

INCOME CALCULATION METHODOLOGY OF AGRICULTURAL ENTERPRISES REGARDING THE EU-ENLARGEMENT

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As time was drawing near to the date of Hungary joining the European Union experts felt an increasing need for the harmonization of existing systems and the adoption of practices used in the EU countries. Simultaneously, due to arising problems during the development of international accountancy and the enforcement of current legislation the formulation of a new accountancy law was deemed necessary. By adopting this act Hungarian accountancy regulations have come ever closer to EU practices. Consequently, adaptation and harmonization in the field of accountancy have been implemented in part by the announcement of the new Accountancy Act. Hungary intended to meet the requirements stated by the European Union by introducing, among others, the FADN (Farm Accountancy Data Network) agricultural data network, and the System of Agricultural Accounts as well. Despite the efforts towards rapprochement between accountancy systems and the harmonization of information systems, a judgement of enterprise performance and the practice of income calculation and profitability analysis show great differences in many aspects between the member countries. Considering that financing and profitability problems of enterprises are very important questions in the economy, I regard a comparison of income calculation methods of agricultural enterprises used in some EU countries essential.

Keywords: income, calculation, system's harmonization, FADN, profit and loss statement

1. PRECEDENTS AND APPLIED METHODS

A clear definition and reporting methods of profit and profitability are of great importance, because besides conventionally accepted definitions and indices international practices of judgement of companies/enterprises (e.g. credit analysis), inland and international economic policy and the support system of the EU create new categories from time to time, which can influence the judgement of company activities in different sectors considerably. After recognizing these issues it is appropriate to review those categories used in accounting, farm business management and economics and those income calculation methods, which have high importance in evaluating the results of economic and especially agricultural activities. Regarding the above mentioned situation, the general aim of the paper is to introduce and compare analysing methods used in some EU countries, such as Great-Britain, the Netherlands and Hungary.

In the course of comparing income calculation practices and methods in the European Union, first I have briefly examined the reporting system of these countries, and next the formats of profit and loss accounts follow together with the patterns of profit and loss calculation and income categories used in the FADN system for the analysis of agricultural activities in the different countries. After all, in the purpose of getting extra information I have taken into

consideration the opportunity cost as well. After reviewing the elements, methods and systems about income calculations, I have made model-calculations to find answers to the following questions:

- Are there differences between practices of EU member states despite a seemingly unified European regulation system?
- If there are differences, will the shown incomes be of different volume?
- How much does the income calculated by conventional accounting differ from the income calculated by the hereby introduced experimental (FADN) and other analysing methods?
- Which factors (may) influence the differing incomes significantly?

The process of compiling the model can be summarized in the following six steps:

- Defining aims: answering the question whether the income of the model enterprise would differ by using different income calculation methods.
- Defining important factors: in the course of the modelling, factors affecting results regarding different methods have been detected. The model includes all important elements of accounting, FADN and those profit and loss calculating methods which consider opportunity cost.
- Constructing the model: By typing the data of the model enterprise into an Excel table and deducing data by different income calculation methods, I have searched for answers to the above mentioned questions.
- Checking and maintaining the validity of the model: After compiling the model it was essential to check the accuracy of the data resulted from the calculations.
- Documenting the model: after calculations I have interpreted the differences of income calculation methods and introduced the differences between income categories.

To compare the incomes calculated by different methods a model of a private and a joint agricultural business have been formulated. During defining the conditions of the model enterprise – for the sake of comparability and validity – the basis was the data collection of AKI, which operates the Hungarian FADN system, in the case of each income calculation method. I aimed at forming a model in both cases that fit into the median standard gross margin category (SFH - category), (in private business SFH = 2,5 – 7,0 million HUF, in joint business SFH = 25 – 80 million HUF). During analysis of the income of the model enterprise by the introduced methods, it was very important to see how the income varied and the introduction of variation of data of the model enterprise and deviations caused by differences in methodology were in focus.

Income derived from accounting profit and loss statements has been shown out in the case of private and joint model businesses as well, because profit and loss statements can be made from the supplied data in both cases (although it is only compulsory for joint businesses). On the other hand, during FADN profit and loss calculations I intended to give insight exclusively to national specialties, and I took the income categories of the model enterprise derived from EU, Hungarian and Dutch FADN profit and loss statements under inspection. In consideration that the income categories of LEI have meaning only in the case of family businesses, I made the comparison of FADN profit categories based on the data of the private model enterprise.

2. CONCLUSIONS: Comparative analysis of income calculation methods used in certain member states of the European Union (the Netherlands, Great-Britain and Hungary)

During the comparison of income calculation methods used in the European Union I favoured great attention to differences of analysing methods – due to diverse agricultural conditions and other factors - and to the adaptation to EU principles aiming integration. I examined the reporting system of the Union (in Great-Britain, the Netherlands and Hungary), accountancy rules in connection with income calculation, formal and content requirements of accounting statements and profit calculating patterns of FADN systems used for analysing and presenting agricultural activities of the different countries. In some of the countries a new income calculation method has been developed, which is based on basic reports, but provide extra information and use opportunity cost.

From the comparative analysis I stated that despite of the seemingly single European regulation, are there differences between income calculation practices of EU member states, and due to these, the presented incomes will be of different volume. In general I would say that due to policies aiming unification of the Union, and to international accounting standards there are no great differences between profit and loss statements – apart from differing taxation methods in some country - and the harmonization have been implemented on the field of accountancy.

On the contrary, profit calculations used by farm accountancy data networks in the examined countries show great differences – due to differing cultural, society and legal circumstances – and use various income categories too. The Union consigns the right to the member states to choose the format of the form they would like to use to meet the requirements of supply of data, but expects transformability of those data to usable form. This requirement is extremely important for the sake of decision making in the Union, because comparison of the economy of the member states is only possible in the same system with uniform income categories. Analysis clearly proved that the different income categories of FADN profit and loss statements in the different states result in different incomes. The Hungarian FADN profit and loss statement have been compiled in similar format to profit and loss statements used in accounting, while more income categories are under testing covering total income in the Netherlands. Thus it is essential to determine the aim of income calculation and the type of income level we would like to present, in every case during examinations in connection with income.

Profit and loss statements are primarily used to communicate data of the enterprise towards the members of the market and serve as a basis for annual tax calculation. FADN profit and loss statements present exclusively profit generated in agricultural businesses, although their main aim is not to serve as a basis for tax calculation, these do not show total income achieved in reality. Considering these facts other income categories are used in The Netherlands than those expected by the EU, which regard the incomes of non agricultural activities and the value of own labour, capital, land as an opportunity cost in order to show the real income. In Great Britain, profit is also modified by the opportunity cost so that the real income of the business examined from various viewpoints could be shown at different levels.

Most income calculation methods (accountancy and FADN) used in performance judgement of enterprises are present in some sort in all EU member states and in Hungary as well. But in the Hungarian practice it is not known or not generally accepted the internationally widely used income calculation method concerning opportunity cost, in which certain not paid costs

(value of the work made by the farmer, cost of own machines and land leasing, interest of own equity) are taken into the calculation in order to determine the unit – price of products and the income of the business more accurately. Regarding the fact that the accountancy and FADN regulations of the European Union do not allow these costs to be settled as expenditures, the income calculation methods using opportunity cost are primarily used for internal calculations and for better comparison of results.

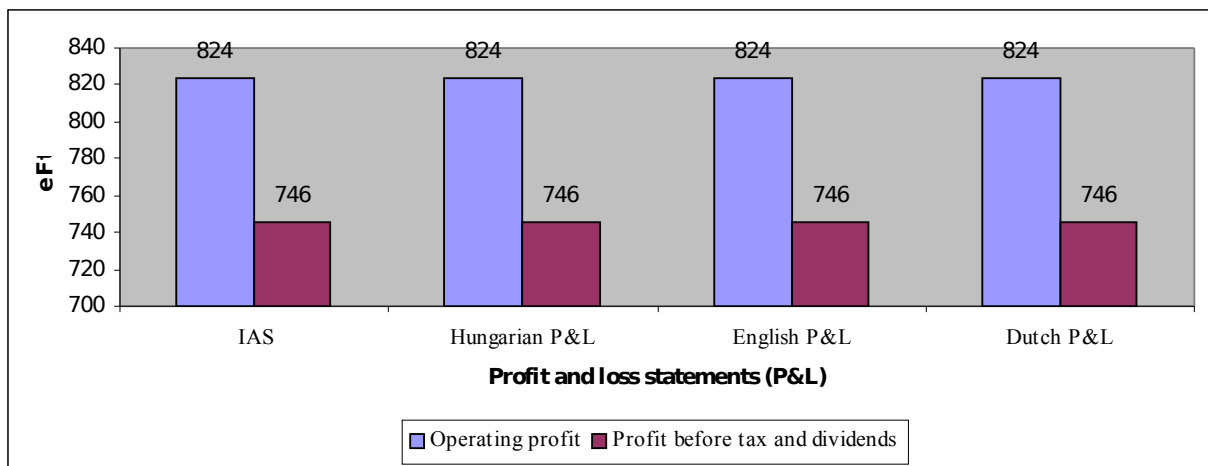
In order to reason the conclusions made from the comparison of the income calculation methods used in the EU member states, I also made the comparative analysis of the different methods based on model calculation using actual data. As a result of the model calculation variation of income - analysed with various methods –, introduction and examination of deviations caused by diverse methodologies were brought into focus.

Presenting and comparison of the income of the model enterprise calculated by diverse income calculation methods was implemented by grouping the methods into three categories (accountancy profit and loss statements, FADN profit and loss statements, income calculation scheme concerning opportunity cost) in favour of better perspicuity.

By means of model calculation, findings resulted from comparative analysis have been proved by empirical data too:

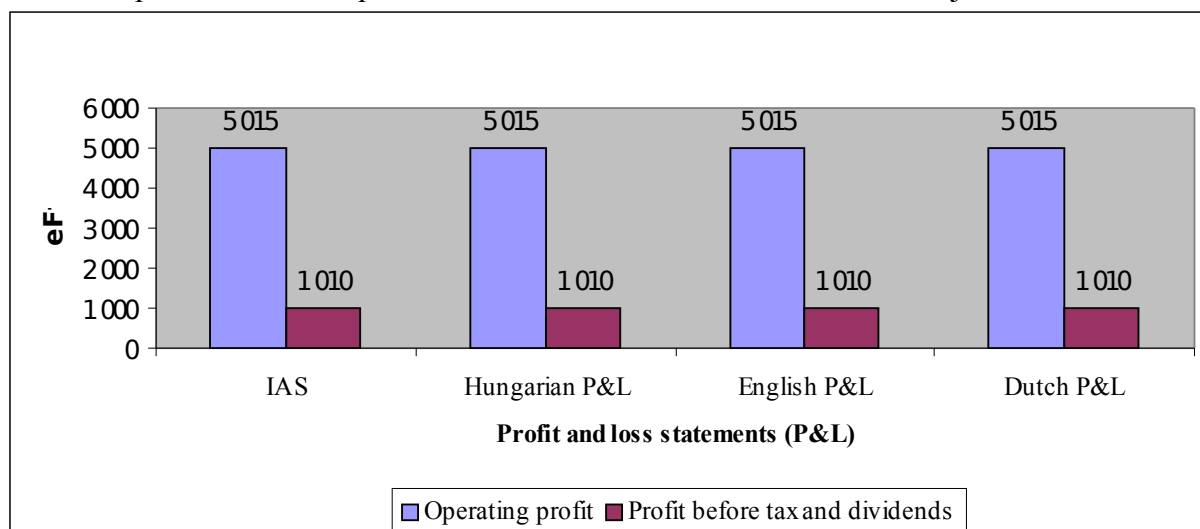
- Profit and loss statements prescribed by accountancy acts, international accounting standards (IAS, Hungarian, English, Dutch): there are no significant differences between profit and loss statements – which serve as a basis for taxation - of certain member states of the Union. The 1. and 2. graphs clearly show that operating profit and the profit before tax and dividend have the same value in all accountancy profit and loss statements in the case of the examined business forms.

1. Graph: Variations in profit in the examined countries in the case of private businesses



Source: Own calculation

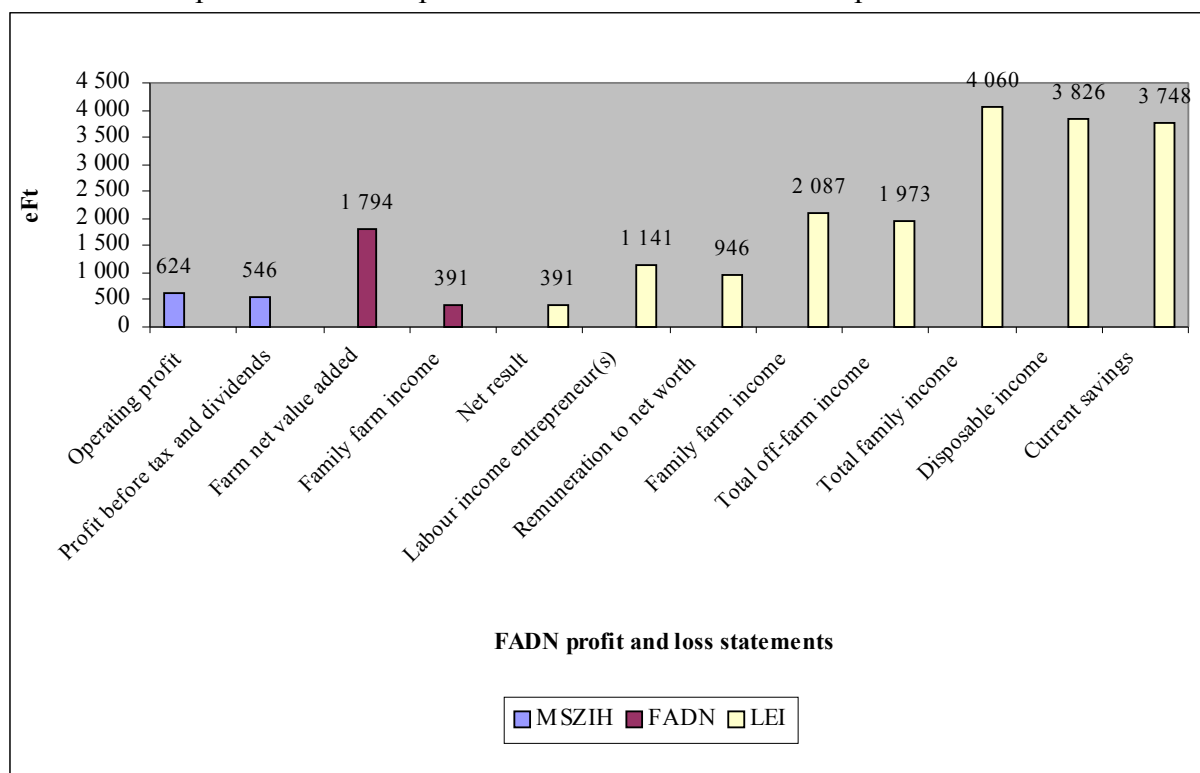
2. Graph: Variations in profit in the examined countries in the case of joint businesses



Source: Own calculation

- FADN profit and loss statements (MSZIH, FADN, LEI): FADN profit and loss statements of the examined EU member states contain various income categories, thus reported incomes also show difference. The 3. Graph represents well that the different income categories – differing in name, content and value – do not cover each other, thus to compare them, one has to be very careful. LEI, the Dutch FADN system calculates with incomes originated from non-agricultural activities and own labour, own equity and cost that have not been paid for land (opportunity cost) as well.

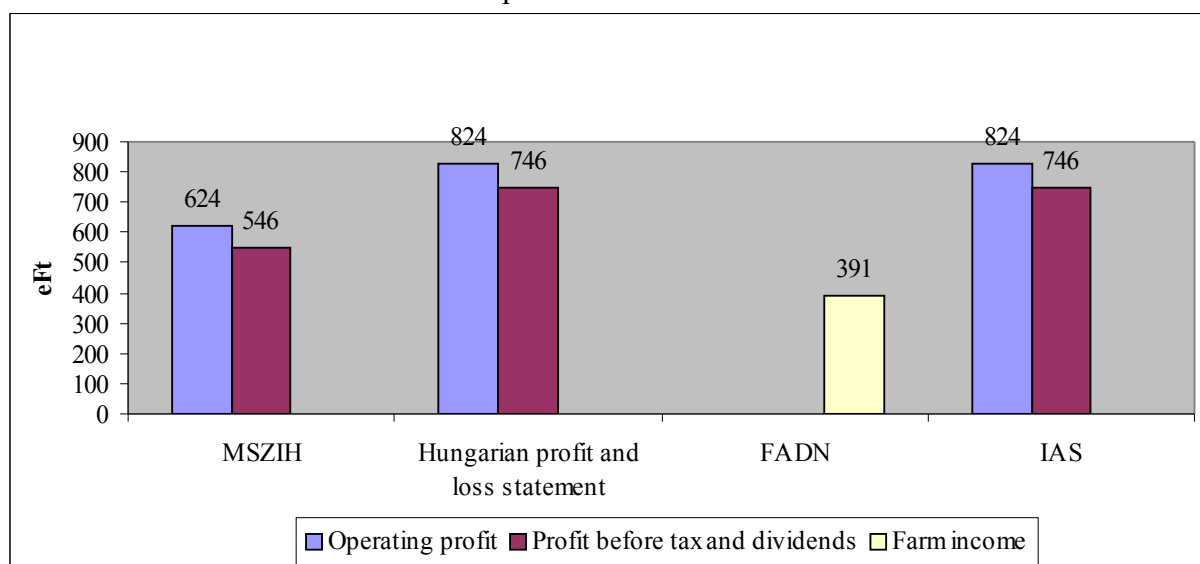
3. Graph: Variations in profit in EU FADN in the case of private businesses



Source: Own calculations

- Income calculation scheme using opportunity cost: Usage of income calculation methods concerning opportunity cost, especially concentrating on agricultural activities, which differ from FADN systems and accountancy were developed primary for profit calculation in private and family businesses. Different income levels calculated by this scheme differ from income presented by accountancy and FADN methods. As for the technique of cost settlement, the English method is close to the income concept formed by LEI, since both use opportunity cost. The basic difference between the two systems is that the English income calculation aims to present the income of the enterprises, while the LEI wants to express all the income reached by the family (from agricultural and non agricultural activities, employment etc.)
- Income categories in accountancy and FADN profit and loss statements: Differences between the methodology of accountancy and FADN profit and loss statements cause deviations in presented incomes. The main characteristic of the FADN profit and loss calculation is that Net sales include consumption of the family as well, and the value of activated own performance consist changes in self produced stocks, and as the value of own produced assets only the activated value of livestock is presented. This can be reasoned with the fact that the FADN calculates only once with accounts connected to agricultural production. Profit expressed by the Hungarian FADN and the Hungarian accountancy profit and loss statements are closer to each other than income calculations of the FADN and the widely used IAS, regarding that the Hungarian FADN system (MSZIH) determines its own report based on accountancy. There are greater deviation between the profit calculation of IAS and FADN because FADN is not based on accountancy but determines and calculate new income categories.

4. Graph: Income categories in accountancy and FADN profit and loss statements in the case of private businesses



Source: Own calculations

3. RESULTS

- During the comparative analysis of income calculation methods of the European Union and some of its member states (Great–Britain, The Netherlands, Hungary) showed that despite the seemingly single European regulation, there are still differences between income calculation practices of certain countries, and these deviations result in different incomes.
- As a result of the comparative analysis, it became obvious, that due to policies aiming unification of the Union, and to international accounting standards there are no great differences between profit and loss statements, while there are significant differences between FADN profit calculations in certain countries. These methods use various income categories (although, income categories required by the Union can be converted from these), whose use results in incomes presented on different levels. Some countries (Great–Britain, The Netherlands) use income categories differing from those required by the Union, and these in order to show the real income reached by an enterprise, calculate with a kind of opportunity cost (own labour, equity and land), and with incomes from non-agricultural activities as well.
- In order to reason the conclusions made from the comparison of the income calculation methods used in the EU member states, I also made the comparative analysis of the different methods based on model calculation and actual data. By way of examination, effect of different methodology on income has been proved. Accountancy, FADN and incomes containing opportunity cost calculated by this scheme differ significantly from each other.

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