ECONOMIC SUSTAINABILITY OF AGRICULTURAL ENTERPRISES

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Abstract

Dynamics of agricultural enterprises' economic stability of the Saratov region is analyzed. The estimation and classification of municipal unions is given by the authors. The influence of state support level on economic stability of enterprises is revealed.
Key words: *Dynamics, agriculture, economic sustainability, classification of municipal unions, development*

Introduction

The problems of stable development have become popular recently (the notion was first formulated by "Bruntland Commission" in 1987 and then at the conference in Rio-de-Janeiro in 1992) and also have been much spoken about in numerous publications, discussing concepts concerning resources, society, production, finance and so on.

We took much interest in this problem too and our works paid great attention to economical stability of agricultural enterprises allowing them to perform regime of self investing aimed at capital reproduction which deviates from stable equilibrium a little, under various conditions connected with natural and other factors. This regime is possible under conditions of normal weather, certain level of agrarian production and the degree to which it meets the demands for this produce.

Applied methodology

The indicators showing economical sustainability of agricultural enterprises are profit and cost recovery; the analysis made connected with 1993-2007 years. It resulted

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in estimation of economical of agricultural enterprises in Saratov region classification of municipal establishments into agriculture and some other recommendations.

Ensuring of sustainable functioning of agricultural enterprises is based in our opinion, on the efficient usage of land, capital, labor and business abilities of people and should be accompanied by state control and regulation in more successful from the financial point of view economy and about the gradual adaptation of a part of agricultural enterprises to market conditions of managing.

Indicators of fluctuation $(\sqrt{\sigma^2}, \sigma^2)$ characterize the general variation of the financial results, caused by all factors operating in economic system which can be divided conditionally into two groups: not dependent on the person and antropogenous factors. In annual fluctuation of the results of activity of the agricultural enterprises of area the role of casual (mostly meteorological) factors was measured basically during the period from 1993 to 2007 98-99 %. In accordance with this, the share of antropogenuous factors is measured from 1-2 %. Unlike a tendency of dynamics connected with the action of the long existing reasons and conditions of development, fluctuations are caused by the action of the short-term or cyclic factors influencing separate levels of a number and rejecting them from a tendency in one or in the other direction.

This dependence has been expressed by the scheme, characterizing the main factors influence on agricultural enterprises' economic sustainability (Fig. 1)

Figure. 1 - Agricultural enterprises' sustainability increase factors
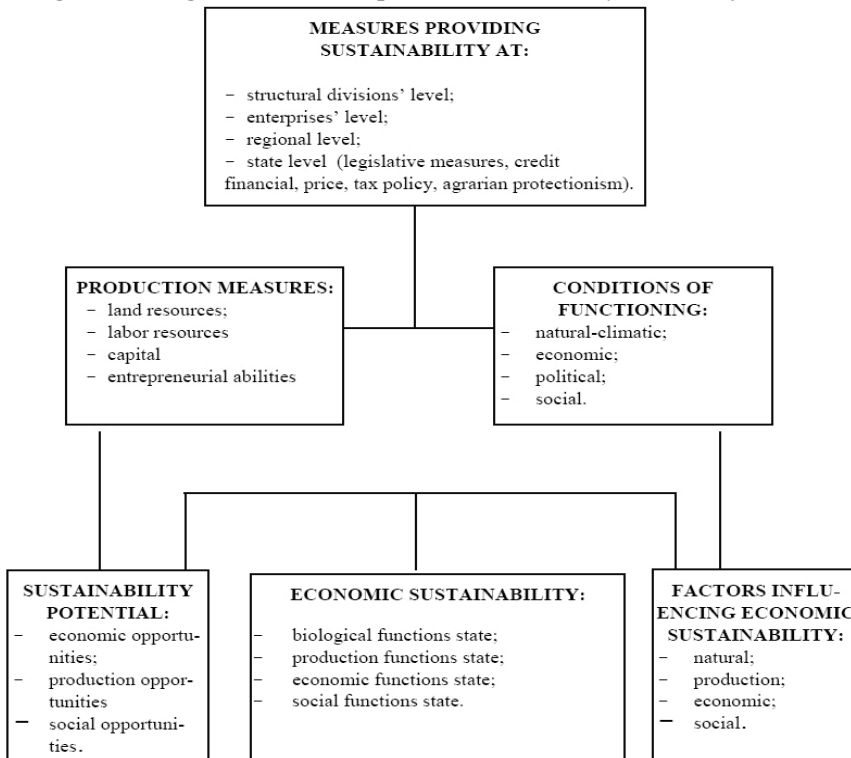
Researching results with discussion

To estimate economic sustainability there were selected 318 large-scale enterprises from 38 districts of Saratov region. Significant part(49 %) of which according to the results of 1993-2002 activities were non-profitable.(table 1)

Table 1 – Dynamics of Financial Results in Agribusinesses of Saratov Region (1993-2007)

Figures	revenue (+), loss (-), thousand rubles			Returns of investment, %		
	1993-1997	1998-2002	2003-2007	1993-1997	1998-2002	2003-2007
Mean: Prime arithmetical	-577	-257	7492	79	95	129
Weighted arithmetical	-505	-172	7716	83	98	130
y_{max}	-112	1430	14384	97	116	160
y_{min}	-1772	-1340	2341	56	74	108
Variation range R	1659	2769	12043	41	42	52
Total variance σ^2	137893	592032	16290084	133	126	252
Accidental variance α	0,990	0,741	0,980	0,989	0,909	0,775
Determination coefficient	0,010	0,259	0,020	0,011	0,091	0,225
Mean-square deviation $\sigma_{ocm.}$	369	662	3996	12	11	14
Coefficient of variation, % v	64,0	-257,8	53,3	14,5	11,2	10,8
Spearman correlation coefficient	-0,087	0,508	0,515	-0,062	0,314	0,519

To summarize, financial result of enterprises activity in the aggregate was negative. During the next five years the number of non-profitable enterprises was constantly decreasing, and according to the results of 2007 performance their share was less 10 %, which was the positive process connected with improvement of economic conditions of farming, some additional provision of material-technical resources. What's more, Saratov region variety of natural conditions sometimes leads to thousand fold difference in the amount of financial results got.

Relative profitability figures are widely used in farming since absolute profit does not allow assessing fully economic results of production. To show profitability we use the level of expenses payback, which is the ratio of income to total production costs. Table 1 shows that the expenses payback increases when the level of absolute profit grows up (i.e. losses are reduced). During 5 recent years the number of enterprises increased where the level of expenses payback is approximately 130%. Stagnation of the average long-term payback is a result of the change of the ratio of revenue to expenses. Consequently the amount of profit per ruble of expenses is not reduced. It is proved by the difference between the levels of prime mean and weighted arithmetical for both absolute and relative financial results caused by the covariation value. Covariation is usually positive, which indicates the production concentration on profitable farms which is more successful from the financial point of view and about the gradual adaptation of a

part of agricultural enterprises to market conditions of managing.

Indicators of fluctuation $(\sqrt{\sigma^2}, \sigma^2)$ characterize the general variation of the financial results, caused by all factors operating in economic system which can be divided conditionally into two groups: not dependent on the person and anthropogenous factors. In annual fluctuation of the results of activity of the agricultural enterprises of area the role of casual (mostly meteorological) factors was measured basically during the period from 1993 to 2007 98-99 %. In accordance with this, the share of anthropogenous factors is measured from 1-2 %. Unlike a tendency of dynamics connected with the action of the long existing reasons and conditions of development, fluctuations are caused by the action of the short-term or cyclic factors influencing separate levels of a number and rejecting them from a tendency in one or in the other direction.

Tendencies and profit fluctuations in calculation for one agricultural enterprise of area are presented on fig. 2.

Figure 2. - Profit dynamics in calculation for 1 agricultural enterprise in the Saratov region, thousands of rubles.
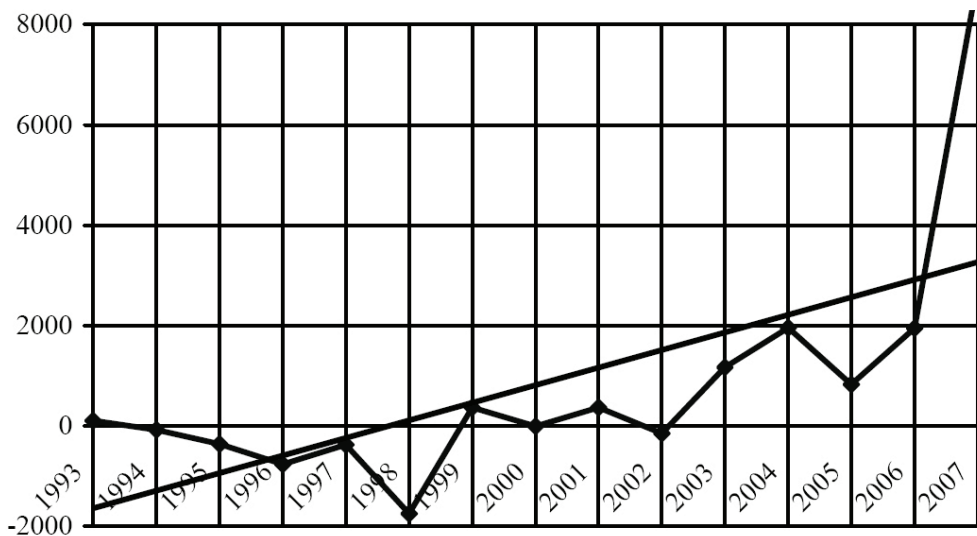
In measurement of a tendency of dynamics of profit (loss) the fluctuation of levels played only a role of hindrances, «information noise» from which you'd better abstract. Peak fluctuations of financial results are economically extremely undesirable, as they interfere normal functioning of the agro-industrial complex. For the revealing of type of fluctuations we will define the factor of auto-correlation of deviations from a trend - it is equal 0,104. The received value tells about the casual-distributed fluctuations in time (factors are close to zero, and signs on deviations alternate chaotically and number of positive deviations is close to the number of negative). These are irregular, chaotic fluctuations can arise at an interference (imposing) of a set of fluctuations with cycles different in duration or as a result of the same chaotic fluctuation of the deposits' sum, air temperatures etc.
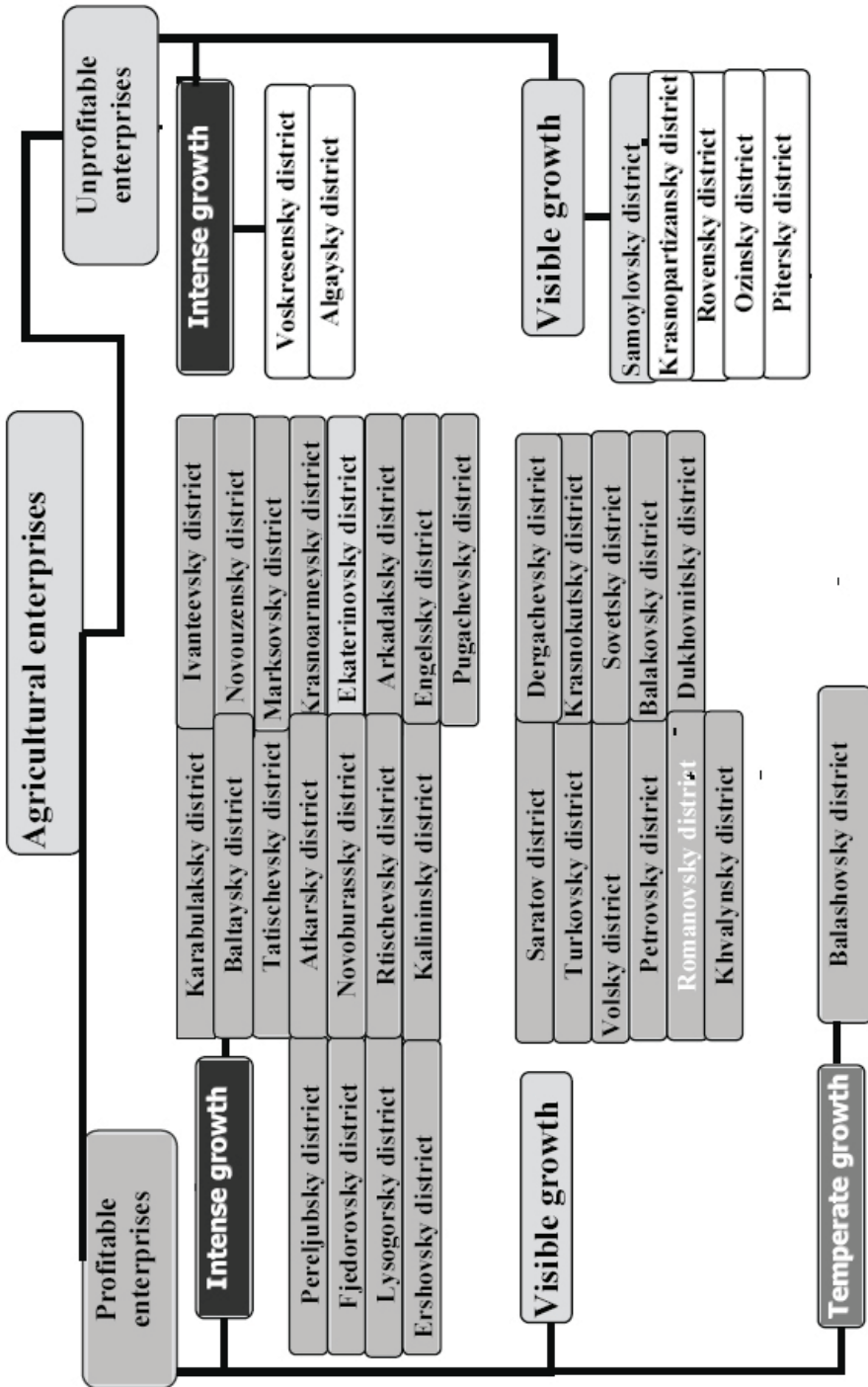
Conclusion

The variation factor characterizes levels' fluctuation, without reflecting their evolution. For the estimation of stability of dynamics of a studied sign we used the factor of correlation of Spirmen's ranks. It can accept values in limits from 0 to ± 1. The more close the factor to + 1, the more close growth of levels of a number to continuous, hence, above stability of growth; the more close to-1, the more stable decrease in a studied indicator; at value of factor of equal 0 changes are unstable.

So, the dynamics of the financial results of activity of the agricultural enterprises during the period 1993-1997 is characterized by weak decrease of studied indicators (P profit = -0,087, P compensated expenses = -0,062). During the next years, there occur essential positive changes: stability of growth of financial results of activity of the agricultural enterprises is clearly seen, and, according to the value of indicators is accurately traced, stability of growth of profit can be characterized as appreciable (ρ =0,508 and 0,515), and an economic return – as moderated (ρ =0,314 and 0,519).

As a result for the period from 1993 for 2007 positive financial results have been noted in 31 areas at agricultural enterprises. And only in 7 from 38 areas it was not possible to cover cumulative costs for last 15 years a gain from production realization (works, services). At an estimation of stability of dynamics of financial results, following results have been received: in 21 area "strong" stability of growth economic indicators (the factor of correlation of ranks accepts values from +0,7 to +1,0) is traced; in 16 areas– as "appreciable" (factor of correlation of ranks from +0,5 to +0,7) and only in 1 area (Fig. 3).

Figure 3. Distribution of the agricultural enterprises in Saratov region according to the stability level in 2003-2007

Agricultural enterprises

Unprofitable enterprises

Intense growth

- Voskresensky district
- Algaysky district

Visible growth

- Samoylovsky district
- Krasnopartizansky district
- Rovensky district
- Ozinsky district
- Pitersky district

Profitable enterprises

Intense growth

- Karabulaksky district
- Baltaysky district
- Tatischevsky district
- Atkarsky district
- Novoburassky district
- Rtischevsky district
- Kalininsky district
- Ivanteevsky district
- Novouzensky district
- Marksovsky district
- Krasnoarmeysky district
- Ekaterinovsky district
- Arkadaksky district
- Engelssky district
- Pugachevsky district
- Pereljubsky district
- Fjedorovsky district
- Lysogorsky district
- Ershovsky district

Visible growth

- Saratov district
- Turkovsky district
- Volsky district
- Petrovsky district
- Romanovsky district
- Khvalynsky district
- Dergachevsky district
- Krasnokutsky district
- Sovetsky district
- Balakovsky district
- Dukhovnitsky district

Temperate growth

- Balashovsky district

Analyzing these data we are sure that even minor positive changes of the economic conditions promote improvement of the financial results in enterprises activity, considerably raising their stability. By all means, agricultural enterprises stability rising in Saratov region depends on a diversity of problems solution, the special role belonging to the investment process mainstreaming in agrarian sector, to our opinion.

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