Analysis of factors affecting income variation in farms

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Abstract: *There are many factors that direct and indirect contributes to the annual efficiency of an entity. One of those factors is income factor. At analyzing presses some more factors changes the incomes increasing, like tangible assets, intangible assets, and labor's productivity. Analyzing those factors effect gives the superior efficiency of entities. Accordingly, the owners can make better decision making by informing about current circumstances. In the same meaning, this analyze method provides a systematic picture of financial indicators. The paper focused to show analysing method of factors for income increasing.*

Keywords: *Income, analysing method, desicion making in accounting and finance .*

INTRODUCTION

We believe that it is expedient to use its system, both as a result indicator to express efficiency on farms. One of them is the annual income that farms receive (D). In the process of analysis, it should be taken into account that many factors affect any outcome indicator, including changes in income. Because, taking into account the impact of these factors, it is possible to look for internal opportunities to increase this indicator accordingly. To do this, it is necessary to identify the factors that affect it. To do this, we consider that this indicator is related to other factors. It is known that farm income is equal to the number of employees plus the income per employee. To do this, we can use the following classic formula:

$$y = X_{0d.} * X_{ud} \; ;$$

Where: X_{od} is the average number of employees employed on a farm; X_{ud} is the amount of average income per employee employed on a farm.

MAIN PART

The amount of average earnings per employee employed on a farm also depends on a number of factors. Such factors include the return on assets of fixed assets, the share of fixed assets in total fixed assets and the level of armaments of employees employed on the farm. The relationship between the annual income received by farms and the above factors is calculated by the following equation:

$$Д = X_{0d.} * A_{ad} * A_{кх} * X_{кd} \; ;$$

To facilitate the mathematical expression of this formula, we define them accordingly as follows. We denote the result, that is, "D" by "U", the factors in sequence. Then our formula will have the following form:

$$y = G_1 * G_2 * G_3 * G_4 = \prod_{i=1}^{n} G_i \quad (i=I,n);$$

G_1- the average number of employees on the farm; G_2- return on fixed assets; G_3- the share of the active part of fixed assets in total fixed assets; G_4- The level of armament of employees working on the farm.

The analyzed outcome indicator, i.e., the factors influencing its change in order to increase the annual income that farms receive, needs to be identified. In order to do this, it is advisable to start by determining the difference $(\Delta У)$ in the outcome indicator, which is the annual income that these farms receive. To do this, the actual amount of the result indicator $(\prod_{i=1}^{n} У_{ix})$ is subtracted from its planned amount $(\prod_{i=1}^{n} У_{ip})$. The fact that the actual amount of the result indicator is explained by factors can be expressed as follows:

$$\prod_{i=1}^{n} У_{ix} = (G_{1x} * G_{2x} * G_{3x} * G_{4x})$$

The spread formula for the planned amount of this indicator will have the following form:

$$\prod_{i=1}^{n} У_{ip} = (G_{1p} * G_{2p} * G_{3p} * G_{4p})$$

Now, the difference between these indicators can be easily identified in both forms. To do this, we recommend the following formula:

$$\Delta У = \prod_{i=1}^{n} У_{ix} - \prod_{i=1}^{n} У_{ip} = (G_{1x} * G_{2x} * G_{3x} * G_{4x}) - (G_{1p} * G_{2p} * G_{3p} * G_{4p})$$
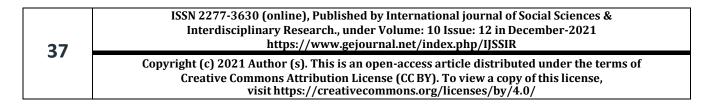
Now the impact of the above factors on the change in the annual income received by farms can be determined sequentially using the chain replacement method of economic analysis. To do this, we need to perform the following steps:

To determine the effect of the first factor, ie the change in the average number of employees on the farm, on the change in the annual income received by the farm, the result is recalculated by the actual amount of the first three factors in the plan (base year). From the result, the planned amount of this indicator is lost. The mathematical expression for this is as follows:

$$\Delta У G_1 = (G_{1x} * G_{2p} * G_{3p} * G_{4p}) - (G_{1p} * G_{2p} * G_{3p} * G_{4p}) = \prod_{i=1}^{n} У_{G1} - \prod_{i=1}^{n} У_{ip}$$

To determine the effect of the second factor on the return on fixed assets, the actual amount of the first and second factors is recalculated by the amount of the remaining two factors in the plan (base year), ie in this case they are multiplied. The result is the first factor of this indicator, ie the amount recalculated with the change in the average number of employees employed on the farm. The mathematical expression for this can be described as follows:

$$\Delta У G_2 = (G_{1x} * G_{2x} * G_{3p} * G_{4p}) - (G_{1x} * G_{2p} * G_{3p} * G_{4p}) = \prod_{i=1}^{n} У_{G2} - \prod_{i=1}^{n} У_{G1}$$

To determine the effect of the third factor on the change in annual income of farms, the actual amount of the first, second and third factors, ie the level of armaments employed on the farm in the base year, ie in this case they are also multiplied. The result is the amount of this indicator recalculated with the change of the first and second factors. We recommend expressing the mathematical relationship of this in the following way:

$$\Delta y G_3 = (G_{1x} * G_{2x} * G_{3x} * G_{4p}) - (G_{1x} * G_{2x} * G_{3p} * G_{4p}) = \prod_{i=1}^{n} y_{G3} - \prod_{i=1}^{n} y_{G2}$$

To determine the effect of the fourth factor, ie the change in the level of armaments of farm workers, on the change in the indicator of annual income of the farms under study, the result is recalculated with the actual amount of the first, second, third and fourth factors, ie in this case they multiplied. This is equal to the actual amount of the result. The result is the amount of this indicator recalculated with the change of the first, second and third factors. We recommend expressing the mathematical relationship of this in the following way:

$$\Delta y G_4 = (G_{1x} * G_{2x} * G_{3x} * G_{4x}) - (G_{1x} * G_{2x} * G_{3x} * G_{4p}) = \prod_{i=1}^{n} y_{G4} - \prod_{i=1}^{n} y_{G3}$$
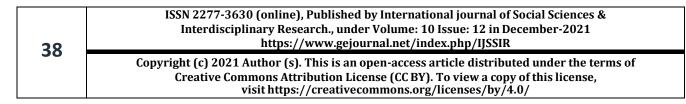
The sum of the effects of all the factors (if the effect is negative, the method of obtaining a mathematical expression is used) is equal to the total difference of the annual income received by the farms, i.e., the change in the size of the result indicator. This can be expressed in the following connection:

$$\Delta y = \Delta y G_1 \pm \Delta y G_2 \pm \Delta y G_3 \pm \Delta y G_4$$

In order to prove these theoretical issues in the analysis process, they will need to be addressed using practical data. In the research process, we used this method in the analysis of several farm activities, and as a result of factor analysis, we showed ways to find the existing internal opportunities to increase the annual income that farms receive.

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