ANALYSIS AND ECONOMIC-MATHEMATICAL MODELING IN THE PROCESS OF FORECASTING THE FINANCIAL CAPACITY OF MILK PROCESSING ENTERPRISES OF THE AGRICULTURE SECTOR: A CASE STUDY OF VOLYN REGION, UKRAINE

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Abstract

In the article we substantiate that the process of analysis of the financial potential of dairy enterprises in the agricultural sector of Volyn region of Ukraine should be preceded by an in-depth financial analysis of these enterprises, including analysis of financial condition and financial capabilities of dairy enterprises. We substantiate that the forecast value of the indicator of financial potential of dairy enterprises includes the implementation of the development of a factor model that reflects the relationship of the result with the factors that influenced it. The forecast values of the financial potential of dairy enterprises, the dynamics of which is described by regression dependence, were calculated by us using the functional service capabilities of the electronic software product Excel. Based on the analysis of the financial potential of the dairy industry of the agro-industrial sector of Volyn region of Ukraine, we determined its interdependence on such indicators as the coefficient of autonomy, the ratio of current assets, own liquidity ratio, profitability, total return on assets. In the article we substantiate that the results of economic and mathematical modeling of the financial potential of dairy enterprises in the agricultural sector of Volyn region of Ukraine, identified on its basis of interdependence and constructed forecast values, can be used by investors in making management investment decisions.

Key words: dairy industry, agricultural sector, financial capacity of milk processing enterprises, economic and mathematical modeling, forecasting

INTRODUCTION

The main task of the process of managing the financial potential of economic entities is to optimize their financial flows in order to ensure a positive financial result. Thus, companies must form a financial plan for their activities, which is based on the results of forecast research.

Problems of effective formation of the financial potential of dairy enterprises of the agro-industrial sector in the system of production relations are widely covered in the works of such researchers as O. Apostolyuk [2], M. Demianenko [4], T. O. Kriuchkovska [11], B. Y. Paskhaver [13], N. V. Petrunia [14], A. M. Podderyogin [15], A. Popescu [16-24], T. O. Shmatkovska [25-27], O. M. Shubalyi [28], Ya. Yanyshyn [34-35], O. M. Zgurska [37]. In addition, it is necessary to pay tribute to the study of the peculiarities of the control system over the dynamics of changes in the financial potential of dairy enterprises, as a key element in ensuring the efficiency of their operation, disclosed in the works of O. Agres [1], A., O. Boiar [3], M. I. Dziamulych [5-7], S. V. Kharchenko [9], A. Khomenko [10], I. O. Kriukova [12], P. A. Stetsiuk [29], I. O. Tsymbaliuk [31], V. Yakubiv [32-33],

I. V, Zhurakovska [38]. However, the new problems facing the dairy enterprises of the agro-industrial sector in the national economy of Ukraine, in particular - under the influence of globalization, require a more in-depth study of specific aspects of ensuring the effectiveness of their financial potential in the long run.

Characterizing the process of forecasting financial potential, it should be noted that the first volumes of production and sales are forecast, and then financial indicators and cash flow indicators are forecast. Note that forecasting the volume of production and sales is the first step and a necessary tool in establishing the relationship between the prospects of enterprise development and the need to attract investment and financial resources.

MATERIALS AND METHODS

Research and analysis of scientific sources and program documents on both the theory and methodology of forecasting and the peculiarities of managing the financial potential of the enterprise, allowed us to conclude the need to adapt existing methods and tools for forecasting socio-economic phenomena to the specifics of the forecast area. The financial potential of the enterprise is determined.

The process of forecasting the financial potential of the enterprise is characterized by the formation of a system of financial opportunities and the choice of the most effective ways to optimize them. Within the limits of financial forecasting the general concept of financial development and financial policy of the enterprise which considers all directions of its activity is formed.

It is worth noting that there are many factors in the forecast period that can cause inconsistencies, and therefore financial forecasting may not always be carried out with great accuracy. However, the possibility of error should not be the reason that can lead to the refusal to use forecasting [30].

The process of forecasting the financial potential of the enterprise can be carried out in the following areas:
– forecasting the resource base of the enterprise (labor, financial, material);
– forecasting the financial condition (assessment of financial balance);
– forecasting financial policy [30].

In terms of building market relations in the analysis of financial potential should be preceded by an in-depth financial analysis of the enterprise, in particular the analysis of financial condition and determination of financial capabilities of the enterprise.

The specifics of forecasting financial potential is that the company is characterized by interdependence and a certain degree of inertia. The latter characterizes the dependence of the value of any indicator at the moment on the state of the same indicator for the previous period but at the same time inadmissible abstraction from the influence of various factors. Thus, the forecast value of the indicator of financial potential includes the implementation of a factor model that links the result with the factor that influenced it.

Forecasting of financial potential indicators can be carried out in the following periods:
- short-term forecasting – 1-4 years;
- medium-term forecasting – 5-10 years;
- long-term forecasting – 11-15 years.

In short-term forecasting, a quantitative and qualitative assessment of changes in indicators comes to the fore. Medium-term and long-term forecasting is based on a system of forecasts [30].

It should be noted that the activity of any enterprise largely depends on the availability and use of its own potential. Liquidity, profitability, financial stability - these are the indicators that determine the overall financial potential of the enterprise.

The study of different methods of analysis allows you to choose the best way to conduct and, based on the results, to determine the financial potential of the enterprise, as well as to forecast indicators for the short, medium, or long term.

To determine the level of significance and dependence of the indicators of the financial potential of the enterprises of the dairy industry of the agro-industrial sector of the Volyn region of Ukraine, we used the method of correlation and regression analysis.

To analyse the calculated indicators, we used the average annual growth rate and the coefficient of variation of the indicator. The average annual growth rate $(\bar{T})$ is calculated by the formula [36]:

$$\overline{T} = \sqrt[5-1]{T_1 \cdot T_2 \cdot T_3 \cdot T_4} \; ,$$

where T_1, T_2, T_3, T_3 – chain growth rates.
The coefficient of variation is used when it is necessary to compare the variability of the characteristics of the object. The variability is considered weak if $v < 10\%$; if v from 11-25% – average and significant for $v > 25\%$.
Coefficient of variation:

$$K_{VAR} = \frac{\sigma(x)}{\overline{x}} \cdot 100\% \; ,$$

where $\sigma(x)$ – standard deviation, $\vec{x}$ – average value.
We used the moving average method to find the forecast values of the indicators of the financial potential of the enterprises of the dairy industry of the agro-industrial sector of the Volyn region of Ukraine.
The moving average method is one of the empirical methods for smoothing and predicting time series. The essence of this method is that the absolute values of a series of dynamics change to the arithmetic mean value at certain intervals. The choice of intervals is made by sliding: the first levels are gradually removed, the next – are included. The result is a smoothed time series of values, which allows you to clearly trace the trend of changes in the studied parameter and make a forecast.
With the help of a variable average, you can detect the nature of changes in the value of Y over time and predict this parameter in the future. The method works when the trend in the dynamics is clearly traced to the values.

RESULTS AND DISCUSSIONS

In the process of analysis of the financial potential of enterprises (FPE) of the dairy industry of the agro-industrial sector of the Volyn region of Ukraine according to the existing method its interdependence on such indicators as autonomy ratio (Ra), current assets ratio (R_{ca}), current liquidity ratio (CLR) product profitability (PP), total asset turnover ratio (R_{ta}).
We analysed the dynamics of the main financial indicators of the studied basic enterprises of the dairy industry of the agro-industrial sector of the Volyn region of Ukraine for the period 2015-2019, which have a direct impact on the formation of their financial potential (Fig. 1).
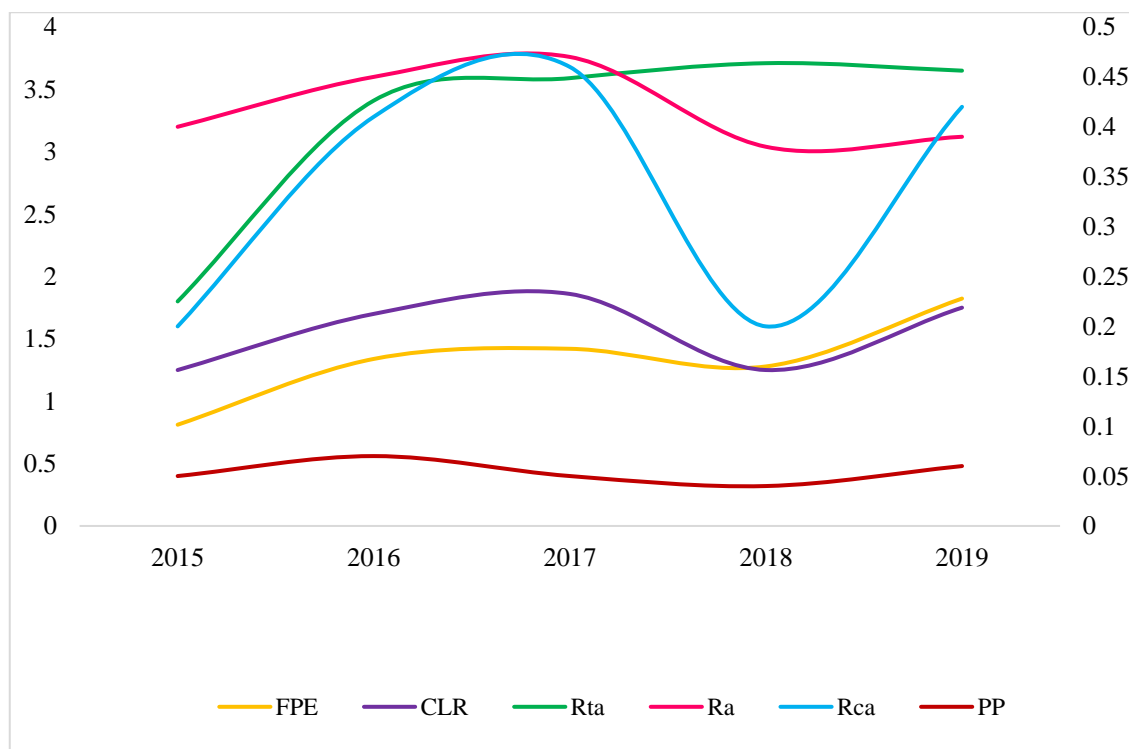

Fig. 1. Dynamics of the main financial and economic indicators of PJSC "Kovelmoloko", which belongs to the dairy industry of the agro-industrial sector of Ukraine, for 2015-2019
Source: developed by the authors on the basis of reporting data of the enterprise.

Thus, the economic and mathematical model of the dynamics of the financial potential of the enterprise has the form:

$$y = 0.85664 + 0.4991\ln(t), R = 0.8774,$$

where: y – financial potential, t – period of time, year.

The indicator of the financial potential of PJSC "Kovelmoloko" has positive dynamics. However, the growth rate of FPE is slow (the model is described by a logarithmic dependence).

The study and evaluation of the relationships between the studied indicators were carried out using a matrix of correlation effects (Table 1). Based on the study of the matrix of correlation coefficients, we can conclude that the value of FPE, according to the theory, is not affected by the coefficient of autonomy, and the other above-mentioned indicators have a positive effect, i.e. increasing these indicators increases the value of FPE.

Table 1. Interdependence of financial indicators of PJSC "Kovelmoloko", which belongs to the dairy industry of the agro-industrial sector of Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
FPE	1	–	–	–	–	–
R_a	0.0429	1	–	–	–	–
R_{ca}	0.7099	0.6975	1	–	–	–
CLR	0.7106	0.6973	0.9984	1	–	–
PP	0.3356	0.4095	0.6267	0.5854	1	–
R_{ta}	0.8196	0.1578	0.5401	0.5400	0.0803	1

Source: own development .

To mathematically substantiate the determination of the effect of these indicators on the resulting, we check the significance of the obtained correlation coefficients.

According to [8], the significance of the correlation coefficients is checked using Fisher-Snekedor F-statistics. The critical value of this statistic for ($k_1 = 2$-1 = 1, $k_2 = 5$-1 = 4) is 7.71.

According to the calculations, we can conclude that only for the correlation coefficients between the indicators FPE and R_{ta} and R_{ca} and CLR we have the value $F > F_{kp}$. Therefore, we can say that there is an interdependence between these indicators. Increasing the ratio of asset turnover to own funds contributes to the growth of the current liquidity ratio.

The economic and mathematical model of the dependence of financial potential on the ratio of total asset turnover has the form:

$$y = 0.14991 + 0.3665x, R = 0.8196,$$

where: y – financial potential, x – C_{ta} indicator.

An increase in the value of the total turnover ratio of assets by 1% leads to an increase in FPE by 0.367%. The percentage increase in the value of the FPE indicator is insignificant, but is promising.

We will analyze the growth rate of financial indicators, namely: the coefficient of autonomy (R_a), the ratio of current assets to own funds (R_{ca}), the current liquidity ratio (CLR), product profitability (PP), the total turnover ratio (R_{ta}) of the Shevchenko PRAE (Fig. 2).

It is worth noting that all our indicators tend to increase since 2016. The period 2015-2016 had a negative impact on the company's activities. This situation can be traced to the activities of many food industry enterprises, as it was during this period that external factors had a significant impact.

The values of the average growth rate and the coefficient of variation of the indicators of the PRAE named after Shevchenko are given in the Table 2.

Table 2. Indicators of average growth rate and coefficients of variation PRAE named after Shevchenko, which belongs to the dairy industry of the agro-industrial sector of Volyn region of Ukraine

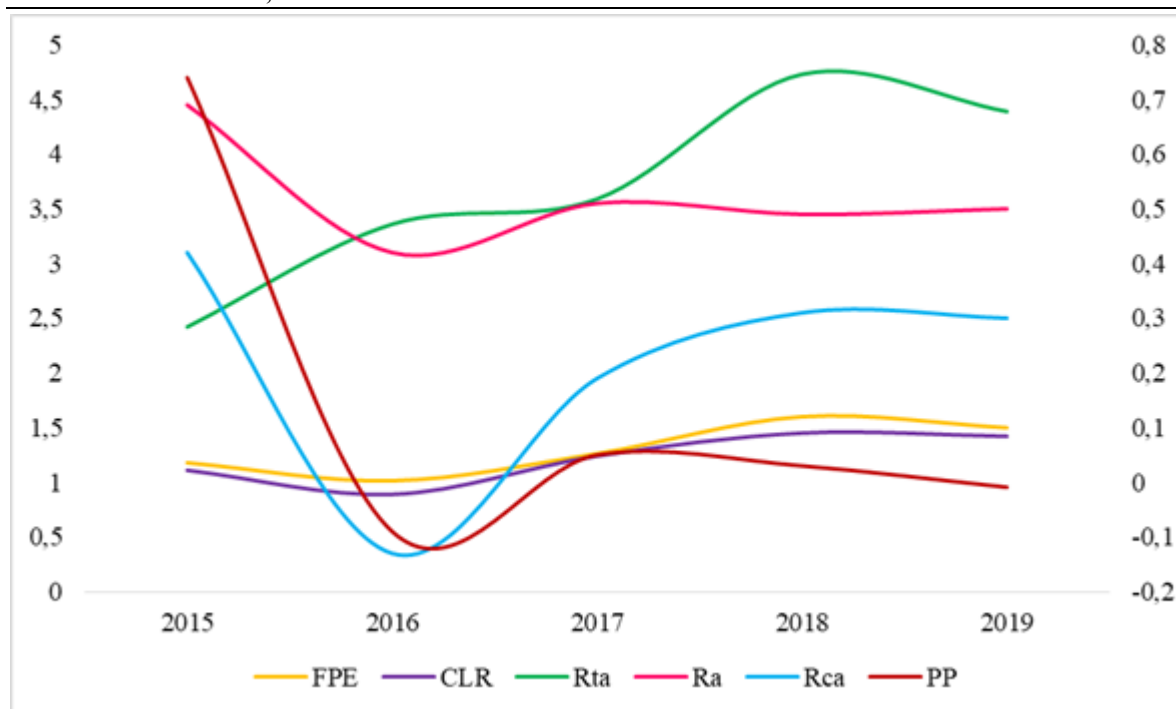| Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
T	106.2	92.26	91.93	106.35	87.34	116.05
K_{VAR}	18.16	19.22	96.73	18.94	233.94	24.57

Source: own development.

Fig. 2. Dynamics of the main financial indicators of the PRAE named after Shevchenko, which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine, for 2015-2019
Source: developed by the authors on the basis of reporting data of the enterprise.

An analysis of the relationships between the studied indicators using a matrix of correlations (Table 3).

Table 3. The interdependence of financial indicators of PRAE named after Shevchenko, which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
FPE	1	–	–	–	–	–
R_a	-0.0503	1	–	–	–	–
R_{ca}	0.5967	0.7681	1	–	–	–
CLR	0.9781	0.0342	0.6639	1	–	–
PP	-0.2078	0.9758	0.6376	-0.1506	1	–
R_{ta}	0.8125	-0.6228	0.0185	0.7438	-0.7307	1

Source: own development

Based on the study of the matrix of correlation coefficients, we can conclude that the FPE has almost no effect on R_a. It should be noted that the profitability of products has a negative impact on the value of the FPE indicator, as during 2015-2019. product profitability is almost negative. All other indicators have a positive effect on the value of the FPE indicator.

It should be noted that only the correlation coefficients between FPE and R_{ta} and between PP and R_a are significant. Economic and mathematical model of dependence of FPE *(y)* on R_{ta} *(x)* has the form:

$$y = 0.5236 + 0.2129x, R = 0.8125$$

An increase in the total turnover ratio of assets by 1% leads to an increase in FPE by 0.2129%.

Economic and mathematical model of R_{ta} (y) dependence on FPE (x) is described as follows:

$$y = -0.3666 + 3.004x, R = 0.8125$$

An increase in the value of the indicator of the financial potential of the PRAE named after Shevchenko by 1% increases the value of R_{ta} by 3.004%.

As a result of research, the indicators obtained the following functional relationship between the coefficient of autonomy and product profitability. The economic-mathematical model of the dependence of R_a (y) on PP (x) has the form:

$$y = 0.4801 + 0.2903x, R = 0.9758$$

According to [8] and the study of the interdependence of the indicators of the PRAE named after Shevchenko, it can be noted that the growth of product profitability contributes to the growth of the coefficient of autonomy.

Analysing the activities of LLC "Shatsk Dairy", we can conclude that the financial indicators are within the normative values, but it is necessary to further increase the value of the indicator of financial potential. The situation has improved somewhat since 2017 and there is an increase in the value of FPE, but there is a decrease in the values of the coefficients PP and R_{ta} (Fig. 3).
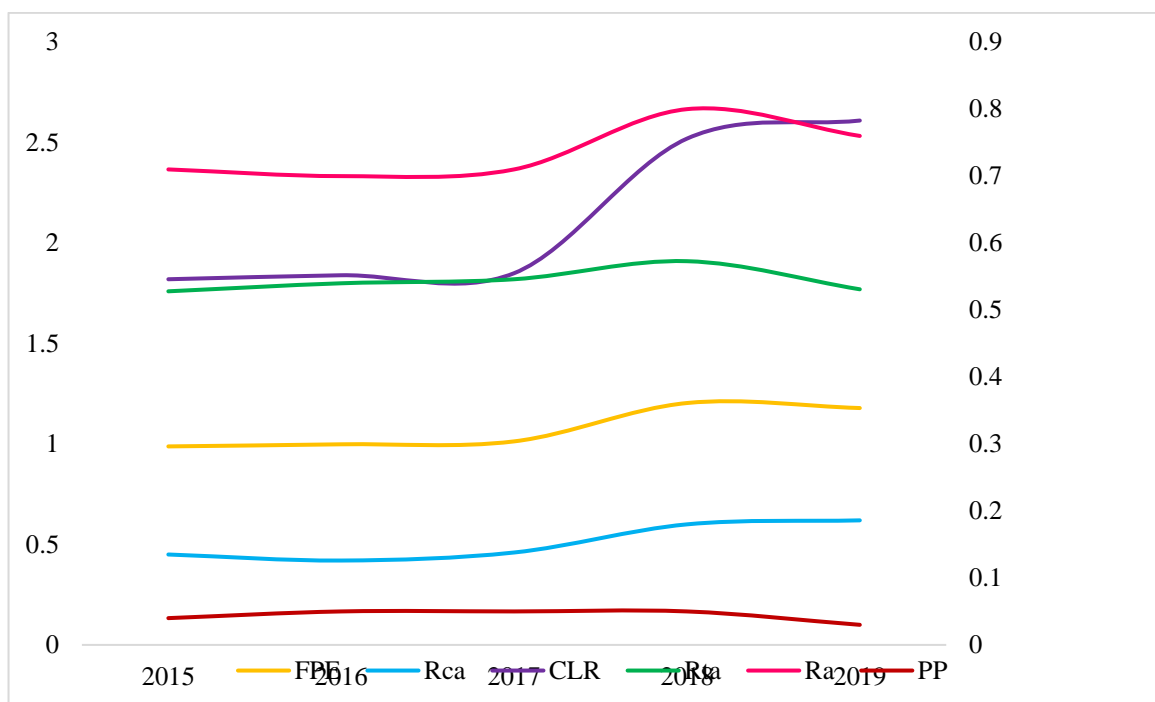

Fig. 3. Dynamics of financial indicators of LLC "Shatsk Dairy", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine, for 2015-2019
Source: developed by the authors on the basis of reporting data of the enterprise.

The values of the average growth rate and the coefficient of variation of financial indicators of LLC "Shatsk Dairy" are given in Table 4.

Table 4. Indicators of the average growth rate and coefficients of variation of LLC "Shatsk Dairy", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
T	104.52	101.72	108.34	109.43	93.06	100.14
K_{VAR}	9.82	5.81	18.18	18.81	20.33	3.30

Source: own development.

The economic and mathematical model of the dynamics of the financial potential of the enterprise is presented in the form:

$$y = 0.9003 + 0.05875t, R = 0.8786,$$

where y – financial potential, x – C_{ta} indicator.

Based on the study, it can be argued that the value of the Fpp LLC "Shatsk Dairy" is growing annually by an average of 0.05875%. The analysis of the relationship between the studied indicators will be performed using a matrix of correlations (Table 5).

Table 5. Interdependence of financial indicators of LLC "Shatsk Dairy", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
FPE	1	–	–	–	–	–
R_a	0.9607	1	–	–	–	–
R_{ca}	0.9754	0.9138	1	–	–	–
CLR	0.9850	0.9089	0.9872	1	–	–
PP	-0.3080	-0.1437	-0.4822	-0.4580	1	–
R_{ta}	0.5232	0.6690	0.3609	0.3702	0.6362	1

Source: developed by the authors on the basis of reporting data of the enterprise.

Based on the matrix of correlation coefficients, we can conclude that the value of FPE has a slight negative impact on profitability. Other indicators have a positive effect, the increasing the value of these indicators increases the value of the FPE indicator.

It should be noted that the dependencies between the correlation coefficients are significant, namely FPE and R_a, FPE and R_{ca}, FPE and CLR. Since the indicators R_a and R_{ca} are multicollinear with the indicator CLR, the indicator CLR will be chosen as an independent variable to build an economic-mathematical model.

The economic and mathematical model of the dependence of the indicator of financial potential *(y)* on CLR *(x)* has the form:

$$y = 0.5229 + 0.2601x, R = 0.9849$$

An increase in CLR by 1% leads to an increase in FPE by 0.2601%.

Economic and mathematical model of the dependence of CLR *(y)* on FPE *(x)* can be presented as:

$$y = -1.8871 + 3.2797x, R = 0.9849$$

It should be noted that in this case there is a functional dependence. Increasing the value of FPE by 1% leads to an increase in the value of CLR by 3.2797%.

Analysing the performance of LLC "Terra-Food", it should be noted that the value of the FPE indicator is variable. The values of profitability and total turnover tend to decrease (Fig. 4).
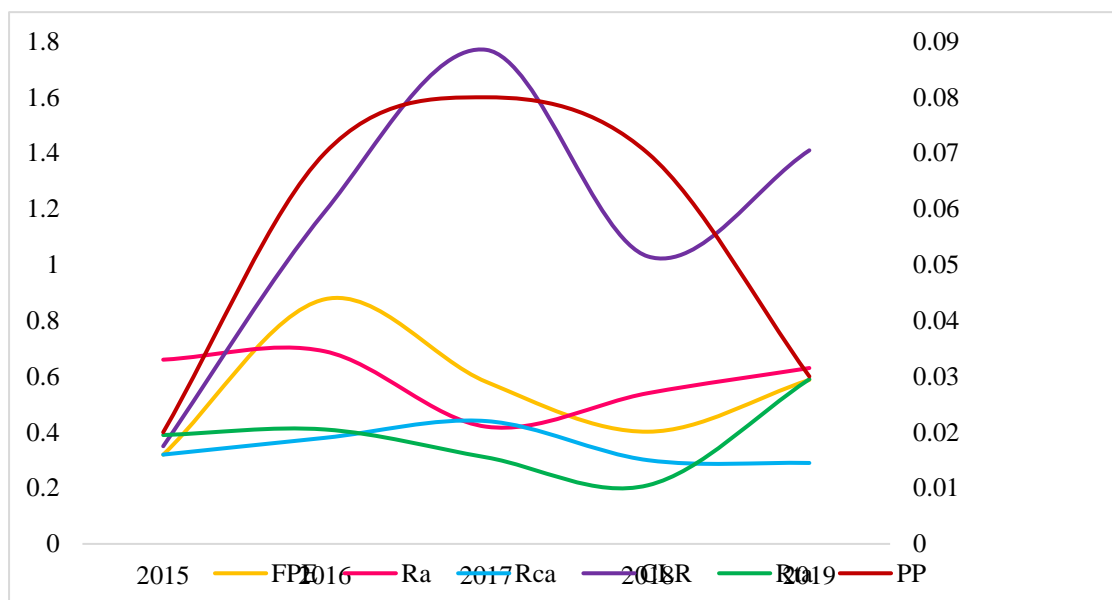

Fig. 4. Dynamics of financial indicators of LLC "Terra-Food", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine, for 2015-2019
Source: developed by the authors on the basis of reporting data of the enterprise.

The calculated values of the average growth rate and the coefficient of variation of indicators of LLC "Terra-Food" are given in the Table 6.

Table 6. Indicators of the average growth rate and coefficients of variation of LLC "Terra-Food", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
T	116.45	98.84	97.57	141.67	110.67	116.45
K_{VAR}	38.76	18.61	18.23	45.77	50.03	38.76

Source: developed by the authors on the basis of reporting data of the enterprise.

Based on the study of the average growth rate, we can conclude that the values of the coefficients R_a and R_{ca} are less than one. The normative value of the coefficient $R_a > 0.5$, i.e. the company can fulfil external obligations from its own assets.

The relationship between the studied indicators was assessed using a matrix of correlation effects (Table 7).

Table 7. The interdependence of financial indicators of LLC "Terra-Food", which belongs to the dairy industry of the agro-industrial sector of Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
FPE	1	–	–	–	–	–
R_a	0.2159	1	–	–	–	–
R_{ca}	0.4559	-0.5194	1	–	–	–
CLR	0.5402	-0.6122	0.5376	1	–	–
PP	0.4568	-0.5886	0.6571	0.6294	1	–
R_{ta}	0.3185	0.5292	-0.2754	0.0839	-0.6220	1

Source: own development.

Analysing the results of the study of financial indicators (Table 7), we can conclude that all ratios have a positive impact on the value of the financial potential of LLC "Terra-Food". The increase in the coefficient of autonomy negatively affects the values of R_{ca}, CLR, and PP. However, the correlation coefficients are insignificant, so it is not possible to establish functional relationships.

Analysing the financial performance of PE "Volyn Ecoproduct" for 2017-2019, we can conclude that i.e. company is not working efficiently, i.e. unprofitable. Indicators of financial potential. are negative. The dynamics of financial indicators are presented in Fig. 5.
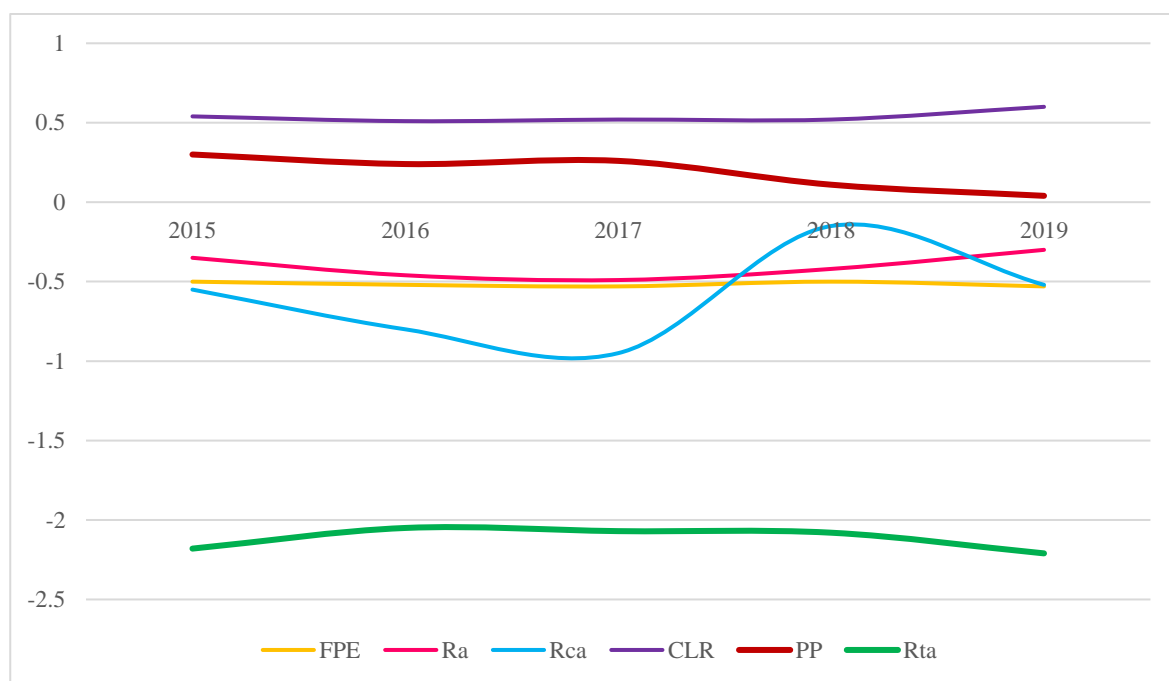

Fig. 5. Dynamics of the main indicators of PE "Volyn Ecoproduct", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine
Source: developed by the authors on the basis of reporting data of the enterprise.

The values of the average growth rate and the coefficient of variation of the indicators of PE "Volyn Ecoproduct" are given in the Table 8.

Table 8. Indicators of the average growth rate and coefficients of variation of PE "Volyn Ecoproduct", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
T	103.59	100.82	98.68	105.33	55.78	100.90
K_{VAR}	10.18	22.28	57.00	10.56	61.67	4.56

Source: own development.

It should be noted that the values of FPE, CLR, and R_{ta} indicators of the studied enterprise for 2015-2019. practically remain unchanged. The average is the variability of R_a. Significantly variable are the values of R_{ca} and PP.

We will evaluate the relationships between the studied indicators using a matrix of correlation effects (Table 9).

Table 9. The interdependence of financial indicators of PE "Volyn Ecoproduct", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
FPE	1	–	–	–	–	–
R_a	0.3123	1	–	–	–	–
R_{ca}	0.8572	0.3212	1	–	–	–
CLR	-0.1512	0.5328	0.2841	1	–	–
PP	0.0835	-0.1162	-0.4319	-0.7758	1	–
R_{ta}	0.1040	-0.7981	-00781	-0.8180	0.2842	1

Source: own development.

It should be noted that only the correlation coefficient between FPE and R_{ca} is significant. Economic and mathematical model of dependence of FPE *(y)* on R_{ca} *(x)* is presented in the form:

$$y = -0.4501 + 0.1313x, R = 0.8572$$

An increase in R_{ca} by 1% leads to an increase in FPE by 0.1313%.

Economic and mathematical model of the dependence of R_{ca} *(y)* on FPE, *(x)* has the form:

$$y = 2.3536 + 5.595x, R = 0.8572$$

Increasing the value of FPE by 1% leads to an increase in R_{ca} by 5.595%.

The activity of PE "TH Tyberia" is effective because the value of financial indicators is above the norm. The current liquidity ratio is quite high, which characterizes the adequacy of working capital of the company and the ability to repay liabilities during the year. It is worth noting that for 2018-2019 the company has no long-term liabilities and the amount of short-term liabilities is insignificant compared to the value of current assets. The dynamics of financial indicators are mostly stable, except for the indicators CLR, PP, and R_{ta} (Fig. 6).
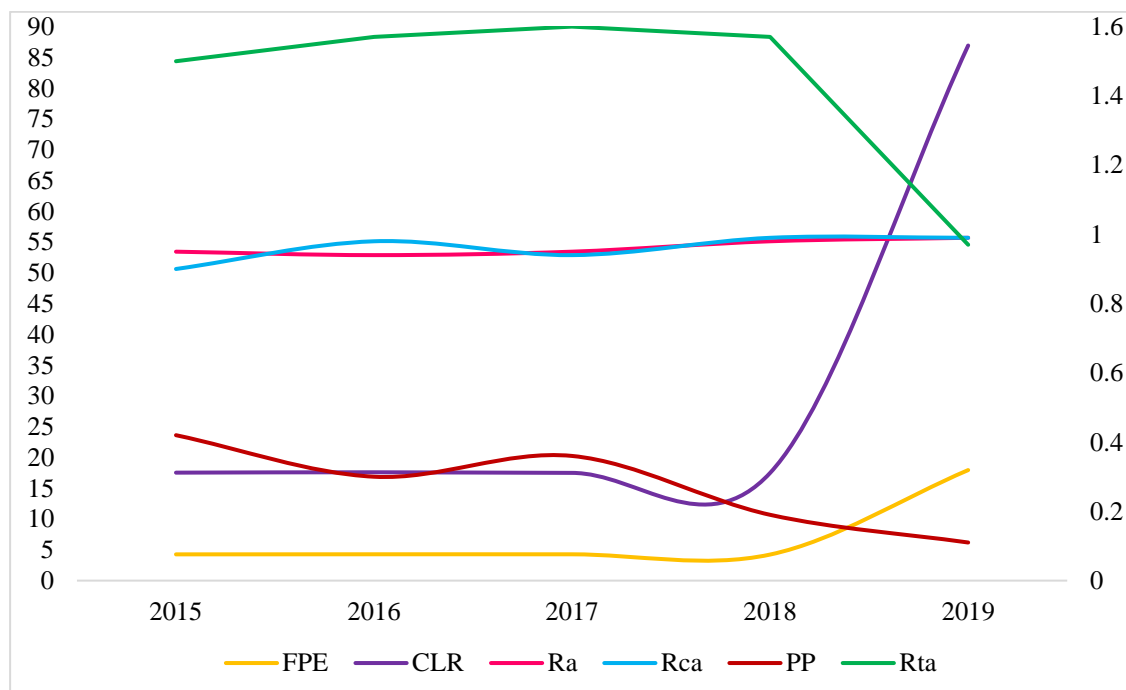

Fig. 6. Dynamics of financial indicators of PE "TH Tyberia", which belongs to the dairy industry of the agro-industrial sector of Ukraine
Source: own development on the basis of reporting data of the enterprise.

The calculated values of the average growth rate and the coefficient of the indicators variation for PE "TH Tyberia" are given in Table 10.

The values of R_a and R_{ca} are practically unchanged. All other indicators of PE "TH Tyberia" are characterized by medium and high variability.

Table 10. Indicators of the average growth rate and coefficients of variation of PE "TD Tyveria", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
T	143.23	101.04	102.41	149.21	71.54	89.67
K_{VAR}	87.46	2.25	4.10	98.79	45.59	18.47

Source: own development.

The assessment of the relationships between the financial indicators of PE "TH Tyveria" was carried out using the matrix of correlations (Table 11).

Table 11. The interdependence of financial indicators of PE "TD Tyveria", which belongs to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine

Indexes, %	FPE	R_a	R_{ca}	CLR	PP	R_{ta}
FPE	1	–	–	–	–	–
R_a	0.7202	1	–	–	–	–
R_{ca}	0.4250	0.5565	1	–	–	–
CLR	0.9999	0.7214	0.4261	1	–	–
PP	-0.7363	-0.8670	-0.8782	-0.7374	1	–
R_{ta}	-0.9904	-0.7064	-0.3432	-0.9905	0.6865	1

Source: own development.

Significant is only the correlation coefficient between FPE and CLR. Economic and mathematical model of the dependence of the value of FPE *(y)* on the coefficient CLR *(x)* is as follows:

$$y = 0.7377 + 0.1997x, R = 0.9998$$

Increasing the value of the current liquidity ratio by 1% leads to an increase in the value of the financial potential of PE "TH Tyverias" by 0.1997%.

Based on the analysis of financial indicators of the surveyed enterprises, a diagram is formed that characterizes the dynamics of financial potential for 2015-2019 and may be used by investors to make specific investment decisions (Fig. 7).

However, in order to make investment decisions, it is necessary to have forecast values of financial potential indicators. Therefore, it is advisable to use the regression equation to predict the expected values of the results.
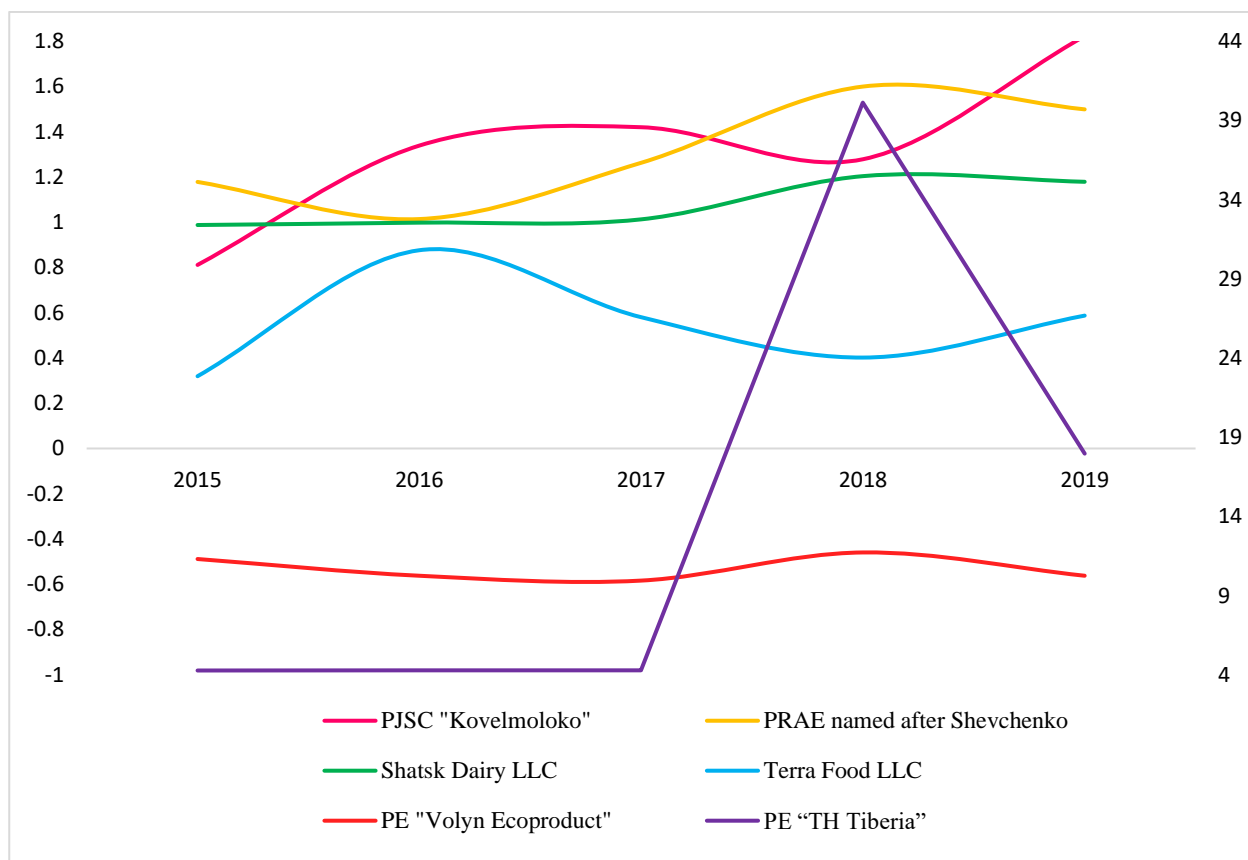

Fig. 7. Dynamics of indicators of the financial potential of enterprises of the dairy industry of the agro-industrial sector of Volyn region of Ukraine for 2015-2019
Source: developed based on the results of our own research.

It should be borne in mind that there is no transfer of the regularity of communication, which is measured in a variable set in statics to the dynamics. That is, in our opinion, such a study is not reliable and requires verification of the conditions of admissibility of such a transfer, which goes beyond statistics.

Estimated values for PJSC "Kovelmoloko" and LLC "Shatsk Dairy", the dynamics of which is described by regression and which is adequate to the experimental data, calculated using the functional service capabilities of the electronic software product EXCEL. Forecast indicators of the financial potential of the studied enterprises of the dairy industry of the agro-industrial sector of Ukraine are given in Table 13.

To find the forecast values of financial potential for basic enterprises of the dairy industry of the agro-industrial sector of Volyn region of Ukraine, namely: PRAE named after Shevchenko, LLC "Terra-Food", PE "Volyn Ecoproduct", PE "TH Tyveria" we used the moving average method (Table 12).

According to the results of the analysis of Table 13, we found that all enterprises, except PE "Volyn Ecoproduct" and LLC "Terra-Food" have a positive outlook. Such enterprises are profitable and financially stable. However, it should be borne in mind that such indicators are predictable, and other things being equal, the situation in enterprises may change significantly, which may lead to a decline or a significant increase in the level of financial potential.

Table 12. Forecast indicators of the financial potential of the enterprises of the dairy industry of the agro-industrial sector of the Volyn region of Ukraine for 2020-2021

Basic enterprises	Forecast period, years	Forecast values of the financial potential of enterprises
PJSC "Kovelmoloko"	2021	2.120
	2020	2.316
PRAE named after Shevchenko	2021	1.299
	2020	1.349
Shatsk Dairy LLC	2021	1.312
	2020	1.370
Terra Food LLC	2021	0.578
	2020	0.574
PE "Volyn Ecoproduct"	2021	-0.539
	2020	-0.536
PE "TH Tyveria"	2021	13.761
	2020	16.924

Source: own development.

It should be noted that the analysis of indicators in the short term is the simplest and most accurate, taking into account the largest share of factors that lead to an increase or decrease in the financial potential of enterprises. The forecast of financial indicators for the medium and long term is more complex, as it cannot always predict the action of all factors that affect the financial potential of enterprises.

CONCLUSIONS

Thus, the process of forecasting financial potential begins with forecasting the volume of production and sales, and further predict the financial results, cash flows, and reporting. Determining the future volume of production and sales is an entry point and a necessary element in establishing the relationship between the opportunities for enterprise development, investment needs, and financial resources.

The specifics of forecasting financial potential is that the company is characterized by interdependence and a certain degree of inertia. The latter characterizes the dependence of the value of any indicator at the moment on the state of the same indicator for the previous period but at the same time inadmissible abstraction from the influence of various factors. Therefore, the predicted value requires the use of a deterministic factor model that combines the result with the factor that affects it.

We analysed the dynamics of the main financial indicators of the studied enterprises of the dairy industry of the agro-industrial complex of Ukraine for the period 2015-2019, which have a direct impact on the formation of the level of their financial potential. In order to make investment decisions, it is also necessary to have forecast values of financial potential indicators. We used pre-developed regression equations in order to predict the possible expected values of the performance trait for basic enterprises belonging to the dairy industry of the agro-industrial sector of the Volyn region of Ukraine.

According to the results of the study, it is revealed that for enterprises with a low level

of the financial potential it is advisable to implement modern methods and tools of financial management, improve the skills of financial management staff, implement software products to automate financial management processes. For enterprises in the agricultural sector of Ukraine with a high level of financial potential, it is necessary to invest free cash in projects or financial assets, providing additional income, continuously monitor the financial condition of enterprises and environmental factors, benchmarking, constantly monitor changes and environmental impact and improve business management. processes.

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