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*Ph.D. thesis*

# Economic Analysis of Hungarian Family Farm Businesses

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*"The farm of the independent Hungarian peasant should not be large or small, but enough for maintaining family members, who do not create regulations, do not command, but take the horn of the plough, the spade and hoe…"*

*István Széchenyi*

# 1. INTRODUCTION AND AIM SETTING

The basic unit of the prevailing society has been the family since the ancient ages. This unit being a part of bigger social systems has preserved its sovereignty during the history. Its internal and external relationship, function and operation adjusted to the challenge of the certain era, but its primarily function has never changed.

The development of human beings is parallel to that of agriculture; the evolvement of the human civilization was based on agriculture. Producing food and agricultural products went with hard physical work; the production risk inspite of the huge development of technology is still high. Due to the technical improvement, agriculture became one of the most capital intensive sectors.

Farming families have always been the determent participants in agriculture anyhow they were called in different periods, e.g. peasant farm, farm estate, family farm.

Family farms are wide-spread farming forms in the majority of the world, which have different significance in every country on the basis of their roles in agricultural production and their economic importance. This difference is thanked to the altering farm structure, thus their judgment is even different.

The competitiveness of farms operated by families has been a debated issue for a long time in Hungary, because of their problems in size, which raise the question of the opportunity to produce effectively. It is a notable fact, that the majority of these farms are so-called forced farms, which ensure only income supplement and provide the family with own produced food. This question is not so simple, as we must not forget that most of the concerned farmers deal with agriculture because there is not any other opportunity, and if they gave up their job, they would be in danger of losing their existence.

The past 50 years brought more radical changes in agriculture than the previous many centuries, and even the institute of family faced a crisis at the turn of the millennium. Investigating family farms is a special and actual issue in today's accelerated and complex

world. Because of their dominant role in the world's agricultural production, their economic significance and social functions, even policy is not indifference to them. The viability and competitiveness of family farms are not only important question to them, but they have an effect to the whole agribusiness.

The Common Agricultural Policy also highlights family farms, as besides economic functions agriculture in the Union has other tasks, for example in environmental conservation and rural development, where family farms have significance role. The only question here is the fact that whether Hungarian family farms are able to fulfill these requirements when they hardly struggle for their own livelihood. A major part of them deal with agriculture because of lack of better opportunity, others have to cope with situation that they cannot make their own ways alone in the competition sphere.

It is expected that the concentration of farms will continue in the future, the size of the farms will grow, which will assist a more effective production. On the other hand, this will go together with the fact, that bigger farms being stronger in capital have opportunity for a higher level of mechanization, which leads to further employment problems. Besides reaching the desirable size, even social aspects should be considered, which should be solved urgently. According to the above mentioned, it is clear that it is a complex economic and social problem, which is worth investigating from several aspects.

In my thesis, family (private) farms are agricultural ventures that carry out their activities in order to ensure the family's livelihood, mainly not in joint venture form. (Except for joint ventures being in one family's ownership.) Their denominations are variable, such as private farm, small farm, family farm, etc. Their denomination from the aspect of the investigation is indifference.

At the beginning of the research, I started from the **basis hypothesis**, that the role of family farms is determinant both in agriculture and in society. On this basis, the **main objective** of the thesis is to reveal the social and agricultural economic relations of family farming by scientific establishment.

The **aim** of the research within the connection system of agriculture is the economic analysis of family farming and the investigation of profit-producing and maintaining ability of family farms. To study the **hypothesis**, that the 5 European Size Unit determined in the frame of the Agrarian and Rural Development Operative Program as the criteria of

the economic viability does not cover the expectable profit of a family farm in case of profit coming from exclusively farming.

On the basis of the above mentioned thoughts, in order to reach the research aim, in this dissertation:

- **I introduce** the history of family farms in the world, in Europe and in Hungary, especially highlighting the modern history;
- **I place** family farms in the Hungarian agriculture;
- **I determine** the definition of family farms in an own interpretation;
- **I analyze** the situation of family farms in the county of Szabolcs-Szatmar-Bereg and in the sub-region of Nyiregyhaza on the basis of own data collection;
- **I outline** the factors effecting competitiveness and profit-producing ability of family farms;
- At last **I construct and analyze** a model characterizing the profit-producing ability of family farms, and relations of structure and profit requirement of farming families.

# 2. PRELIMINARIES OF THE RESEARCH AND THE UTILIZED METHODS

## *2.1. Preliminaries of the Research*

Selecting my research topic dates back to 2001, when as a student being in my final academic year I made my paper for the Scientific Students' Conference and my diploma work at the University of Debrecen, Faculty of Agricultural Sciences. When determining my research field, I endeavored to fit the topic to the Doctoral Program called "The Economy of Agricultural Enterprises and Rural Development" of the Doctoral School of Interdisciplinary Social and Agricultural Sciences, to the scientific work of the Department of Farm Business Management and to the mentality of the Business School of Debrecen.

I strived to deal with this topic with real interdisciplinary approach, harmonizing the opportunities of primarily and secondary research methods. I carried out my scientific activity in the scientific field of social sciences concerning the scientific branches of agricultural economics, agricultural history, sociology, statistics and mathematics by a multidisciplinary approach.

I took part in a three-week-long summer university course in Nyitra and Vienna in 2002 called "Agricultural Marketing and Food Industry" as a scholar, which contributed to widening my knowledge relating to the topic.

I spent one semester at the University of Natural Sciences and Applied Life Sciences (BOKU) in Vienna in 2003 as a scholar of the Austrian-Hungarian Action Foundation and the Austrian Ministry of Foreign Affairs. This period helped a lot in getting to know the European view and made possibility to study the international scientific literature.

I got acquainted with the situation of agriculture in Mecklenburg-Vorpommern province in Germany by taking part in a one-week-long study tour thanked to the cooperation of the University of Debrecen and University of Rostock, which also expanded my technical familiarity.

The fact, that I have been organizing study tours to the countries of the European Union for students of the Faculty of Agricultural Economics and Rural Development, has been a great opportunity to study the operation of the EU institutions, as well as to gather practical experiences on the operation and daily problems of farmers in the European Union.

Besides expanding my scientific knowledge during my visiting conferences and taking part in study tours in Hungary and abroad, I gained not only valuable experience, but I could even build out a widespread connection system. This largely contributes to the fact that I can keep up with the international practices of scientific fields concerning the investigation of family farming and I can continuously expand my knowledge related the relevant literature.

The subject and the final structure of my doctoral dissertation is a result of several tightening. Naturally, I could not take on the whole analysis of the issue, but I wish to contribute to getting to know the past and present of family farms from a scientific aspect and to the favourable situation of their future.

Furthermore, I believe that the information accumulated during my research work, the constructed model and database can be utilized in different fields and levels of the higher education, they can be used during theoretical and practical trainings of students, as well as they can be a basis for further economic and social sciences analysis and research.

## 2.2. The Methodological Approach of the Subject

To give reasons for approaching the subject from an **interdisciplinary** aspect, I collected the related scientific fields and scientific branches in connection with family farming on the basis of the 169/2000 (IX.29.) Government Regulation and I introduce them in *Table 1*. The requirement of their utilization depends on the investigation objective.

*Table 1.:* **Scientific Branches and Scientific Fields in Connection with Investigating Family Farming**

| Scientific Fields | Scientific Branches |
|---|---|
| **1. Nature Sciences** | **1.1. Mathematic and Counting Sciences** |
| | 1.4. Earth Sciences |
| | 1.5. Biological Sciences |
| | 1.6. Environmental Sciences |
| | 1.7. Multidisciplinary Nature Sciences |
| 2. Technical Sciences | 2.9. Agrarian Technical Sciences |
| | 2.11. Multidisciplinary Technical Sciences |
| **4. Agricultural Sciences** | **4.1. Crop Production and Horticulture Sciences** |
| | **4.3. Animal Breeding Sciences** |
| | 4.4. Food Sciences |
| | 4.5. Forest and Game Management Sciences |
| | **4.6. Multidisciplinary Agrarian Sciences** |
| **5. Social Sciences** | **5.1. Management and Business Administration** |
| | **5.2. Economic Sciences** |
| | **5.3. Political and Law Sciences** |
| | **5.4. Sociological Sciences** |
| | **5.8. Political Sciences** |
| | **5.10. Multidisciplinary Social Sciences** |
| **6. Philosophical Sciences** | **6.1. Historical Sciences** |
| | 6.5. Ethnographical and Cultural Anthropological S. |
| | 6.7. Religion Sciences |
| | 6.9. Multidisciplinary Philosophical Sciences |

Source: own construction, 2006

I indicated the scientific fields and branches by **bold** letters in the table that I deal with during my own investigation, and I take their relevance literature into consideration.

## 2.3. Research Program

In order to carry out the aims, I made independent researches which concern the following fields along the following research program:

1. I systematize and analyze the relevant literature of the subject. I look through the development of the agrarian society in Hungary from the middle of the 19th Century till today. I study the history of evolving family farms and analyze their characteristics in Hungary, with international outlook. During studying the revealed

literature, I collect and analyze the definitions of family farms and create a new definition of family farms and family farming on the basis of literature and own research.
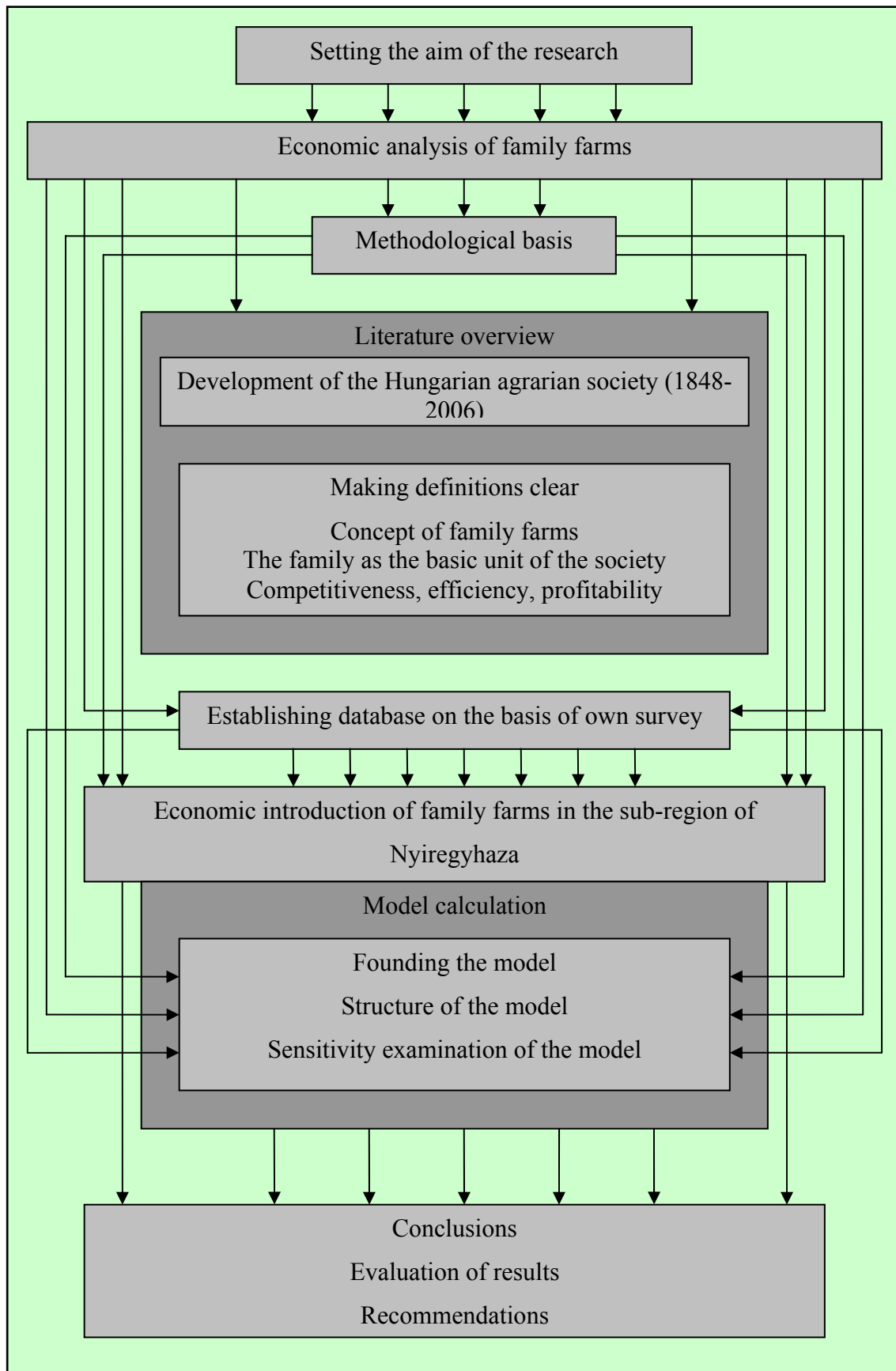
2. I cope with the changes in the role of the family at the time of the millennium. I scrutinize the significance of the family, the effects of marriage and divorce in the point of view of family farming.

3. I show the problems of size of family farms and the role of family farms in the Hungarian agriculture.

4. I make analysis within family farms in the county of Szabolcs-Szatmar-Bereg and in the sub-region of Nyiregyhaza on the basis of own data collection. During own data collection, I used a sampling method by random selection.

5. I construct a family margin calculation model, which estimates the volume of the available net profit of families in a given year. In connection with this, I define the concept 'expectable profit'.

6. I create a model which can be used by family farms. By the help of the model, the competitiveness of family farms can be examined from two aspects. The fact can be determined that how much on-farm profit has to supplement the off-farm profit in order to ensure jointly the expectable profit. The profit-producing ability of a farm of a given size can be estimated. By the help of this, it can be determined that to how big family a given economic structure ad size ensure an acceptable living standard and quality of life.

I summarized the logical connections and succession of the research program in Figure 2.

During my work, I utilized the recommendations being in the overview of the methodological literature. I took the methodological elements into consideration, which I found being useful from the point of view of my investigations.

I applied Microsoft Excel 2003 and SPSS for Windows 12.0 programs to analyze data and make model investigations.

Figure 1.: **Succession of the Research Program**

Setting the aim of the research

Economic analysis of family farms

Methodological basis

Literature overview

Development of the Hungarian agrarian society (1848-2006)

Making definitions clear

Concept of family farms
The family as the basic unit of the society
Competitiveness, efficiency, profitability

Establishing database on the basis of own survey

Economic introduction of family farms in the sub-region of Nyiregyhaza

Model calculation

Founding the model
Structure of the model
Sensitivity examination of the model

Conclusions

Evaluation of results

Recommendations

Source: own construction, 2006

# 3. MAJOR FINDINGS OF THE DISSERTATION

## *3.1. Major Findings on the Basis of Analyzing Literature*

By making my dissertation, I undertook the analysis a complex economic and social problem, the economic analysis of family farms.

I looked through the development of the agricultural society in Hungary from the middle of the 19th century till today on the basis of the relevant literature, from the point of view of the evolving family farming. I concluded that family farms have had reasons for existence in the organization of the agriculture.

I investigated the definition of the family as the basic unit of the society. The **family** is the community of parents, children (and the closest relatives), the collectivity of close relatives. The "family" as and adjective, relates to the family, reflects something being in connection with it, or is in association with a thing being realized by the participations of the family members. Thus a family consists of at least two people, a single person cannot be considered as a family.

I drew the conclusion that family farming cannot be maintained without the institution of the family. If the number of marriages decreases in the present rate, and the number of divorces further increases, and even the low rate of willingness to have children is considered, the newly evolving, aging society living alone or in partnership will not be able to hand family farms down to younger generations. It should be noted that the major part of divorces happen among city-dwellers. This, however, does not modify the tendency; at most it slows down the process a little. To reveal the reason of this problem, further investigations are necessary.

I tried to clarify the definition of family farming. On the basis of literature and my research, I created new definitions for family farms and family farming. In my own words, family farms are ventures specialized for agricultural production, where family capital, ownership, direction and labour dominate. In ideal case, the farm is handed down to further generations and establishes the profit of the family that can be expected. It consists of both production for sale and production for own purposes. Family farming is an agricultural enterprise activity done within family economic frame.

In my view, defining family farming will be debating for a long time among experts. The reasons are the complexity of the subject and the variability of the circumstances through ages and countries.

## 3.2. Major Findings on the Basis of the Questionnaires

I analyzed data of a survey done among 198 ventures operating by families. The survey aimed at revealing the farming data and living standards of these farms.

During my survey, I investigated the followings:

- taking the measure of resource supply of farm (such as land, capital, labour force), that is whether the appropriate production basis are available,
- analyzing data relating to land use, crop production and animal keeping (yields, marketed quantity, market prices),
- investigation of obtaining credits,
- examining the ability of making independent application, the availability of the necessary knowledge,
- investigating the accessibility of information, that is how farmers follow the development of agriculture, whether they take part in conferences, product previews (seeds, fertilizer, herbicides), other professional programs,
- studying the profitability of the venture, and investigating the fact that what ratio the profit from agricultural production has in the profit structure of households,
- scrutinizing the structure of the farming family, the tendency of the general living standard, that is what living standard is ensured for the farmers and their families by the agricultural production and this way of life.

*Table 2.:* **Legal Status of the Farms in the Sample**

| Legal status of farms | Number of farms | From which full-time |
|---|---|---|
| Family farmer | 52 | 41 |
| Farmer | 106 | 76 |
| Private entrepreneur | 40 | 13 |
| Total: | 198 | 130 |

Source: own data collection, 2006

According to the results of the survey done among the farmers, the majority of the farmers carry out agricultural activity as full-time workers, employing permanent employees is not typical, though they do not need them due to their size. Studying data relating to crop production and animal husbandry, both yields and market prices range in an extremely wide interval. As all of the farms are situated in a well-determined geographical unit, I think that the reason of the difference is not caused by the altering natural conditions but the production standard, which is determined by capital supplement, qualification, knowledge, and opportunities to develop farms. The differences between market prices are thought-provoking as the examined farms situate in the same sub-region. The most frequent reason of the deviations is that majority of farms sale directly "from house", which does not appear on bills or financial transfers or on any statements; their prices differ from market based sale. The structure of the sample is rather heterogenic in this point of view, and majority of the farmers have significance lagging behind in every listed field.

Profit from farming plays an important role in the existence of farmers and their families, and the number of farms is very little, which was proved by the further calculations, where only profit from agriculture ensures the existence of the family, it has only a supplementary function in most of the cases, as well as it decreases the expenses of food. This last one is partly true among the examined farmers, as in general farmers dealing with only crop production market their whole products (except for vegetable and fruit for own consumption), farms of mixed profile have as many cropping area as the need of the animal stock is required. On the other hand, animal keeper can significantly reduce their food expenses (e.g. meat, milk).

To my mind, these farms operating less well and having social importance should be supported through the difficulties; opportunities should be ensured in the Hungarian agriculture for them, especially in the accumulated less-favoured areas. These farms are not able to cope with the competitive sphere, but their primary function is not that. Inspite of this, viability can still be considered as it is not impossible that a whole family could live on profit from agricultural producing activity, which requires subsidies, and ensuring reasonable profit for those who live on agriculture besides vocation and expertise.

It can be concluded that the rational use of agricultural resources, forming the way of thinking of people and informing rural population in a wide-spread way should be

concentrated in the future. Opportunities should be created for rural population for carrying out activities that they like, in which they are competent and on which they can live.

## 3.3. Major Findings on the Basis of Model Calculations

In the following part I set forth the model reflecting the ability of family farms to maintain, the results of the relating calculations and the conclusions.

For model calculations, I set the objective to determine the annual expectable profit of a family living on wholly or partly agriculture and the fact that how big farm can meet this profit requirement. To base the model, I clarified the following definitions:

*Subsistence Level*

**Subsistence level** quantifies the level of extremely poor needs relating to the continuous life style. These needs are considered as conventionally basic at a certain level of the society.

*Minimal Wage*

The minimal wage is the smallest wage being applied compulsory. Its sum is determined annually by the government. At least the minimal wage is taken into consideration in case of personal basic wage and performance wage in harmony with the determined conditions. In 2006 the minimal wage is 62 500 HUF per month when applying monthly wage and 360 HUF per hour in case of time wage.

*Average Profit, Average Wage*

**Average wage** is the average of wage paid for the period being the basis for average calculation. The basis for calculating average wage is the wages paid for the last four quarter years. If the employment of the employee is shorter than this period, the wages paid for the quarter years or for the last months of the employee should be regarded. If the employment is shorten than one month, the average wage equals with the absence fee. If the regulation concerning the working conditions orders to use monthly average wage when determining paying obligation, the average wage of one month is the daily average wage of the employee multiplied by 22. In case of wages by the hour, the daily average wage is the average wage determined to one hour multiplied by the daily working hours of the employee.

The **expectable profit** is mentioned in several literature and political statements, but its determination or calculation is not detailed at all.

In my view, when determining the expectable profit of a family farm, the profit need of the farm and the family should be jointly handled.

*The expectable profit of a family farm is the sum which is left for the family from the annual revenue after covering all of the expenses as well as meeting the requirements of the regular maintenance work to ensure meeting its needs in an average way and besides create opportunities for accumulating. Its given rate can be determined to the given period and to the given region.*

Regarding even the results of my own survey, I considered expectable profit as the 180% of the subsistence levels of 2005 and 2006 relating to the sub-region of Nyíregyhaza for the sake of simplicity and comparison. I determined this rate by averaging and estimating the answers of the asked farmers given to the question on the monthly total net profit necessary for the family's living.

*Table 3.:* **Expectable Profit in Different Types of Families in 2005 and 2006 (HUF)**

| Household Types | 2005 | 2006 |
|---|---|---|
| *Households of Active Ages* | | |
| 1 adult | 1 189 429 | 1 234 627 |
| 1 adult with 1 child | 1 962 567 | 2 037 145 |
| 1 adult with 2 children | 2 557 271 | 2 654 446 |
| 2 adults | 2 081 495 | 2 160 590 |
| 2 adults with 1 child | 2 854 633 | 2 963 110 |
| 2 adults with 2 children | 3 449 336 | 3 580 411 |
| 2 adults with 3 children | 3 925 112 | 4 074 266 |
| 2 adults with 4 children | 4 400 887 | 4 568 121 |
| 3 adults | 2 973 582 | 3 086 579 |
| 3 adults with 1 child | 3 746 698 | 3 889 073 |
| 3 adults with 2 children | 4 341 424 | 4 506 397 |
| 3 adults with 3 children | 4 817 178 | 5 000 231 |
| 3 adults with 4 children | 5 292 954 | 5 494 086 |
| *Households of Pensioners* | | |
| 1 person | 1 070 478 | 1 111 156 |
| 2 persons | 1 024 232 | 1 913 675 |
| 3 persons | 2 616 734 | 2 716 169 |

Source: own calculation, 2006

The issue of ensuring the expectable profit is in harmony with the competitiveness. It can be stated that a family farm is competitive if it can ensure the expectable profit for the family.

*Family Margin*

Family margin is the available, free money in the whole family in a given year regardless the savings of previous years and the obtained credits.

I describe the family margin calculation model from a mathematic aspect for the year 2006 as follows:

*Notations used for the year 2006*

$I_{B1}$: The annual gross income of one of the parents

$I_{N1}$: The annual net income of one of the parents

$I_{B2}$: The annual gross income of the other parent

$I_{N2}$: The annual net income of the other parent

$T_{szj}$: Personal income tax

$J_{ny}$: Total superannuation tax (altogether with the tax transferred to mandatory pension fund) (8,5%)

$J_{eb}$: Health insurance contribution (4%)

$J_{mv}$: Employee contribution (1%)

C: Number of children

O: Number of other persons being included, after whom family allowance cannot be given

$P_i$: The sum of the family allowance after one child in case of *i* supported children

$I_{csp}$: Total family allowance

$A_i$: Sum of family tax allowance per one child in case of *i* supported children

$I_{csak}$: Total family allowance

I: Total family income in case of living only on wages


*The order of the calculation on the basis of data of 2006:*

Calculating net profit:

$$I_N = I_B - T_{szj} - J_{ny} - J_{eb} - J_{mv}$$

From which:

$$T_{szj} = I_{B(0-15500000)} \cdot 18\% + I_{B(1550000-)} \cdot 36\%$$
$$J_{ny} = I_B \cdot (0,5\% + 8,0\%)$$
$$J_{eb} = I_B \cdot 4\%$$
$$J_{mv} = I_B \cdot 1\%$$

Thus substituting:

$$I_N = I_B - I_{B(0-1550000)} \cdot 18\% + I_{B(1550000-)} \cdot 36\% - I_B \cdot (0,5\% + 8,0\%) - I_B \cdot 4\% - I_B \cdot 1\%$$
$$I_N = I_B - I_{B(0-1550000)} \cdot 18\% + I_{B(1550000-)} \cdot 36\% - I_B \cdot 13,5\%$$
$$I_N = I_B - I_{B(0-15500000)} \cdot 31,5\% + I_{B(1550000-)} \cdot 49,5\%$$

Income form family allowance:

$$I_{csp} = C \cdot P_{c+o}$$

$$P_{i,egyedülállószülő} = \begin{cases} i = 0 \rightarrow 0 Ft \\ i = 1 \rightarrow 12000 Ft \\ i = 2 \rightarrow 13000 Ft \\ i > 2 \rightarrow 15000 Ft \end{cases} ; P_i = \begin{cases} i = 0 \rightarrow 0 Ft \\ i = 1 \rightarrow 11000 Ft \\ i = 2 \rightarrow 12000 Ft \\ i > 2 \rightarrow 14000 Ft \end{cases}$$

Calculating family tax allowance:

$\sigma = 1$, if the number of the children is more than 3, otherwise it is 0.
$$I_{csak} = \max\left[\min\left[(1200000 Ft + \sigma \cdot 400000 Ft + 12 \cdot 4000 Ft \cdot C - I_B/5); (12 \cdot 4000 Ft \cdot C)\right]; 0\right]$$

The total profit:

$$I = I_N + I_{csp} + I_{csak}$$

*The Ability of the Farm to Maintain*

Measuring the utilizable profit and the ability to maintain being in strong interaction with each other is a very difficult task because of the complexity of the definitions and the structure of the profit relating to sources. The ability to maintain can be characterized by quantified factors, and indirect factors modifying "general feeling" of the same significance. Due to the interests of private farms in gross profit, it is difficult to determine the work profit according to labour groups (family labour and external labour).

The profit of the farm (family) consists of two sources, such as results from agricultural activities (on-farm) and from off-farm revenue not relating to agriculture. The on-farm profit involves subsidies from the agrarian budget and other revenues besides revenues

realized in the market. The off-farm profit consists of wages of off-farm job, capital profit, returns of investments, social allowances as well as other profit.

I systematized the factors modifying the profit producing capacity of a family farm (household) in *Table 4*.

The quality, availability and change of these factors affect the profit producing capacity and ability to maintain in a different way.

*Table 4.:* **Factors Modifying Profit Producing Capacity of a Family Farm (Household)**

| Factors modifying on-farm profit | Factors modifying off-farm profit |
|---|---|
| Farm size | Number of family members |
| Ratio of own and rented land | Ratio of active ad inactive ages |
| AK-value of land | Number of farmers having jobs |
| Production tendency | Qualification of employees |
| Geographical location | Volume of wages |
| Size and liquidity of available capital | Volume of capital profit |
| Expertise and experience of the farmer | Willingness to take risks |
| Quantity and quality of labour force | Returns of investments |
| Input prices | Social allowances |
| Market prices, market channels | Tax laws |
| Tax laws | Other factors |
| Agricultural subsidies | |
| Other factors | |

Source: own construction, 2006

During model calculation I examined the relation of the expectable profit and subsistence level with the off-farm and on-farm profit both separately and jointly in case of nine family types as follows:

*Table 2.:* **Family Types in the Model**

| code | Family type | Source of profit |
|------|-------------|------------------|
| AAA | Two adults without children | Only on-farm profit |
| AAB | Two adults without children | One earner with off-farm profit |
| AAC | Two adults without children | Two earners with off-farm profit |
| ABA | Two adults with one child | Only on-farm profit |
| ABB | Two adults with one child | One earner with off-farm profit |
| ABC | Two adults with one child | Two earners with off-farm profit |
| ACA | Two adults with two children | Only on-farm profit |
| ACB | Two adults with two children | One earner with off-farm profit |
| ACC | Two adults with two children | Two earners with off-farm profit |

Source: own construction, 2006

In the model I list family types being in harmony with the traditional values and typical to the sub-region. 61% of the respondents in my survey can be classified into the three examined family types.

When studying off-farm profit I determined the gross wage necessary for ensuring the subsistence level and the expectable profit for the examined family types.

*Table 3.:* **Gross Wage for Ensuring the Subsistence Level and the Expectable Profit in HUF**

| | Gross wage for ensuring subsistence level (HUF) | | Gross wage for ensuring expectable profit (HUF) | |
|------|------|------|------|------|
| | **2005** | **2006** | **2005** | **2006** |
| AAB | 1 765 744 | 1 824 412 | 3 672 000 | 3 727 000 |
| AAC | 1 688 154 | 1 752 304 | 3 054 000 | 3 009 000 |
| ABB | 2 440 427 | 2 445 885 | 5 057 000 | 5 053 000 |
| ABC | 2 165 850 | 2 210 470 | 4 439 000 | 4 501 000 |
| ACB | 2 802 272 | 2 816 073 | 5 962 000 | 5 966 000 |
| ACC | 2 422 046 | 2 483 383 | 5 344 000 | 5 414 000 |

Source: own calculation, 2006

When comparing the gross wages for ensuring the expectable profit in 2005 and 2006, it is clear that they did not change in accordance with the inflation in 2006. The reasons of the

differences are the changes in tax lanes and in family allowances and the increase of the child benefit.

To ensure the expectable profit level for households with one child, 35 to 38 % higher gross wage is necessary in case of one earner and 45 to 50% higher gross wage is needed in case of two earners than households without children. Having a second child requires further 18% and 20% extra profit. I counted these ration by regarding the family subsidies. The extra burden of having a second child is half of that of the first child. The reason of the fact that inspite of this less and less families have two children is the standard of the average wage, as the estimated annual average wage of 2 000 000 HUF does not cover even the expectable profit demand of families having one child.

I investigated the on-farm profit necessary for the expectable profit level regarding different gross wages.

During examining on-farm profit, I determined the profit content of Standard Gross Margin of six enterprises found most often in the examined farms, supposing that its ratio is 40%. I determined the profit producing capacity of the enterprises on the basis of the Standard Gross Margin calculated by the data of the test farm system of the Agricultural Economics Research Institute. Then I determined the farm size necessary for reaching the expectable profit in case of different family types. I calculated the farm size even in ESU.

I determined the farm size necessary for ensuring the expectable profit level according to structures of different supposed profit contents.

*Table 7.:* **Farm Sizes Necessary for Ensuring the Expectable Profit Level in ESU according to Family Types in 2006**

| Family type | Expectable profit | Profit in the percentage of the farm SGM | | | | |
|---|---|---|---|---|---|---|
| | | 100% | 80% | 60% | 40% | 20% |
| *Households of active ages* | | | | | | |
| **1 adult** | 1 234 627 | **4,0** | **4,9** | 6,6 | 9,9 | 19,8 |
| 1 adult with 1 child | 2 037 145 | 6,5 | 8,2 | 10,9 | 16,3 | 32,6 |
| 1 adult with 2 children | 2 654 446 | 8,5 | 10,6 | 14,2 | 21,3 | 42,5 |
| 2 adults | 2 160 590 | 6,9 | 8,7 | 11,5 | 17,3 | 34,6 |
| 2 adults with 1 child | 2 963 110 | 9,5 | 11,9 | 15,8 | 23,7 | 47,5 |
| 2 adults with 2 children | 3 580 411 | 11,5 | 14,3 | 19,1 | 28,7 | 57,4 |
| 2 adults with 3 children | 4 074 266 | 13,1 | 16,3 | 21,8 | 32,6 | 65,3 |
| 2 adults with 4 children | 4 568 121 | 14,6 | 18,3 | 24,4 | 36,6 | 73,2 |
| 3 adults | 3 086 579 | 9,9 | 12,4 | 16,5 | 24,7 | 49,5 |
| 3 adults with 1 child | 3 889 073 | 12,5 | 15,6 | 20,8 | 31,2 | 62,3 |
| 3 adults with 2 children | 4 506 397 | 14,4 | 18,1 | 24,1 | 36,1 | 72,2 |
| 3 adults with 3 children | 5 000 231 | 16,0 | 20,0 | 26,7 | 40,1 | 80,1 |
| 3 adults with 4 children | 5 494 086 | 17,6 | 22,0 | 29,3 | 44,0 | 88,0 |
| *Households of pensioners* | | | | | | |
| **1 pensioner** | 1 111 156 | **3,6** | **4,5** | 5,9 | 8,9 | 17,8 |
| 2 pensioners | 1 913 675 | 6,1 | 7,7 | 10,2 | 15,3 | 30,7 |
| 2 pensioners | 2 716 169 | 8,7 | 10,9 | 14,5 | 21,8 | 43,5 |

Source: own calculation, 2006

I compared the farm size determined in ESU with the 5 ESU set as the criteria of viability. I concluded that a farm of 5 ESU having an optional enterprise or enterprises **cannot** ensure the expectable profit level for a family of at least two members **surely** if the family has only on-farm profit. It can ensure if 79% of the SGM is profit content for an adult and it is 71% for a pensioner.

Supposing that the profit content does not exceed the 50% of the SGM, I determined that a farm of 5 ESU having an optional enterprise or enterprises **in all probability cannot** ensure the expectable profit level

I determined the farm sizes necessary for ensuring the subsistence level according to the structure of the different supposed profit content of SGM. On this basis I concluded that a farm of 5 ESU can only conditionally ensure the subsistence level for households of one or two adults, one adult with children and pensioners.

A farm of 5 ESU having optional enterprise or enterprises **cannot** ensure the living standard at subsistence level **surely** for families of at least two adults and three family members if the family has only on-farm profit.

Accepted the fact that the profit content of SGM is unreal if it is higher than 50%, a farm of 5 ESU having an optional enterprise or enterprises can ensure the subsistence level for at least one adult or one pensioner **in all probability**.

When investigating off-farm and on-farm together, through the example of a four-member family (two adults, two children) I analyzed the case in which one of the family members has off-farm profit. I fixed that the wage of the earner family member is 130 000 HUF per month. By this I justified that if at least one of the family members has off-farm wage, the farm size which is capable of ensuring the expectable profit of the family significantly decreases. (In case a monthly wage of 130 000 HUF, the farm size decreases by 18%.)

In the end, on the basis of data of three farms, I reflected the profit change and its relation to the subsistence level and the expected profit in case of different crop structure.

It should be noted that during model calculation I neglected the tax obligations of family farms and farmers. Taking this into consideration, the subject may be further studied.

By making model calculation, I tried to reflect that how big farm size can ensure the expectable profit and the subsistence level for a farming family. Comparing the results with the examined farms I concluded that majority of the farmers could live on without external profit source possibly at the level of subsistence. Among these farms one can find the so-called forced farms, which carry out production activities with the lack of other possibilities.

By making model calculation I justified the hypothesis that the 5 ESU farm size set in the Agrarian and Rural Development Operative Program as the criteria of viability does not cover the expectable profit of a family farm in case of on-farm profit, accepted the fact that households of those who live alone cannot be considered as family.

On the basis of my model calculations, I state that generalizing the criteria of viability is not correct due to the different size and structure of the farming families. I recommend the differentiating the criteria of viability in case of families of different sizes and structures.

To sum up, I can conclude that the determining the farm size ensuring viability or proper existence is extremely controversial and the structure of the household and off-farm profit cannot be neglected.

## 4. NEW SCIENTIFIC FINDINGS

1. I looked through the development of the agricultural society in Hungary from the middle of the 19<sup>th</sup> century till today on the basis of the relevant literature, from the point of view of the evolving family farming. I concluded that *family farms have had reasons for existence in the organization of the agriculture.*

2. On the basis of literature and my research, I created new definitions for family farms and family farming. In my own words, **family farms** *are ventures specialized for agricultural production, where family capital, ownership, direction and labour dominate. In ideal case, the farm is handed down to further generations and establishes the profit of the family that can be expected. It consists of both production for sale and production for own purposes. Family farming is an agricultural enterprise activity done within family economic frame.*

3. I constructed a **family margin calculation model**, which estimates the volume of the available net profit of families in 2005 and 2006 on the basis of different parameters.

4. I discovered that the definition and the way of calculation of the expectable model cannot be found in the relevant literature. *I created the definition of expectable profit. The* **expectable profit** *of a family farm is the sum which is left for the family from the annual revenue after covering all of the expenses as well as meeting the requirements of the regular maintenance work to ensure meeting its needs in an average way and besides create opportunities for accumulating. Its given rate can be determined to the given period and to the given region.* I considered expectable profit as the 180% of the subsistence level relating to the sub-region of Nyiregyhaza for different family types.

5. *By making model calculation I justified the hypothesis* that the 5 ESU farm size set in the Agrarian and Rural Development Operative Program as the criteria of viability does not cover the expectable profit of a family farm in case of on-farm profit, accepted the fact that households of those who live alone cannot be considered as family.

6. On the basis of my model calculations, I state that *generalizing the criteria of viability is not correct due to the different size and structure of the farming*

*families. I recommend the differentiating the criteria of viability in case of families of different sizes and structures.*

## 5. THE PRACTICAL USE OF THE RESULTS

I wish to contribute to getting to know the past and present of family farms from a scientific aspect and to the favourable situation of their future.

The information accumulated during my research work, the constructed model and database can be utilized in different fields and levels of the higher education, they can be used during theoretical and practical trainings of students, as well as they can be a basis for further economic and social sciences analysis and research.

## 6. PUBLICATIONS IN THE SUBJECT OF THE RESEARCH

**Books, book chapters:**

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