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ANALYSIS AND FORECAST OF FINANCIAL RESULTS IN THE VINEYARD FARMS IN MOLDOVA

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Abstract

This paper presents a factorial analysis of changes in financial indicators obtained in the agricultural enterprises in the wine sector. The dynamic of profit obtained from 1 ha of bearing plantations and the level of grapes profitability during 2001-2011 is analyzed. To forecasting the level of grapes profitability for the period 2013-2016 there are used the correlation and regression methods.

Key words**:** *correlation and regression methods, financial results, forecasting, wine sector*

INTRODUCTION

In a modern market economy, the maximizing profitability is the fundamental main criterion of the enterprises decisions for attracting resources for the organization of production, to expand or restriction it. The increasing of economic efficiency has the economic and social effects for the producers - by saving the production factors, their rational use, reducing the costs in parallel with the improving of quality and therefore a better positioning in the competitive environment - and for the consumers by the increasing the nominal and real wages and thereby for the increasing their power of thrift, saving working time, sizing leisure time, etc. Profitability is defined as the ability of an agricultural unit to obtain the activity they carried out a profit in the condition of mobilization of available resources.

MATERIALS AND METHODS

In the research, the authors used data from specialized forms of agricultural enterprises. The following research methods were used: the chronological series method, the comparison method, the method of table and graphic, correlation and regression's method.

RESULTS AND DISCUSSIONS

Profitability is a essential part of economic efficiency and constitute a key element of determining the yield value of an agricultural unit or a product. An agricultural enterprise (the product) is profitable when it covers their production costs on account of their income and gets a certain profit. Profitability is one of the essential aspects of economic efficiency of an agricultural units, therefore of essential condition of production is what they must be not only useful but also profitable.

The gross profit on the level of the agricultural unit is calculated as the difference between the sum of the sales revenue and the sum of the finished products sold. The profit allows the identification of available resources and opportunities for development of agricultural units. Therefore, the static analysis is not sufficient. It should be compared with the calculated indicators of previous period on the basis of the results of analyzed units or units of the same size and with similar activities, accordance with the requirements of the comparative analysis. The profit reflects the management of consumed resources and has the essential components of business costs and revenues from the economic activity. Profitability is calculated

as relative sizes are comparable over time, space and organizational structure.

Table 1. The dynamic of the grape production profitability in agricultural enterprises in the Republic of Moldova 2001-2011

Year	Profit (MDL) calculated		The level of return,%
	1 q of sold product	1 ha from where the production was sold	
2001	28,17	845,1	20,58
2002	77,44	2904,0	58,47
2003	117,55	4807,7	77,10
2004	76,05	3438,8	44,87
2005	74,44	2344,7	31,02
2006	37,27	935,4	15,88
2007	48,45	1492,3	22,03
2008	21,54	799,30	9,60
2009	10,22	420,0	5,97
2010	26,96	563,6	8,59
2011	86,64	3691,0	36,53

Source: authors' calculations based on specialized forms of agricultural enterprises

The dynamics shows that producing grapes with high profitability indicators were recorded in 2002, 2003, 2004 and 2011. Between 1 q nominated calculated profit of product sold is higher than 76 MDL, profit calculated that 1 ha of grapes is sold increased by 2,900 MDL/ ha and the profitability indicates that every 1 MDL were achieved than 36.5 MDL profit. The analysis shows that the last 11 years in the production of grapes four years farms have achieved profitability of production that can allow an enlarged reproduction of and during the years 2006, 2008-2010 the level of profitability below 15.8% allows businesses to recover a minimum consumption incurred.

As a result of leveling of using the dynamics of analytical indicators in 2001-2011 using linear function to set the following:

• the obtained profit on 1 q of sold product has the trend ($\bar{N}_t$ = 55.0-3.3t) of decrease in annual average of 3.3 MDL;

• the obtained profit of 1 ha of sold grapes has the trend ($\bar{N}_t$ = 2022-131.2t) of decrease in annual average 131.2 MDL spite of those bearing the plantation area from which the grapes were sold to reduced;

• the level of profitability ($\bar{N}_t$ = 30.0-3.76t) - a decrease of 3.76% in annual average.

This situation shows that, if there are not taken further action to stop the decline of the main indicators of profitability, then the next 4-5 years grape production in agricultural enterprises will be non-profitable.

The studies of grape production profitability require identifying causal links between factors affecting profit with the purpose of future decisions or forecasts. One of the methods of economic and statistical analysis is the regression and correlation analysis.

In developing multifactorial regression model for determining the influence of the factors on the level of profitability of grapes (y) were included measurable factors (x1), with a systematic influence on it.

x1 - productivity of bearing vineyards, q/ha;

x2 - consumption per 1 ha of bearing plantations, MDL;

x3 – the surface of bearing plantations in averaged for an enterprise, ha;

x4 – the average selling price of 1 q grape, MDL;

x5 - the revenue share from the sale of grapes in total sum of industry revenues from crop plants and livestock sector [1].

In this research 325 agricultural enterprises were used from the period 2006-2011 using the STANDARD program (EXCEL, Statistics for WINDOWS). The multiple correlation coefficient R=0.73 shows that, between the profitability of grapes and exogenous factors included in the model are the remarkable intensity link. The coefficient of multiple determination R^2=53.3% indicates that variation in the level profitability grapes is influenced by factors included in the model in the amount of 53.3%. This situation demonstrates the selecting of main factors influencing the level of profitability of grapes.

Based on processing of information the following multiple regression equation was obtained:

$$\bar{y}\, x_1 ... x_5 = -19{,}32 + 3{,}2x_1 - 0{,}015x_2 + 0{,}010x_3 + 0{,}278x_4 + 0{,}03x_5$$

The regression's coefficients shows that profitability is increased in the following cases: increasing the productivity vineyards with 1 q/ha – by 3.2%; reducing the consumption to 1 ha in value 1000 MDL - by 15%; increasing the vine planting areas to a company with 10 hectares - 1.0%, increasing the selling price 1 q of grape on 1 MDL - by 0.278% deepening specialization level unit (%) - by 0.03%.

The biggest influence in modifying the profitability level has 2 main factors: productivity on 1 ha and consumption on 1 ha. This result differs from the real only by about 0.3%, which allows us to use the model for forecasting profitability level given the improving factors.

The forecast of profitability grapes until 2016 was determined from the obtained data and the multiple regression equation. Modifying studied factors we calculated the forecasting of grapes profitability level until 2016. Under the influence of improving of significant factors, the profitability of grapes in 2016 may reach an average level of 67.2% increased by 51.7 points compared to the average 2006-2011.

CONCLUSIONS

In order to raise the profitability of the wine sector should be accelerate the solutions of the main economic problems by creating the legislative and regulation base by the state; the scientifically base of the agrarian policy; the rational use of the resources potential; implementation of new technologies; reproduction the vine plantations in the most precious varieties of productivity.

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