliminates the impacts of non-operational extraordinary costs and revenues. Besides accounting for these, one-time costs and revenues, like restructuring expenses, must be excluded. For instance, income from long-term asset sales should be omitted.

2.1.13. Accounting for the effect of changes in equity

When calculating NOA, we faced changes that affected equity. In connection with these changes, it is also necessary to adjust the NOPAT calculation. Such adjustments include, for example, the activation of costs of an investment nature, the inclusion of increases or decreases in adjustment items for stocks and receivables, or the exclusion of the creation and drawdown of silent reserves that affected the economic result (Lovata & Costigan, 2002).

2.1.14. Definition of operationally necessary assets

During NOPAT adjustments, we should also assess the nature of long-term assets and current assets – that is, to what extent they relate to the company's operational activities and to what extent it is just a matter of placing free funds in assets that will provide the company with the required returns or serve as a reserve. Revenues and costs not related to the main activity of the company should then be excluded.

2.1.15. Tax adjustment

Adjusted tax needs to be determined, which is the amount of tax liability that would be paid from the operating profit. There are several methods for determining the amount of adjusted tax. One of them is the multiplication of NOPAT by the tax rate, but in this case, the result achieved is usually inaccurate because in NOPAT, there may be, and therefore, not included in the calculation, non-taxable costs and revenues (Paul et al., 2021).

2.2. Determination of WACC Cost of Capital

The third component for calculating economic value added is the WACC cost of capital. As already mentioned, WACC determines the profitability of capital and at the same time represents the average price that the company is forced to pay for the selected combination of own and external resources on the liabilities side of the balance sheet (Yescombe & Farquharson, 2018).

We calculate the WACC according to the formula:

$$\text{WACC} = r_e \frac{VK}{K} + r_d \frac{CK}{K}\left(1 - d\right), \tag{1}$$

where

r_e – the cost of equity capital;

r_d – the cost of foreign capital;

VK – own capital;

CK – foreign, explicitly interest-bearing capital, to the total volume of capital, i.e., the sum of $VK + CK$;

d – income tax rate.

When calculating the WACC indicator, we first determine the weights of the individual capital components and then determine the costs of debt and equity capital. We substitute the values calculated in this way into Formula (1), calculate the WACC value, and before substituting the economic added value into the

calculation equation, we possibly make further adjustments that will help us obtain more relevant values.

2.2.1. Determining the weights of individual components of capital

We determine the weights of individual capital components from market values. However, this requirement, which is relatively common in economies with a developed capital market, is being implemented only very slowly in Czech business practice, and therefore, models are still preferred that, better or worse, replace market evaluation with alternative methods (Frank & Shen, 2016).

2.2.2. Determining the cost of foreign capital

Determining the costs of foreign capital is mathematically relatively undemanding. The amount of payments resulting from the use of foreign capital is determined contractually, and the values can, therefore, be determined from credit agreements. We then calculate the total cost of foreign capital as a weighted average of interest payments reduced by the savings resulting from the use of the tax shield (Kumar, 2016).

2.2.3. Determining the cost of equity capital

The cost of equity capital is the required expected return from the owners' point of view. Determining the return that the owners expect from their investment is, however, much more complicated than in the case of foreign capital. It is necessary to take into account not only the risk associated with the investment but also the alternative returns when investing the funds in other assets. When tracking the success rate of an investment in a business, we compare the return to the risk-free return and expect the return on the investment in the business to be higher (Vogel, 2019).

We can use several methods to determine the required return on equity. CAPM is considered to be the basic model in Anglo-Saxon countries, other methodological procedures include the Gordon growth model or the APT model.

We determine the CAPM cost of equity using the following formula:

$$r_e = r_f + \beta\left[E\left(R_{\mathrm{m}}\right) - r_f \right], \tag{2}$$

where

r_f – the expected return on risk-free assets;

β – coefficient expressing whether the risk of the selected asset is higher or lower than the risk of the capital market. The axis of beta coefficient values can be divided into three segments for the purposes of assessing the asset's riskiness: $\beta > 1$ – the risk of the asset is higher than the risk of the capital market as a whole; $\beta = 1$ – the risk of the asset is comparable to the risk of the capital market as a whole; $\beta > 1$ – the risk of the asset is lower than the risk of the capital market as a whole;

$E(R_{\mathrm{m}})$ – the expected average return on the capital market;

$[E(R_m) - r_f]$ – capital market risk premium. It corresponds to the systematic risk of the market, i.e., the risk that is caused by factors affecting all assets in a given market (for example, gross domestic product or the development of inflation). The amount of the risk premium is usually determined by rating agencies.

The formula mentioned above emphasizes that an essential prerequisite for computing the cost of equity capital through the CAPM is the presence of a well-functioning capital market. Hence, this approach finds smoother application within firms in Anglo-Saxon nations. However, within the Czech context, its applicability is quite restricted. Consequently, the method established by Neumaierová and Neumaier, rooted in the INFA pyramid decomposition, emerges as a more fitting alternative for Czech companies. Notably, this method serves as the default performance evaluation framework endorsed by the Ministry of Industry and Trade of the Czech Republic.

When examining the impact of economic value added (EVA) on agricultural enterprises, it is crucial to reflect the specifics of this sector, which requires a thorough evaluation. Agricultural enterprises differ from other industries in several key aspects that support the necessity of applying EVA in assessing their economic performance.

1. Seasonality and dependence on natural conditions: Agricultural production is significantly affected by seasonality and natural cycles. EVA allows for analysis that includes fluctuations in production and market conditions, enabling better planning and strategy within a dynamic environment.
2. Assets and capital costs: Capital investment in land, technology and equipment is significant in agriculture. The EVA application provides important information about the efficiency of the use of these assets and identifies areas where capital investment can be optimized to achieve optimal returns.
3. Risk and insurance: Various risks, such as weather conditions and pests, have a significant impact on agricultural production. EVA makes it possible to quantify these risks and balance them with insurance strategies, which contributes to maintaining the stability of returns.
4. Regulation and subsidy: The agricultural sector is often regulated and subject to subsidies. EVA assesses the impact of regulatory changes and optimizes the use of available subsidies, which is necessary to maintain economic competitiveness.
5. Price and market volatility: Agricultural products are subject to significant price fluctuations. Applying EVA is key to creating strategies to manage price volatility and increases the ability of businesses to adapt to changes in the market.
6. Sustainability and social aspects: Nowadays, there is a growing emphasis on sustainability in agriculture. EVA allows for the assessment of the long-term environmental and social impacts of agricultural enterprises, which is key to meeting modern sustainability standards.

Considering these specifics provides the necessary framework for understanding the reasons why EVA in agriculture is not only relevant but also necessary for effective evaluation and management of the economic performance of agricultural enterprises.

Economic value added can be compared with traditional financial indicators such as net profit, return on equity (ROE) and return on investment (ROI), allowing us to assess whether EVA brings an additional perspective or emphasizes other aspects of economic performance. Another option is to compare it with return on invested capital (ROIC), which measures the efficiency with which capital is used to make a profit.

Analyzing the company's cash flow, the DuPont model or the market value added (MVA) index are other methodologies with which EVA can be compared. These methods provide different perspectives on economic performance and allow identifying which factors may influence the overall outcome. Benchmarking against industry averages and using the balanced scorecard, which combines financial and non-financial indicators, adds context and enables the integration of different aspects of business performance.

3. RESULTS

The company under investigation is a Czech company specializing in milk production. Founded in 2005, the researched company has built a solid position in the dairy market during its existence. The investigated company belongs to medium-sized enterprises in the agriculture and food industry. Its farms with modern milking parlors and milk processing technologies provide a stable supply of milk to produce its products. With more than 500 head of cattle, the company can be proud of its ability to ensure enough raw material. The main focus of the researched company is the production of fresh cow's milk and high-quality dairy products. It places special emphasis on traditional cattle breeding methods, which is reflected in the flavor profile and overall quality of its products. At the same time, the company strives for sustainable agriculture and ecological practices. The investigated company is characterized by a constant effort to innovate and improve its production processes. It has received certification for organic production and actively uses modern technologies in the field of milking and milk processing. Its products are recognized not only for their excellent quality but also for the transparency of the production chain.

In the market, the researched company does not only offer its products through regional retail chains but also establishes cooperation with local farmers' markets and shops, thereby strengthening its connection with the community. The investigated company is known for its involvement in local projects and support of local farmers. With a combination of tradition and modern technology, it emphasizes quality, sustainability, and community involvement.

The initial source of information for the calculation of the EVA indicator is the selected company's financial statements, for which, however, it is necessary to make several of the following adjustments to transform the accounting model into an economic model:

1) exclusion of those assets that are not necessary for the main operation of the company;
2) the inclusion of such assets that are not captured in the balance sheet but in the company;
3) using assets for the main activity and receiving economic benefits;
4) revaluation of assets to their actual fair value;
5) reduction of assets by interest-free foreign capital for which it is not possible to quantify the costs.

After performing all these adjustments, it is possible to obtain the net value of operating assets (NOA) and the amount of operating profit (NOPAT).

3.1. Determination of NOA

In the theoretical part, the need to divide assets into operationally necessary and unnecessary was discussed, depending on whether the asset brings economic benefit to the given company or serves the main economic activity. If these prerequisites are not met, it is necessary to subtract such assets from the total assets. Table 1 shows the individual types of operationally unnecessary property for the entire monitored period. In addition, the table shows the development of these assets over a time period. In addition, the table shows the development of these assets over time.

Table 1. Operationally Unnecessary Assets (in ths. CZK)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Construction	0	0	0	0	0	0	100 767	94 158	87 475	80 407	72 795
Unfinished long-term tangible assets	5056	926	10 320	279	872	688	82	257	441	429	736
Long-term financial assets	3110	3875	3826	4259	2298	2298	2298	2247	2247	2247	2247
Short-term financial assets	10 183	13 074	11 347	8626	8001	13 795	11 237	9000	6371	11 709	12 756
Surplus non-operational assets, total	18 349	17 875	25 493	13 164	11 081	16 781	114 384	105 661	96 534	94 792	88 533

Source: *the author calculation based on the company's internal data*

Another item that had to be separated from the value of assets was unfinished tangible fixed assets. This type of asset, due to its work in progress, cannot be included in the NOA either because it is not yet completed, and, therefore, economic benefits cannot flow from it. Long-term and short-term financial assets were also classified as operationally unnecessary assets. These are mainly investments for the purpose of depositing free funds with the aim of capital appreciation, but this is, again, not the main subject of the company's activity. 'Unnecessary' short-term financial assets were defined as the amount of funds in cash and in bank accounts exceeding 0.5 times their total amount. The limit of 0.5 was chosen as the optimal amount of funds held regarding maintaining sufficient liquidity of the company. Table 2 clearly shows the entire process of transformation of assets taken from the

balance sheet to NOA. First, the above-mentioned operationally unnecessary long-term assets are subtracted from these accounting assets, and then long-term intangible assets are added from capitalized costs. These are costs with long-term expected effects, specifically for the analyzed company, laboratory analyses of water and soil, technical inspections and revisions, and training of employees. All these mentioned costs are capitalized as long-term assets at a nominal value, and depreciation is then calculated from them, which in this form is reflected in the costs.

Table 2. Net Operating Assets (in ths. CZK)

	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Long-term assets from balance sheet:	176 322	177 712	194 837	195 966	190 701	190 252	271 580	278 751	284 564	281 813	278 559
(-) non-essential long-term assets	8166	4801	14 146	4538	3080	2986	103 147	96 662	90 163	83 083	75 778
(+) DNM from capitalized costs	105	421	486	575	477	438	554	639	559	518	655
(+) leased assets	4426	4336	4249	4163	4079	3996	3916	3837	3759	3683	3609
(+) cumulative unusual losses	17	0	–975	11	–2499	0	7	–4170	–4200	0	0
(-) cumulative unusual gains	158	127	29	1 346	42	0	160	147	149	41	257
Current assets from balance sheet:	106 838	114 502	120 654	117 958	114 246	119 655	132 843	140 587	150 209	154 016	148 323
(-) non-essential current assets	10 183	13 074	11 347	8626	8 001	13 795	11 237	9000	6371	11 709	12 756
(-) non-interest-bearing short-term liabilities	8283	7698	11 651	18 482	11 594	9616	17 068	16 566	20 002	13 920	14 453
Net operating assets (NOA):	260 918	271 272	282 078	285 681	284 287	287 945	277 288	297 270	318 206	331 277	327 902

Source: *the author calculation based on the company's internal data*

The other two items make up unusual gains and losses that can occur with high unpredictability completely randomly. It is difficult for society to influence their amount and impact. Furthermore, current assets from the balance sheet are added, less those that are not needed operationally and non-interest-bearing short-term liabilities, from which the company does not pay any capital costs. Non-operating current assets were defined as an amount exceeding half of the total value of cash, as already stated above. Determining the size of NOPAT, if we have made all the above-mentioned adjustments, in order to maintain informational symmetry between the balance sheet and the income statement, we cannot forget to adjust the economic result, which should contain only those costs and revenues that are closely related to operationally necessary assets. It is also necessary to exclude all

extraordinary costs and revenues; on the contrary, we should not deduct the costs of foreign capital. The result will be a profit that is available not only for the owners but also for the company's creditors.

Table 3. Net Operating Profit after Tax (in ths. CZK)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Operating result from the income statement	21 155	20 206	21 324	3597	–46	12 516	20 706	19 844	24295	31 605	3494
(-) operating income from non-operating assets	0	0	0	0	0	0	0	60 658	37 294	36 055	33 794
(+) income from financial assets included in NOA	0	0	38	63	54	60	74	86	86	86	86
(+) operating expenses on non-operating assets	0	0	0	0	0	0	0	50 469	31 743	33 671	33 561
(+) original costs of an investment nature											
(-) amortisation of NM generated by capitalising these costs	170	1107	1029	1201	980	1034	1175	1232	1119	1139	1378
(+) original costs in the form of rent	65	380	552	698	661	655	640	726	777	756	816
(-) depreciation of newly capitalised PPE	500	500	500	500	500	500	500	500	500	500	500
(-) unusual gains	46	89	88	86	84	82	81	79	77	76	74
(+) unusual losses	158	127	29	1346	42	0	160	147	149	41	257
(-) tax adjustment to NOPAT level	17	0	–975	11	–2499	0	7	–4170	–4200	0	0
= NOPAT	0	0	0	0	0	1127	1099	714	1817	4661	343

Source: *the author calculation based on the company's internal data*

3.2. Determination of WACC

The INFA modular model was used to calculate the WACC, as described in the methodological part of the work. The entire procedure is clearly outlined and summarized in Table 4. The risk-free interest rate (r_f) was chosen as the interest rate for ten-year government bonds, just as it was in the framework of the ROE analysis. To calculate the risk premium for the financial structure (rFINSTAB), the current liquidity (L3) was used, which was greater than 2.5 for the entire monitored period, and therefore, it was not necessary to add this premium using the formula, the premium was thus zero in all years.

The value of payable resources (UZ) was in the range between 100 million and 3 billion, so it was necessary to use the formula from the methodological part to determine the risk premium for the size of the company (rLA). The resulting surcharge was around 4 %. In order to calculate the surcharge for business risk (rPOD), it was already necessary to compare the indicator of production power (EBIT/A) and the indicator of the converted interest rate (UZ/A·UM).

Table 4. Weighted Average Cost of Capital

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
rf (%)	3.54	3.8	4.3	4.62	4.84	3.79	3.71	2.78	2.11	1.58	0.58
L3	12.9	14.87	10.36	6.38	9.85	12.42	7.47	8.49	7.33	10.7	9.92
rFINSTAB (%)	0	0	0	0	0	0	0	0	0	0	0
UZ (v tis. Kč)	251 449	256 693	277 852	279 989	279 018	286 038	370 199	386 862	399 223	405 312	395 760
rLA (%)	4.49	4.47	4.41	4.4	4.4	4.38	4.11	4.06	4.02	4	4.03
EBIT/A (%)	7.28	6.64	6.96	1.7	1.42	4.09	5.18	5.8	6.84	7.54	1.06
UZ/A*UM (%)	7.43	6.87	7	7.45	7.75	7.4	2.19	3.75	2.84	2.58	1.87
rPOD (%)	0.004	0.011	0	5.956	6.669	1.998	0	0	0	0	1.898
WACC (%)	8.04	8.28	8.71	14.98	15.91	10.16	7.82	6.84	6.13	5.58	6.51

Source: *the author calculation based on the company's internal data*

Apart from the years 2018–2021, the production force was in the range between zero and the value of the recalculated interest rate and thus had to be recalculated using the formula for rPOD according to the methodology. The obtained values are reflected in Table 4. In the years 2018–2021, the production force was greater than the recalculated interest rate, and the surcharge for business risk thus reached a zero value. By summing up all the markups described, we just get the required cost of capital WACC. From the development of these capital costs, it is clearly worth noting that the value was almost doubled in 2015 and 2016 compared to other periods. This is due to the high premium for business risk caused by a very low production force. In these years, the investigated sample of farms achieved one of the lowest economic results.

Table 5. Cost of Invested Capital

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
NOPAT	21 574	21 216	21 247	3242	–1799	12 245	20483	5637	13 429	25 412	3735
WACC (%)	8.04	8.28	8.71	14.98	15.91	10,16	7.82	6.84	6.13	5.58	6.51
NOA	260 918	271 272	282 078	285 681	284 287	287 945	277 288	297 270	318 206	331 277	327 902
Cost of invested capital	20 966	22 475	24 557	42 789	45 233	29 268	21 689	20332	19 511	18 494	21 346
EVA	607	–1258	–3310	–39 547	–47 031	–17 024	–1206	–14 695	–6082	6918	–17 611

Source: *the author calculation based on the company's internal data*

In this case, only Table 5, where the defined indicators are summarized, the result of the entire process is the obtained EVA values. Positive economic profit came out only in two periods, namely in 2012 and in 2021. In these years, NOPAT was the highest, and at the same time, the cost of invested capital was one of the lowest. The years 2015 and 2016, as already mentioned, were a big disappointment when the values of the indicator recorded record declines, so the company closed the year 2015 with an economic loss in the amount of almost −40 million CZK; a year later, the depth of the decline deepened to −47 million CZK. All of this is underlined by a rapid increase in WACC compared to other periods because of the

extreme reduction in profit. However, this conclusion is not such a big surprise since the previous analysis of ratios indicated that the company did not perform very well in these years. High losses were recorded mainly in the production of milk, which is a key commodity for a significant part of the examined sample. Only items in the financial and extraordinary areas contributed to a positive, albeit very low, economic result in these years.

CONCLUSION

In conclusion, this research endeavor aimed to compute the economic value added (EVA) metric for a selected company by implementing crucial modifications to transform the accounting model into an economic one. These adjustments encompassed the exclusion of non-essential assets, the incorporation of economically beneficial assets, revaluation to fair value, and the deduction of interest-free foreign capital. These steps led to the determination of net operating assets (NOA) and net operating profit after tax (NOPAT). The pivotal differentiation between operationally necessary and unnecessary assets played a pivotal role in establishing NOA. Assets such as buildings, incomplete tangible fixed assets, and specific financial assets were subtracted, while leased and capitalized assets were included, resulting in NOA figures closely aligned with the company's core operations. Similarly, NOPAT was recalibrated to encompass only costs and revenues directly tied to essential assets. Extraordinary items were excluded, and non-operational costs were deducted, yielding an adjusted NOPAT that accurately reflected the company’s operational performance. Moreover, the weighted average cost of capital (WACC) was calculated using the INFA modular model, factoring in elements such as risk-free rates, liquidity, production capacity, and other pertinent variables. The derived WACC values were instrumental in computing the cost of invested capital, which, when deducted from NOPAT, yielded the EVA values. The results illuminated that positive EVA values were attained in just two periods (2019 and 2021), with significant declines observed in 2015 and 2016 largely attributed to losses in milk production. These findings underscore the profound impact of operational performance on EVA outcomes. Despite certain limitations, such as subjectivity in asset classification and reliance on historical data, this research underscored the significance of EVA as a tool for assessing a company's ability to generate economic value. The EVA metric captures the interplay between operational activities, asset utilization, and the cost of capital, providing valuable insights into the financial health of the company and identifying potential avenues for enhancement. The methodology employed in this study presents a comprehensive approach to calculating EVA and contributes to a deeper understanding of its practical application in evaluating corporate performance. Future research could delve into additional factors and refine the methodology to enhance the precision and applicability of EVA in gauging value creation within companies.

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