CONVENTIONAL AGRICULTURE - THEORETICAL ANALYSIS OF PROFITABILITY

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Abstract:. *Conventional farming is currently "under pressure" compared to organic farming. These two systems, different in their mode of action, each have advantages and disadvantages. However, although it seems that conventional agriculture is "losing ground" in favor of ecological/organic agriculture, we must not minimize the role of conventional agriculture. Conventional agriculture is based on the concentration of production, widely uses different components of the technical system, chemical fertilizers / pesticides. On the other hand, conventional agriculture produces competitive products, for the market, through intensive cultivation, based on the concentration and specialization of production. This concentration determines the minimization of production costs and the maximization of profit. All this is done through profitability analyses, at the level of each farm. These analyzes start from numerous theoretical aspects that must be well mastered by exploitation managers. The aspects related to profitability, in general, and profitability threshold at the level of agricultural holdings, who practices conventional agriculture, are analyzed during the work.*

Key words: *conventional, farming, profitability, agricultural system, effect*

INTRODUCTION

At the world level, a process of structural transformation is registered, as a result of the emergence of new global challenges, with a long-term effect, which require the development of a strategic vision in the field, in order to anticipate the reduction of food production. These include: the growing global population , increased pressure caused by the limitation/expensive nature of natural resources (which determines ever higher prices for inputs), global warming (with an effect on water resources and the vulnerability of crops), the aging of the European population, increased urbanization. Under these conditions, the current challenges for the agricultural production system are difficult to measure.

The agricultural system can be viewed as a collection of technology/equipment, where soil is the main production resource. The concept of agricultural system includes both traditional systems with mechanization and chemical elements implemented on small and medium areas, as well as intensive systems with high mechanization and chemicalization and high energy consumption, they use industrial agricultural methods, on large areas of land. The choice of agricultural system currently depends on the level of technical equipment, professional knowledge, general mentality, level of education and respect for nature of all the people working in this field but also the economic-social and environmental conditions of each country. [1,2].

The current agricultural system consists of: conventional agriculture, ecological agriculture (biological, organic, sustainable) and precision agriculture. Intensive (industrialized) agricultural systems are characterized by the exploitation of large areas of land, diversified level of mechanization and high yield [3,4,12,13]. The main disadvantage of this system is increased pollution as it requires the use of chemical fertilizers and pesticides to achieve high yields and to control weeds, diseases and pests. Nowadays, this type of agriculture has managed to affect the environment, especially when it involves different components of the agricultural technological system without taking into account

local specific local aspects (climate, soil, relief, etc) [5,6]. This agricultural system is especially based on the concentration and specialization of production. The result of conventional agriculture is obtaining competitive products (on the market for agricultural products). Its main goal is to minimize costs, maximize productivity, thereby maximizing profits. The main concerns are related in the case of conventional agriculture to profitability [7,8,9,10,11].

MATERIALS AND METHODS

Profitability can be defined as the ability to use factors of production, regardless of their source, to make a profit. Profitability is a synthetic form, which refers to the means of production and the labor force used to evaluate the efficiency of the economic and financial activities of agricultural production enterprises, taking into account the three stages of the economic cycle (supply, production and sales). [14,15]. The calculation and analysis of profitability is based on a set of indicators, presented in the next section.

RESEARCH RESULTS

The analysis of economic indicators in conventional agricultural units starts from the use of two concepts: size (physical) and size (economic size) of agricultural holdings. The (physical) size of an agricultural holding is mainly represented by the land area or the number of animals owned. The second concept tends to become dominant under conditions of agricultural intensification and integration at the level of some agricultural holdings [16]

The quantification of profitability within these types of holdings uses two categories of indicators - profit and profitability rates. The level of absolute profitability is represented by profit, and the way in which the use of the holding's resources bring profit is the rate of return.

Regarding the indicators that express profitability in absolute terms, we mention the result related to turnover and the result of exploitation. To assess profitability in a relative way, the commercial profitability rate is calculated (which is influenced by the structure of capitalized production, the average selling price, the unit cost of production) and that of the consumed resources.The rate of return is expressed as a ratio between an indicator of results (profit or loss) and an indicator expressing a flow of activity (net turnover or resources consumed).

Due to the combination of elements in the balance sheet, it is possible to formulate a large number of rates, but this must be selected according to the problem to be solved and the position of the analyst. As a traditional financial analysis tool, widely used, important updates and deepenings have been registered in recent years in this segment.

Corresponding to the elements considered regarding the analysis of profitability and its rates, several types can be distinguished [12,13]:

- ✓ Rates deriving from reporting expenses to revenues obtained
- ✓ Rates of commercial profitability (of profitability - depending on the value of production)
- ✓ Rate of return on resources consumed (depending on total expenses)
- ✓ Rates of economic return (of return)
- ✓ Rates of financial return

The level of the commercial rate of return depends on the structure of capitalized production, on the average selling price, as well as on the unit cost of production. The increase in the rate of gross margin on sales expresses an improvement in the commercial activity of the agricultural holding, as well as a more efficient management of production costs. However, it is necessary to correlate the rate of commercial return with information on the dynamics of the rate of return on the resources consumed.

The aspects that indicate the importance of knowing the rates of return refer to: the choice of an optimal structure of crops or animal species to determine the efficiency of production activities; stimulating the interest of the agricultural producer in choosing the most profitable products, including, at the same time, their qualitative aspect.

In order to assess the profitability of vegetable and animal agricultural products, a series of indicators of economic efficiency are also analyzed regarding[17,18,19,20]:

- ✓ labor consumption,
- ✓ labor productivity in physical and value expression,
- ✓ the level of profit or loss per unit of production / product,
- ✓ the break-even point (in value and physical units)
- ✓ exploitation risk rate
- ✓ security index

Regarding labor consumption, it is expressed in man-hours per hectare (mechanical works) and man-days per hectare (for manual works).

With regard to labor productivity, it will be calculated by reporting the consumption of man-hours and man-days per product unit, and in value expression it will be expressed through the measurement unit lei/man-hour.

The profitability threshold in value units will be calculated by relating the fixed expenses to the margin on the variable expenses, and the profitability threshold in physical units is determined by relating the profitability threshold in value units to the capitalization price.

The exploitation risk rate is determined by relating the profitability threshold in value units to the value of the main production, expressed as a percentage.

The security index is determined by relating the difference between the value of the main production and the break-even point to the value of the main production.

The break-even point is the level at which income is equal to expenses, and the level of profit is zero. From this threshold, the company (the farm) starts to make a profit. This threshold can be expressed in physical units, product units or value units.

An important element that should not be lost sight of is related to the subsidies granted to agricultural producers. It should be mentioned that in our country it was possible to maintain the profitability of agricultural products only through the granting of subsidies, because the level of capitalization prices, for most products, was very low, not taking into account the costs at which the products were made. "direct payments" (income support for farmers).Here are included the basic payment scheme (BPS), the single surface payment scheme (SAPS), the greening payment, the young farmers scheme, coupled payments, areas with natural constraints/areas more less favoured, basic payment redistribution schemes. Besides these, were also included market and rural development measures.

Agricultural holdings in Romania, characterized (still in some areas) by a high degree of fragmentation of agricultural land, face a series of aspects that reduce the possibilities of increasing economic performance, such as: low production yields per surface unit and animal head; decapitalization, insufficient allocations of material and financial resources that reduce their capacity for improvement and implicitly the competitiveness of the products obtained; the application of technologies with low consumption of inputs absolutely necessary to achieve yields, etc[15,18]:.

The calculation and analysis of the indicators calculated at the microeconomic level (agricultural holding) presented above lead to the calculation of the indicators at the branch level. They are important for agriculture as follows [20]:

- the used agricultural area (ha) and the share of crops in the total agricultural area,
- average yields and production intended for sale,
- the share of the main crops in the vegetable gross agricultural product.

To these are added:
- record of economic accounts in agriculture,
- global economic efficiency in national agriculture - gross value added (GVA), net value added (NVA), the value of intermediate consumption, the weight of intermediate consumption in the value of production, the evolution and structure of GVA, the weight of NVA in the value of production, the gross formation of fixed capital, net formation of fixed capital [19,20].

Economic accounts in agriculture are structured as follows (Table 1):

Table 1.

Economic Accounts of Agriculture

(1)vegetable production
(2)animal production
(3)agricultural production of goods (row1+2)
(4) production of agricultural services
(5)agricultural production (row.3+4)
(6)processing of agricultural products
(7)production of the agricultural branch (row5+6)
(8) total intermediate consumption
(9) seeds and planting material
(10) energy; lubricant
(11) fertilizers and amendments
(12) crop protection products and pesticides
(13) veterinary expenses
(14) feed
(15) maintenance of materials
(16) maintenance of buildings
(17) agricultural services
(18)indirectly measured financial intermediation services
(19) other goods and services
(20)gross added value in basic prices (row7-8)
(21)consumption of fixed capital
(22) equipment
(23) construction
(24) plantations
(25) other
(26) net added value in basic prices (row 9-10)
(27) remuneration of employees
(28) other taxes on production
(29) other subsidies on production
(30) factors' income (row 11-13+14)
(31) net operating surplus / mixed income (row 15-12)
(32) lease payable
(33) payable interest
(34) interest receivable
(35) net income of the enterprise (rd. 16-17-18+19)
(36) gross fixed capital formation(without deductible vat)
(37) net formation of fixed capital (without deductible vat)

Source: [6] and processing according to the National Institute of Statistics (Economic Accounts from Agriculture) [21,22]

The global economic efficiency in agriculture is based on the calculation of the following indicators (Table 2):

Table 2.

Global economic efficiency in agriculture

	Economic Efficiency Indicators	Unit
1.	The share of intermediate consumption in the value of agriculture product	%
2.	The share of gross added value in the value of agriculture product	%
3.	Gross added value at one monetary unit intermediate consumption	coefficient
4.	Dynamics of net added value	%
5.	Dynamics of producers' incomes	%
6.	Producers' income in the value of agricultural production	%
7.	Gross fixed capital formation	mil monetary unit
8.	Net formation of fixed capital	mil monetary unit
9.	Labor productivity in agriculture calculated at the value of agricultural production	Thousands monetary unit /person employed full-time
10.	Labor productivity in agriculture calculated at gross added value	Thousands monetary unit /person employed full-time

Source: own processing based on INS data [21,22]

CONCLUSIONS

The practice of agriculture, even if it is characterized by a series of technical data, like any contemporary endeavor, is an economic activity, based on efficiency criteria;

Economic efficiency, as defined in specialized literature, represents the ratio between effect and effort, it should be as high as possible, or if the two elements are inversely related, then the result should be as low as possible.

From a mathematical-economic point of view, in order to achieve maximum efficiency, the effect should be maximum and the effort should be minimum. In economics this cannot be achieved, in the sense that the maximum effect cannot be achieved without any effort. To be sure that economic efficiency is achieved, one will either tend to achieve the maximum effect, certainly with some effort, or to achieve some effect, but knowing that the minimum resources have been used.

In these conditions, to be sure that in the production process of agricultural goods, either the maximum effect or the minimum effort is reached, linear programming is usually used (and implicitly the optimization of production).

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