INFLUENCE OF INVESTMENTS ON THE GROSS DOMESTIC PRODUCT FROM AGRARIAN AND FOOD SECTOR OF REPUBLIC OF MOLDOVA

INFLUENȚA INVESTIȚIILOR ASUPRA PIB-ULUI DIN SECTORUL AGROALIMENTAR AL R. MOLDOVA

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Abstract. *Methods on statistical processing data the received in agrarian and industrial sector of Republic Moldova during the analyzed period 1995-2006 have been analyzed. Have established a level of influence of the investments enclosed both in agriculture, and in the food-processing industry in relation to the Total Internal Product of agrarian and industrial sector of Republic Moldova.*

Rezumat. *Au fost analizate metodele de prelucrare statistică a datelor obținute în sectorul agroalimentar al Republicii Moldova în perioada anilor 1995-2006. S-a stabilit nivelul de influență a investițiilor alocate, atât în agricultură, cât şi cele din industria alimentară asupra produsului intern brut din sectorul agroalimentar al Republicii Moldova.*

For economy of Republic Moldova the investment of the investment into all of branch of the country is very important, but the special attention needs to be given an agriculture which gives raw material for the food-processing industry and fresh production for realization in the markets of republic, and the food-processing industry giving production which is in great demand at the population of republic and is exported.

MATERIALS AND METHODS

Data of the National Bureau of Statistics of Republic Moldova (the Statistical year-book for 2002 - 2006) and annual reports of National Bank of Moldova for 2006 have been used. Data on the Total Internal Product and under investments on agriculture and the food-processing industry of national economy were processed by means of computer program Excel.

RESULTS AND DISCUSSIONS

In the international practice recently it is very often used quantitative and quality standard of investment process at use to statistical data processing of the various mathematical formulas received at use.

Those attributes which can be characterized quantitatively concern to quantitative estimations. After studying the sample represents a number of the varying values which have been written down in that sequence in what they have been received. As to agrarian and industrial sector of Republic Moldova mathematical

formulas for statistical data processing which application will allow to concern to specificity of manufacture of agricultural production and its processing adequately have been used.

On the basis of official data for 11 years it is possible to analyze connection between the Total Internal Product from agrarian and industrial sector and the investments enclosed both in agriculture, and into the food-processing industry of national economy. For performance of calculations on influence of investments on the Total Internal Product the statistical formulas presented in table 1 were used.

On the basis of above brought formulas using computer program Excel have made calculations of influence of investments enclosed both in an agriculture, and in the food-processing industry in relation to the Total Internal Product of agrarian and industrial sector of Republic Moldova.

Table 1

Methods of statistical data processing received in agrarian and industrial sector of national economy

Parameters	Settlement formulas
Average arithmetic	$\overline{X} = \frac{\Sigma X}{n}$
Dispersion	$S^2 = \frac{\sum (x - \overline{x})^2}{n - 1}$
Standard deviation	$S = \sqrt{S^2}$
Factor of a variation	$V = \frac{\pm S}{\overline{x}} * 100\%$
Error of average size	$S_{\overline{x}} = \frac{S}{\sqrt{n}}$
Relative error, %	$S_{\overline{x}}\% = \frac{S_{\overline{x}}}{\overline{x}} * 100$
Factor of correlation	$^{*}r = \frac{\sum (x - \overline{x}) * (y - \overline{y})}{\sqrt{\sum (x - \overline{x})^2 * \sum (y - \overline{y})^2}}$
Factor of determination	$d_{xy} = r^2$
Standard error of factor of correlation	$S_r = \sqrt{\frac{1 - r^2}{n - 2}}$
Criterion of importance of factor of correlation	$t_r = \frac{r}{S_r}$

Specification: * r receives value between 0 and 1;

r = 0 - correlation connection between X and Y is absent;

0 < r <0.3 - correlation connection between X and Y weak;

0.3 < r <0.7 - correlation connection between X and Y average;

0.7 < r <1 - correlation connection between X and Y strong.

Results of statistical processing of influence of the enclosed investments on the Total Internal Product (table 2) received in agrarian and industrial sector shows a role of their investments, both in agriculture, and in the food-processing industry. It would be desirable to note, that special influence on the Total Internal Product received from agrarian and industrial sector, have rendered the investments enclosed in the food-processing industry.

Using statistical relations it is possible to determine a direction of growth of investment streams in the certain branch or another proceeding from statistical processing the received results for the previous period of activity. It is necessary to note, that for reception enough probable results, for statistical data processing it is necessary to take the results received for 10 years. Thus, it is possible to avoid the sharp variations received in one year which confirm increase in an average error of a deviation and influence of given or other factor on dependence.

Table 2

Influence of investments on the Total Internal Product from agrarian and industrial sector of Republic Moldova for the period 1995-2006

	X1	**X2**	**Y**	**Y Adjusted**	**Deviation**
	91,1	117,4	2830,2	2990,115	-159,915
	97,9	220,7	3192,9	3793,008	-600,108
	118,4	225,7	3405,1	3787,589	-382,489
	81,7	239,2	3187,6	3975,036	-787,436
	56,7	145,8	4033,3	3290,475	742,825
	60,2	160	5407,4	3395,212	2012,188
	113,7	400,6	6113,5	5182,582	930,918
	159,9	445,4	6858,5	5435,838	1422,662
	186,7	753,1	7897,2	7813,049	84,151
	308,2	648	8811,9	6714,247	2097,653
	425,1	928,6	9003	8679,111	323,889
	487,2	1125,3	9845,4	10100,047	-254,647
Average arithmetic	182,233	450,817	5429,692		
Standard deviation	145,6402	337,5313	2570,5354		
Factor of a variation	79,9196	74,8711	47,3422		
Error of average size	42,043	97,437	742,050		
Relative error, %	23,07081	21,61342	13,66651		
Pair correlation					
	X1X2	**X2Y**	**X1Y**		
Factor of correlation	0,944446	0,922086	0,857425		
Standard error of factor	0,103934	0,122375	0,162734		

of correlation					
Criterion of importance of factor of correlation	9,087019	7,534905	5,268879		
Factor of determination	0,8919782	0,8502429	0,7351771		
Influence of the factor of %		95,8561602	-10,6647526		
Plural correlation					
Ryx1x2			0,922992		
Standard error			0,12169056		
Criterion of importance of factor of correlation			7,5847454		
Factor of determination			0,85191408		
Regress					
Factor of regress B0			2260,65785		
Factor of regress B1			-2,195316		
Factor of regress B2			7,9170		
Factor of standard regress BS1			-0,1243812		
Factor of standard regress BS2			1,03955751		

The note: X1 - investments into agriculture; X2 - investments into the food-processing industry; Y - the Total Internal Product from agrarian and industrial sector.

CONCLUSIONS

On the basis of above told it is possible to draw a conclusion, that statistical processing of influence of investments enclosed both in an agriculture, and in the food-processing industry on the Total Internal Product received from agrarian and industrial sector, should become the necessary method at a direction of a monetary stream of means in the future. Using yielded results it is possible to determine, in what branch the investment of investments will lead to substantial growth of the Total Internal Product. During too time it is possible to avoid errors at a direction of investment process and in reception of the maximal result of the Total Internal Product with the moderate investment effort.

REFERENCES

1. **Stoanova E.S.,** 1999– *Finansovyj menedžment.Moskva:* Perspektiva,1999,656 s.
2. **Vasilescu I., Cicea C., Dobrea C**., 2003 - *Eficiența investițiilor. Aplicată.* LUMINA-LEX.
3. **XXX,** 2002, 2004, 2005, 2006 - *Anuarul Statistic al Moldovei.*
4. **XXX,** 2006 **-** *Raportul anual al Băncii Naționale a Moldovei.*