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**DOCTORAL SCHOOL OF INTERDISCIPLINARY  
SOCIAL AND AGRICULTURAL SCIENCES**

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Ph.D. thesis

**STUDY OF INCOME CALCULATION METHODOLOGY OF  
AGRICULTURAL ENTERPRISES IN SOME MEMBER STATES OF  
THE EUROPEAN UNION**

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## **1. INTRODUCTION, OBJECTIVES**

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 our country intended to meet the requirements stated by the European Union by introducing, among others, the FADN (Farm Accountancy Data Network) agricultural data network in Hungary and the operation of the System of Agricultural Accounts. 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. Considering that financing and profitability problems of Hungarian enterprises are very important questions in the Hungarian economy, I regard a comparison of income calculation methods of agricultural enterprises used in some EU countries essential.

Analysis of the situation of agriculture and agricultural activities formed an important part of the responsibilities and tasks entailed by the preparations for joining the European Union and achieving EU membership. Since the democratic transformation the profitability of the sector has worsened due to the collective effect of agricultural production, market, financial and regulative conditions, and on the long run, it reduces our competitiveness and opportunities to enter into markets. The lack of income can be traced back besides others to decreasing production volumes, narrowing selling opportunities (inner market, export), a growing price index of agricultural expenditures in contrast with a decreasing producer price index, financing problems and an inadequate amount of subsidies, etc. However, the renewal of production bases and improvements should be financed not only by depreciation but also by net incomes derived from agricultural enterprises. Regarding the unfavourable income position, productivity and financing problems of Hungarian agriculture, today there is a greater importance of rational uses of agricultural resources, the elimination of anomalies, and an unanimous and uniform judgement of agricultural activities.

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 my thesis is to introduce and compare analysing methods used in some EU countries, such as Great-Britain, the Netherlands and Hungary.*

*In order to fulfil this general aim I regard the following sub-aims highly essential to deal with:*

➤ *For the sake of clarification the starting point of my work was the introduction, comparison and interpretation of the concepts of profit and profitability used in accounting, farm business management and economics* because during studying the relevant literature I realized that different branches of science define these two core concepts differently,

➤ *The presentation of information systems, which are important in the judgment of profitability of agricultural businesses:*

- Accounting information system (financial statements, accounting principles)
- Farm Accountancy Data Network (Hungarian FADN later: MSZIH)
- System of Agricultural Accounts providing macro level information (Hungarian SAA later: MSZR). In this thesis I disregard introducing the method of it because the main aim of the thesis is to review income calculation methods concerning agricultural enterprises directly and not the Hungarian agricultural sector.

➤ *To give an answer to the main aim of the thesis and to be able to compare the above mentioned analysing methods 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?*

## 2. PRECEDENTS AND APPLIED METHODS

To reach my aims, during my research, I have relied on data collected by myself, literature from Hungary and abroad, the current legislation, experiences collected during my field trips abroad, information from the FADN (MSZIH) system coordinated by the Agricultural Economics Research Institute (AKI) and information collected during personal conversations with experts operating the MSZIH system on county and state levels.

To compare income calculation methods besides Hungary I have chosen Great-Britain and the Netherlands for the following reasons:

➤ While collecting data and information needed to write this thesis I had the opportunity to study literature from Great-Britain and the Netherlands at Middlesex University Business School and at Harper Adams University College.

➤ My choice was also backed up by the fact that the agriculture of both Great-Britain and the Netherlands and the performance evaluation of agricultural enterprises run back over significant past, and there has been developed an income calculation method concerning especially agricultural aspects.

Thus getting acquainted with the income calculation methods of the hereby mentioned EU member states (Great-Britain, the Netherlands and Hungary) was implemented by reading English, Dutch and Hungarian university books, interviewing professors from the given countries, studying laws and related literature.

Regarding the structure of my thesis after reviewing literature, ***I have introduced and compared income calculation practices and methods in the European Union, especially in the Netherlands, Great-Britain and Hungary*** by narration and comparing tables. In the course of it, first I have briefly introduced 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 reviewing the basic reports, report based income categories providing extra information and the income calculation method using the opportunity cost have been introduced.

Following the narrative comparison, during *comparative analysis of income calculation methods* of agricultural enterprises, reviews and analysis of deviations due to differences in methodologies followed in turn based on *actual figures and model calculations*.

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 questions formulated in the main aim.
- 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). I used profit and loss statement made by total cost process in every case to my model, where it was possible to choose between total cost and turnover cost processes. Results of modelling – tables and graphs are visualized by Excel tables. *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.*

Due to the large amount of data and for the sake of perspicuity, first I grouped the income calculation methods into three categories and I started comparing within these categories:

Profit and loss statements stipulated by accounting laws and standards (IAS, Hungarian, English, Dutch)

- FADN profit calculations (MSZIH, FADN, LEI),
- Income calculating format using opportunity cost (English).

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).

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.

In the English profit and loss calculation using opportunity cost and the Dutch FADN income-determination, value of own labour, own equity and own land is determined by the following pieces of information:

- I used the current minimum wage in Hungary (2006: 62.500 HUF/month) to calculate the wage of the farmer. To define the income category of the whole family I used minimum wages for two helping family members.
- The cost of interest was calculated on the basis of the own equity of the model enterprise (according to the middle category of the size of private businesses defined by AKI, e.g. 474. 000 HUF/acre \* 39), with 10 % interest rate.
- As for the calculated land leasing cost, it has to be mentioned, that since the model enterprise has 25 acres own land, thus during income calculations using opportunity cost, the calculation has to be corrected by the amount equal to the value of this land. Leasing charges provide 2 – 5 % yield, if the price of the land is regarded as capital according to data of <http://www.foldbroker.hu/piac.htm> homepage. For calculation I used land prices of the Great Plain in Hungary

(<http://www.foldbroker.hu/piac.htm>, 300-500.000 HUF/acre). Accordingly, I calculated with 5 % leasing charge for 25 acres own land with 400.000 HUF/acre selling price. Data form the mentioned Internet home page show that land prices are around 16.000 – 32.000 euro/acre in the Netherlands, and around 4.000 – 16.000 euro/acre in Great – Britain. To ensure comparability, I used the same land prices in my calculations.

### 3. BASIC CONCLUSIONS

#### 3.1. Interpretation of income and profitability

After reviewing relevant literature, it became obvious that the definition of income, and profitability cannot be considered as single definitions, because various approaches define the core of income on different ways. Recognizing this, I regarded it important to clarify these concepts as a starting point of my research since a well defined income-concept is preliminary to the comparison of analysing methods. It has great importance in practice as well, mainly in the comparison of enterprises working in the same field, and in the process of performance judgement during credit analysis and distribution of subsidies concerning especially agricultural enterprises. In my opinion economists, accounting specialists, theoretical economists create concepts as academic achievements appropriate to the needs of their own area of specialty and the presented concepts/categories of income show well the fashionable technical terms of the different periods. In consideration of the fact that home specialists tend to begin to use terms from western European literature in these days, harmonization of concepts of company performance even if slowly, but sooner or later, will take place. As a summary of references from relevant literature it can be lay down that increase of real income is the most important goal for every producer (agricultural producers too) and business irrespectively of calculation methods, analysis of income, deviations of reports and form of business, since this can be the source of future development and substitution of assets. Income becomes really important for an enterprise when it is realised in the form of money, as it can be problematic even for a profitable business to fulfil its responsibilities. Based on the observations derived from the analysis of diversified thesaurus, I tried to make a definition, which - according to the basic aim of this paper - I could use in the different income calculations.

The concept I used and regarded as a basis in my calculations is the following: *Income* is the result of business done by enterprises during a given period of time (financial year), the difference between periodical revenues, yields emerging from the business activity and the cost, expenditures measured in money used to reach these incomes expressed in financial terms. Regarding accounting categories I should say that profit in reality means principally

the category of profit after tax, before dividend paying, the income available for the enterprise. Considering that the core of my thesis is to study the methodology of income calculation and the fact that the extent of the division of generated income between the state (corporation tax), owners (dividend) and the business, I analysed income generated by the business in the comparison of income calculation methods based on model calculation. ***Profitability*** can be interpreted as a ratio, which expresses the rate of the profit amount benchmarked against some point of reference (%).

### **3.2. Judgement of enterprises and the information system playing important role in the calculation of income in the case of agricultural enterprises**

The importance of introduction of the most commonly used information systems in the European Union that also cover agricultural activities is justified by the fact that the role of information became more important due to rapidly changing technical conditions, market and economic regulations in our globalising world. The most significant group of information is which has great market value and economic content. Since my thesis tends toward judgement of the activity and income of businesses (private and joint), introduction of systems providing this sort of information has high importance.

The role of information is also significant in agricultural decision-making. On the one hand it is important that numeric information about Hungarian agriculture could be comparable with those of the different member states regarding their content. On the other hand available actual and creditable information about agriculture and the different groups of businesses is essential to the planning, implementation and verification of measures of agricultural policy. For the sake of this, development and operation of the EU compatible ***System of Agricultural Accounts (MSZR), the Farm Accountancy Data Network (MSZIH) and accountancy information system*** have decisive role. Accounting that affects plant level directly and meet the information requirements specified by accountancy and tax bills, and EU-coordinated FADN information systems provide micro-economic information. These systems make data supply possible on macro level (demand for data by the EU), as well. ***Although, each of the various income calculation systems*** (in case of the accountancy information system only in part) ***tend to present performance and income generated by***

*agricultural activities, there can be significant deviations between reported incomes due to differing performance evaluation and income calculation methods.*

### **3.3. 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. This is also advisable in Hungary for similar reasons.

### 3.4. Introduction of deviations in the incomes presented by different income calculation methods by model calculation

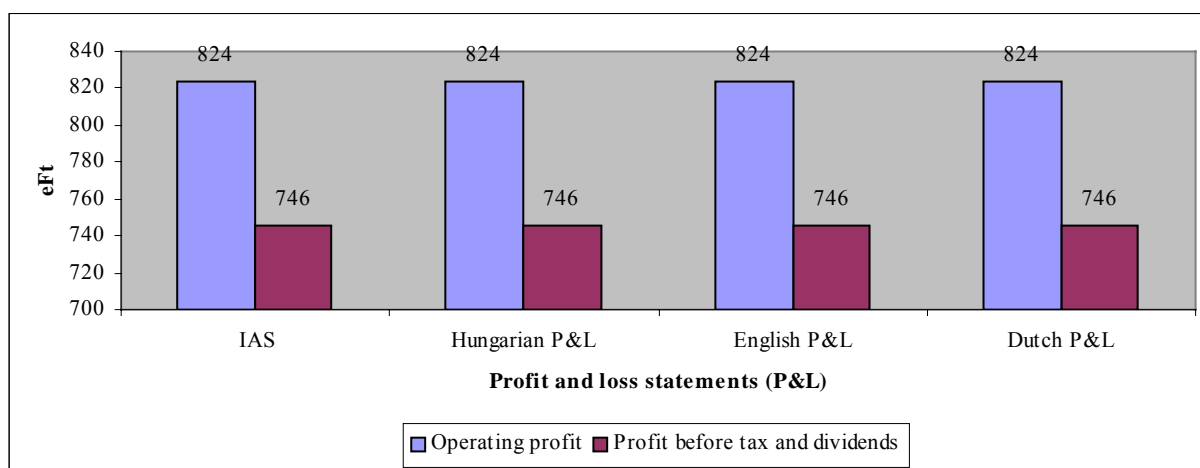
In order to reason the conclusions made from the comparison of the income calculation methods used in the EU member states, I also made the comparative analysis of the different methods based on model calculation using actual data. As a result of the model calculation variation of income - analysed with 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:

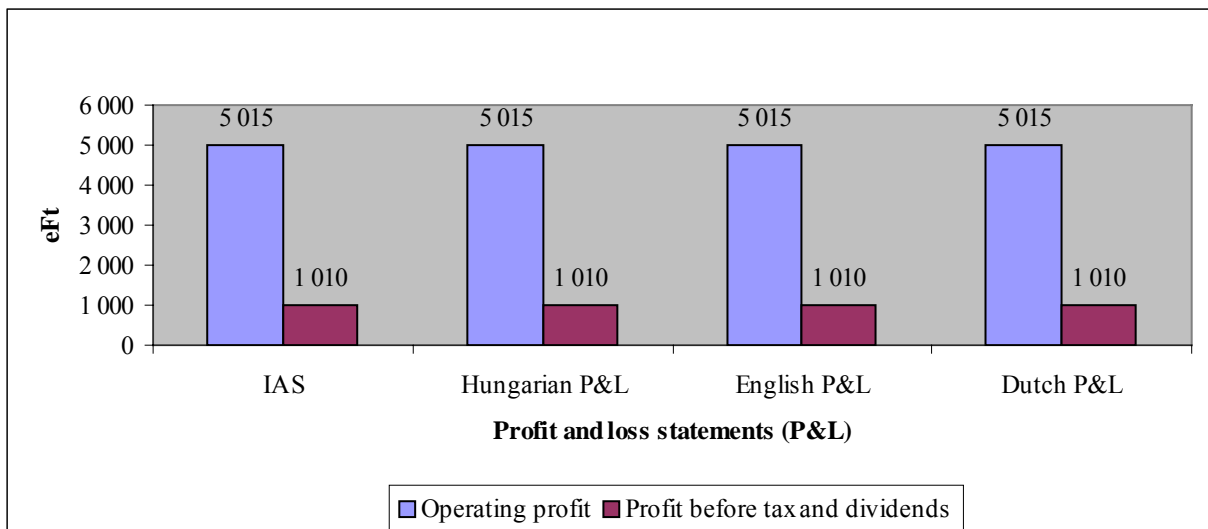
- ***Profit and loss statements prescribed by accountancy acts, international accounting standards (IAS, Hungarian, English, Dutch):*** there are no significant differences between profit and loss statements – which serve as a basis for taxation - of certain member states of the Union. The 1. and 2. 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

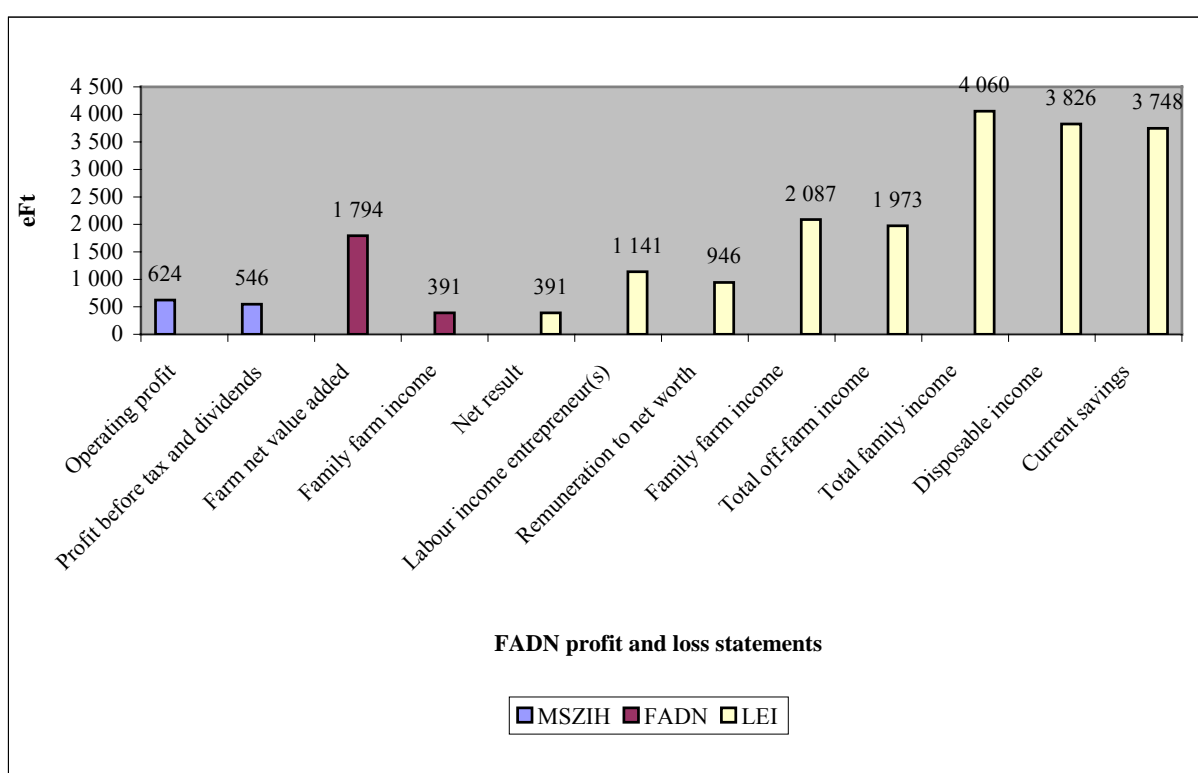
**2. Graph: Variations in profit in the examined countries in the case of joint businesses**



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.

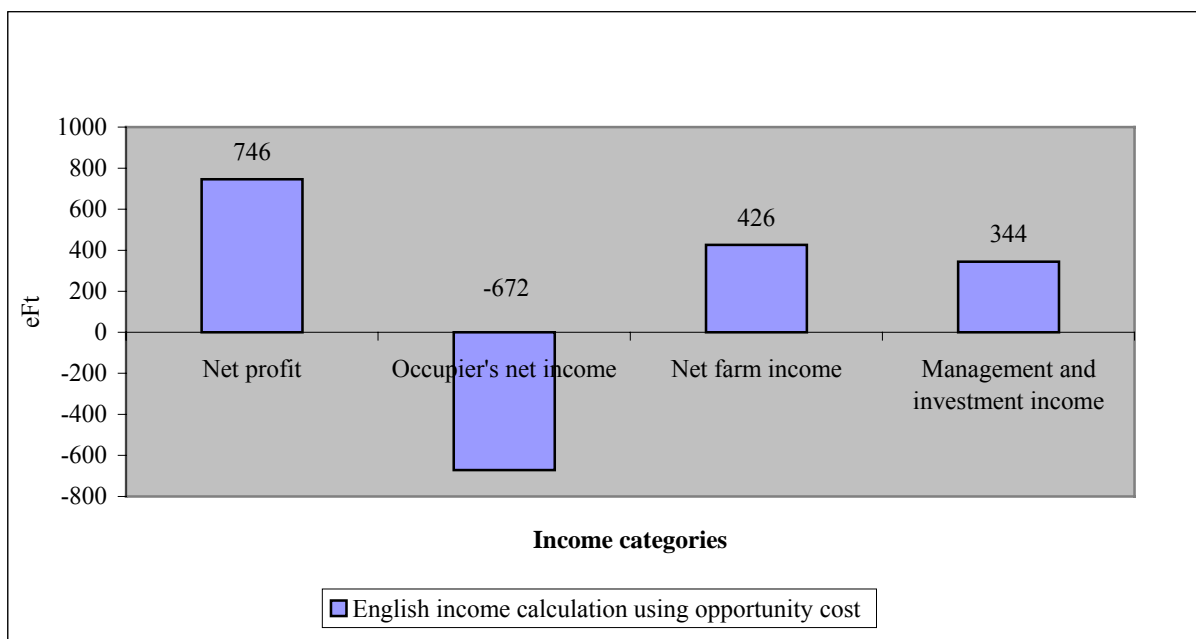
### 3. Graph: Variations in profit in EU FADN in the case of private businesses



Source: Own calculations

- **Income calculation scheme using opportunity cost (English):** 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.)

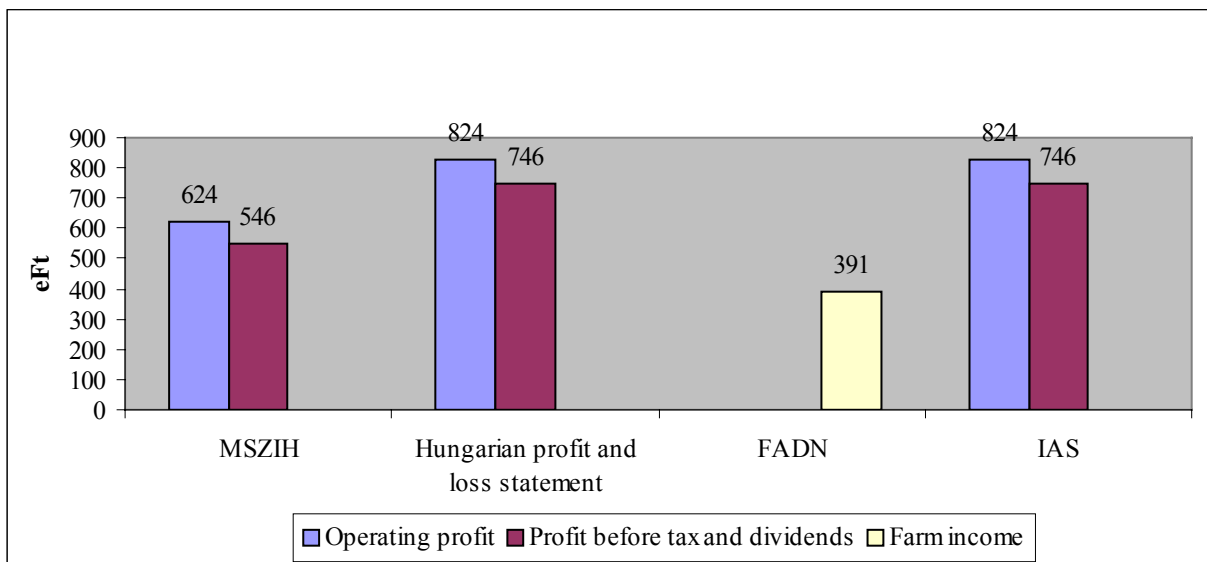
**4. Graph: English income calculation using opportunity cost in the case of private businesses**



Source: Own calculations

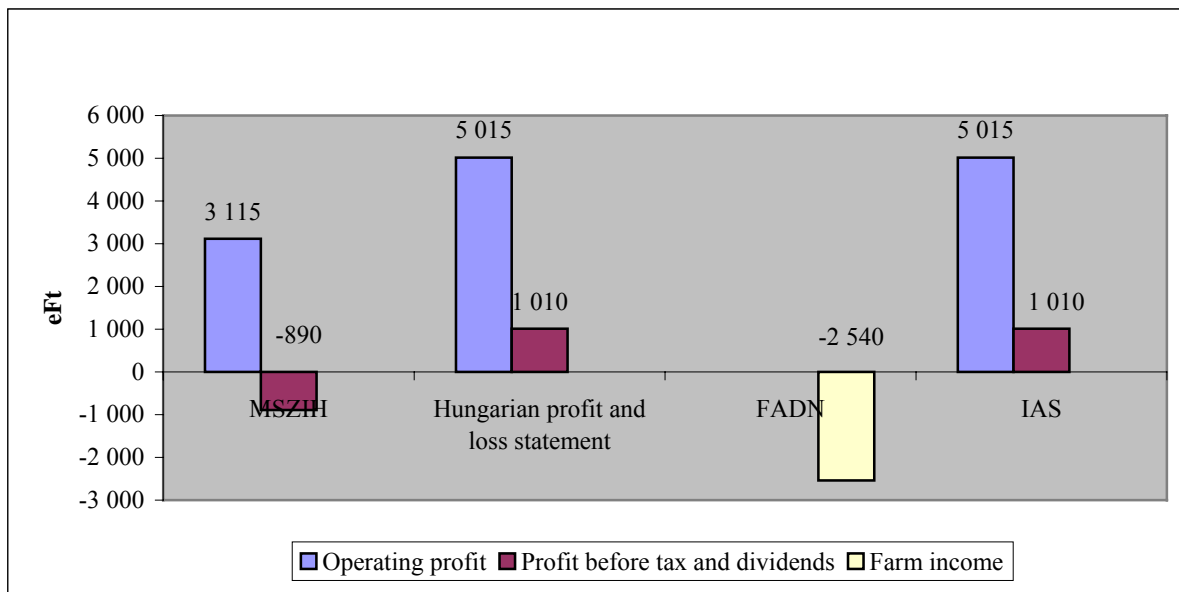
- **Income categories in accountancy and FADN profit and loss statements:**  
Differences between the methodology of accountancy and FADN profit and loss statements cause deviations in presented incomes. The main characteristic of the FADN profit and loss calculation is that Net sales include consumption 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.

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



Source: Own calculations

**6. Graph: Income categories in accountancy and FADN profit and loss statements in the case of joint businesses**



Source: Own calculation

#### 4. NEW RESULTS OF THE THESIS

- 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.

## **5. UTILIZATION OF THE RESULTS IN PRACTICE**

By means of unveiling deviations between performance evaluation and income calculation methods used in the states of the European Union, we can draw nearer to interesting data revealed during comparison of enterprises working in the same field, to specifying generated profit, and to better judgement of earning position of businesses. Proper and univocal specification of performance and profit position of enterprises is of high importance in everyday life on several fields, within the process of lending during grading of debtors and the performance adjudication built in the process of decision making on subsidies among others, which has great importance in financing agricultural enterprises. In my opinion it would be advisable to built opportunity cost into the income calculation method of enterprises for the sake of better comparability and more realistic evaluation. Although this would primary resulted in a calculative income, which is not appropriate for supplying data to the Hungarian tax authority, but it can be very useful for farmers in realistic evaluation of their performance. I would like to continue my research in connection with income calculation in this direction.

## 6. PUBLICATIONS RELATED TO THE TOPIC OF THE DISSERTATION

### *Books in Hungarian:*

1. Bács Z. – **Orbán I.**: Gazdasági adminisztráció, szerződések. Campus Kiadó. Debrecen. 2003.
2. Nábrádi A. – Posta L. – Szabó Cs. – Fürj Z. – **Orbán I.**: A földbirtok-politika jogszabályi alapjai. A Nemzeti Földalapkezelő Szervezet kiadványa. Szaktudás Kiadó Ház. Budapest. 2002.

### *Chapter of a book in Hungarian:*

3. **Orbán I.**: A szerződések világa. In: Gazdasági adminisztráció, szerződések. Bács Z. – Orbán I. Campus Kiadó. Debrecen. 2003. 117-147. p.
4. **Orbán I.**: Kötvény. In: Vállalkozások finanszírozása. Darabos É. – Grasselli N. Campus Kiadó. Debrecen. 2003. 69-80. p.
5. **Orbán I.**: Kötvény, A szerződések világa. In: Vállalkozások pénzügyei és elszámolása. Bács Z. – Orbán I. Campus Kiadó. Debrecen. 2003. 49-58. és 214-233. p.

### *University lecture notes:*

6. Csajbók I. - Darabos É. - Kosztolányi L.-né – **Orbán I.** - Rózsa A.: Pénzügy I. Kosztolányi L.-né. Debrecen. 2001. 1-74. old.
7. **Dékán T.-né Orbán I.**: Gazdasági társaság átalakulásának számviteli feladatai. In: Számviteli gyakorlatok IV. Példatár – Megoldások. Kondorosi F.-né. Debrecen. 2004. 13-15. p., 42-47. p.

### *Article in a journal without a summary in foreign languages:*

8. **Orbán I.**: A mezőgazdaság külső finanszírozásának aktuális kérdései. Agrártudományi Közlemények Különszám. Debrecen. 2002. 88-92. p.

### *Presentation at a Conference in foreign language – refereed proceedings:*

9. **Orbán I.**: Profitability analysis of the Hungarian agricultural enterprises in the Hajdú-Bihar county (with special regard to the managerial aspects). Agricultural and Food Sciences Processes and Technologies International Conference. Sibiu. 2002. 238-245.
10. **Orbán I.**: Financial reporting and the practice of profit-calculation in the United Kingdom (with special regard to the agricultural enterprises). Agricultural and Food Sciences Processes and Technologies International Conference. Sibiu. 2002. 245-253.

11. Bács Z. – Nagy A. – **Orbán I.**: Questions about profitability analysis of the Hungarian family farm businesses. Agrarian prospects XIII. Sustainable development of an agrarian sector – challenges and risks. Prague. 2004. 893-897. p.
12. **Orbán I.**: Ideas and facts in relation to the United Kingdom's farming income and financial standing. VIII. Nemzetközi Agrárökonómiai Tudományos Napok. A mezőgazdasági termelés és erőforrás hasznosítás ökonómiája. Gyöngyös. 2002. március 26-27. 3. kötet. 61-64. p.
13. **Orbán I.**: The methods of agricultural enterprises' profitability analysis in the United Kingdom and Hungary. VIII. Nemzetközi Agrárökonómiai Tudományos Napok. A mezőgazdasági termelés és erőforrás hasznosítás ökonómiája. Gyöngyös. 2002. március 26- 27. 3. kötet. 65-70. p.
14. **Orbán I.**: Changes of some significant financial indices demonstrating the financial performance of the agricultural enterprises in the Hajdú-Bihar region. 2nd International Conference for Young Researchers of Economics. Gödöllő. 2002. október 17-18. 217 – 221. p.

***Presentation at a Conference in Hungary:***

15. **Dékán T.-né Orbán I.**: A Mezőgazdasági Számveteli Információs Hálózat szerepe a mezőgazdasági vállalkozások jövedelmezőségének vizsgálatában. Agrárgazdaság, vidékfejlesztés és agrárinformatika (AVA2). Nemzetközi konferencia. Debrecen. 2005. 69. p. + CD
16. **Orbán I.**: A jövedelmezőség elemzése a döntésmegalapozás fényében. Agrárgazdaság, vidékfejlesztés és agrárinformatika az évezred küszöbén (AVA). Nemzetközi konferencia. Debrecen. 2003. 264. p. + CD
17. **Orbán I.**: Mezőgazdasági vállalkozások vagyoni, pénzügyi helyzetének vizsgálata Hajdú-Bihar megyében. XLIV. Georgikon Napok. „Stabilitás és intézményrendszer az agrárgazdaságban”. Keszthely. 2002. szeptember 26-27. 125. p. + CD
18. **Orbán I.**: Kis- és középvállalkozások finanszírozása. XLIII. Georgikon Napok. „Vidékfejlesztés – Környezetgazdálkodás – Mezőgazdaság”. Keszthely. 2001. szeptember 20-21. I. kötet. 643-647. p.

***Poster published in Hungary:***

19. **Orbán I.**: Mezőgazdasági kis- és középvállalkozások finanszírozása. „A ma diákjai – a jövő tudósai”. Tudomány napi párbeszéd. Budapest. 2000.