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**COMPARATIVE ANALYSIS OF CORRELATIONS BETWEEN
GRANTS AND LIQUIDITY IN CASE OF BÉKÉS COUNTY
AGRICULTURAL ENTERPRISES**

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1. INTRODUCTION

1.1. Relevance of the subject

The South Hungarian Plain region (i.e. Bács-Kiskun, Békés and Csongrád counties) are in a peculiar situation. These three counties lie at the southern-eastern border of Hungary and comprise 20% of the whole territory of the country. Due to its geographical position, after the country's joining the EU, it also became the southern-eastern border of the European Union. Most of the region's land surface is made up by plough land and as the quantity and yield of arable plants and products are so high, it is rightfully considered the „larder” of the country. Within the already mentioned region, Békés county has an even better position due to its favourable geographical characteristics and good quality soil, providing the county an agricultural potential that is higher than the average. The importance of agriculture is also highlighted by its position within the labour structure of the county, as well as the high proportion of surface that can be agriculturally cultivated, the excellent quality soil, and the internationally competitive agricultural industry. Three tenth of the county's inhabitants, and at national level only one fifth of the population are related somehow to some agricultural activity, production, and growing cereals, breeding pigs, cattle and fowls have more than a century traditions in this area.

As agriculture has an extraordinary role in Békés county, solving its problems also deserve outstanding attention. In the 1990s and before Hungary's joining the EU, there have been several aspects that meant a handicap for the county's agricultural industry: agricultural entrepreneurs faced difficulties in receiving loans, agricultural grants were very difficult to access both in methodology, format and conditions to fulfil, there was excessive red-tape and administration and the number of those employed by agriculture decreased, especially because earnings and incomes were extremely low in this field. As a general experience, we could say that profitability of agricultural enterprises in Hungary is very low, while the sector's need for subsidies and grants is very high. The transformations encumbered by the change of regime (the specific mode of privatisation, the excessively sectionated business structure, the high number of micro and small enterprises established) have all had an unfavourable impact on agriculture, which faced huge difficulties in coping with recession and drawbacks caused by the change of regime, especially in production.

In the 1990s, the biggest problem of agricultural small and middle sized businesses was their lack of finances, as well as their not having proper capital. Between 1995 and 1996 a programme for providing capital was launched in Hungary, which meant that the government provided a fund for state subsidies in the agricultural field, but producers faced serious problems in paying back their debts, so collaterals have been extended. As agricultural activities usually need long term investments, loans with more than a year maturity have an outstanding role in this respect. In my opinion, out of these, the most efficient and best type of loan was the one that was introduced in the second half of the 1990s, which was meant to provide capital for entrepreneurs, making it possible for them to have a revolving working capital, thus having the liquidity necessary for operation.

Government subsidies, favourable loan constuctions, financial products, European Union grants have an extremely important role in improving the financial situation of farmers, in making them able to finance their investments and current assets, in improving their profitability and liquidity. With Hungary's joining the European Union, the Hungarian agriculture has started a new chapter, and we have become members of the EU Common

Agricultural Policy (CAP). This has opened the way for agriculture and regions to access significant resources meant to improve investments, developments, profitability, while adapting to new conditions and meeting the new requirements have all meant very serious challenges to everybody. In order to access EU grants you need to know the legislation in case in details, you need to be an expert in filling in application forms and tenders, and you need to know what kind of grants and subsidies are available in this field.

1.2. Facts Preceding the Research

During my previous research activities, I have studied the agricultural loan experiences gained by the Békéscsaba branch of the Commercial and Credit Bank, with special attention paid to the significance of Békés county's agricultural field, to the financial problems that this industry is facing, as well as to the role and forms of state subsidies. In the period of the research (2000-2001) I made an analysis of the Commercial and Credit Bank Plc.'s credit and loan products, especially of those current asset loans that have a more than a year maturity, as well as their special collateral conditions, I also looked into types of agricultural loans, interest subsidies, and into the possibility of providing loans for especially those small and middle sized businesses that do not have enough liquidity and capacity of taking out a loan, but can increase these by special loan guarranties. I have also studied the activity of the Agricultural Enterprise Loan Guarranty Fund, which is of utmost importance especially in the case of SMEs, and, in addition, I have looked into the credit application of one of the concrete sole proprietor clients of the bank, following the implementation and conclusions of the whole application procedure.

Previous research has posed several questions and problems both as agriculture and as agricultural financing or the situation of subsidies linked to bank loans are concerned. As an example, we could list the low profitability of the industry, the loan collaterals, the high bank guarranties, the way of applying for subsidies, the lack of information farmers have, flaws in dissemination and excessive administration. During the research done I have come to the conclusion that the biggest problem in providing agricultural loans was the lack of capital in case of these enterprises. This is why, among others, providing them with the necessary capital, elaborating favourable loan constructions meant to supplement their lack of capital, an increase in the role of the state in providing agricultural loans have all become of ever greater importance. It is even more so, because in agriculture we have witnessed un unstable and not well enough elaborated policy, what is more, agricultural loans have not been properly structured, budgetary funds for this industry are not enough, the changing ministry policies and conception, which have all made banks be more and more suspicious in the field of financing agriculture. As far as the chances of agricultural businesses to access entrepreneurial loans are concerned, I have come to the conclusion that farmers must be much more prepared for and informed about both existing proposals and financing resources, through a network of specialist counsellors and information sources and databases (media, newspapers, magazines, etc.) easily accessible by farmers. In the case of banks, I think that solution can be provided by reevaluating loans and doing very strict risk analysis.

In the decade that has passed since then, there have been several changes in Hungary in the field of financing and subsidising agriculture that have made me continue my studies and research in the same domain, digging even deeper into the topic, making a correlation analysis and supplementing the conclusions related to providing loans with the opportunities of financing agriculture from grants and making an analysis of the profitability of these grants, as well as of their impact on liquidity.

1.3. Objectives

In my research, with the help of various methodology, I have made use of Békés county small and middle-size businesses data and indicators to provide an analysis of these enterprises' liquidity, profitability, capital structure, application for loans and subsidies, as well as their impact on the liquidity and profitability of the businesses. In my dissertation, I have dealt with the EU and national funds and financing resources (detailing the development funds to a higher extent, and dealing with production funds at a lower extent), as well as with the most important and most favourable loan constructions elaborated for farmers. Considering that the analysis of a bigger area, a region might distort the results of the analysis due to the fact that the different counties have different agricultural characteristics and structure, I have decided to resort to a more restrictive approach and start making a deeper analysis of a single county. I have made up my mind to choose Békés county because it has an above average agricultural potential and this field is of utmost importance in the life of the already mentioned county.

Objectives of my research:

The *main objective* of my research was to look into the impact that the agricultural subsidies and grants have on the liquidity, profitability of Békés county agricultural businesses. In order to do that, I have listed the following objectives:

- providing a historic briefing of the theory of liquidity and profitability, as well as of agricultural liquidity and profitability, as an introduction to my analysis and hypotheses;
- structuring subsidy and grant facilities for the periods before and after joining the EU, and in the present;
- analysing the changes in the Békés county agriculture in order to highlight the importance of the field;
- a theoretical presentation of phenomena related to leaking out subsidies and grants, as well as the decoupling of the amount of grants provided and the amount of production;
- analysis of liquidity and profitability of Békés county agricultural businesses in order to highlight correlations between them;
- analysis of the impact of favourable loan constructions and European Union and national agricultural subsidies and grants on the liquidity and profitability of Békés county agricultural businesses, analysis of the correlation between liquidity and profitability indicators of businesses and the subsidies received in order to demonstrate the influence of the grant system on liquidity and profitability.

2. MATERIAL AND METHOD

2.1. Hypotheses of the Research

After having studied and systematizing the bibliography of the topic, I have elaborated and analysed the following hypotheses in my dissertation:

- H1) Typically, there is an indirect proportion between the liquidity and profitability of Békés county agricultural businesses.
- H2) There is a correlation between applying for European Union and national agricultural subsidies and grants, as well as accessing favourable bank loan constructions, and between the liquidity and profitability of Békés county agricultural businesses.
- H3) The changing agricultural subsidy and grant system has contributed to improving the profitability of agricultural businesses, and as a consequence of that, there is clear evidence that solvency improved in Békés county.
- H4) Agricultural subsidies are not directly influencing profitability, thus decoupling subsidies and business proficiency, as well as decoupling the relationship between the amount of the grant and the amount of production have successfully been implemented in Békés county.

2.2. The Subject and Object of the Analysis

I have started my research by studying and interpreting the specialist bibliography on the topic. After having made an overview and a systematization of the national and international general and specialist bibliography on the topic, I have made up the database necessary for the analysis and I have analysed the data at my disposal. The secondary data necessary for my research have been provided by the databases of the following organisations:

- Agricultural Research Institute (AKI)
- Békés County Agricultural Office
- Békés County Chamber for Agriculture
- National Regional Development and Territorial Systematization Information System (TeIR)
- Békés County Statistics Office
- Central Statistics Office (KSH)
- Ministry for Regional Development

A significant amount of secondary data has been obtained from the test database of the Agricultural Research Institute. The number of agricultural businesses taken into consideration and operating in Békés county varied from year to year (with an average of 132), and each figure has been counted as a weighted average of the number of businesses taken into account in the survey and that of the data provided by the groups made up from them. In calculating the annual liquidity, profitability and capital structure indices, I have applied the so called global rate recommended by the Agricultural Research Institute methodology.

When analysing the development of Békés county agriculture, the conditions of accessing capital providing loans and European credits, the role of various loans, subsidies and grants, as well as the efficiency of national and EU grants and tenders, I have applied general and specific methods of analysis (relative numbers, averages, index numbers). When interpreting the results of the analysis, I could make good use of the experience provided by the specialists of the Békés County Agricultural Office related to how to access agricultural grants, and, last but not least, I have taken advantage of the internal materials of the Békés County Chamber for Agriculture. In analysing the correlation between liquidity and profitability, on one hand, and grants accessed, on the other, I have applied correlation calculations, factorial and cluster analysis with the help of multivariable statistics methodology. The period in focus for my analysis was between 1997 and 2009, and data available for analysis within this interval, as well as the approach and topicality of analysing the given period vary from one another.

2.3. Methodology Applied during the Analysis

2.3.1. Questionnaire Survey

Data related to the role of loans and grants have been provided by a survey based on questionnaires. This has been done in writing, individually, with closed and open questions, and was performed in 2006. The questions of the questionnaire have been divided into four topics, out of which the first was related to economy, the second dealt with analysing the agricultural loans accessed by the given business in the five years preceding the survey. The third group of questions aims at clarifying whether the agricultural entrepreneur intends or not to apply for another agricultural loan in the near future, and if so, what type of loan he could apply for. Finally, the fourth type of questions aims at analysing the kind of loans accessed by the entrepreneur in the five years preceding the analysis. I have repeated the questionnaire based survey in 2008 because of the changes encumbered in the subsidy and financing system (the favourable constructions of the New Hungary Regional Development Plan and the Agricultural Development Credit Providing Plan), extending the previous four topic questionnaire with a fifth topic, related to supply debts of the agricultural businesses and their receivables towards customers and wholesalers. By making a comparative analysis of the two surveys I tried to reveal and highlight the financial situation and problems of the agricultural businesses, as well as the changes in the loan structure in Békés county.

2.3.2. Correlation Analysis

I applied a correlation analysis of the correlation between the liquidity and profitability indices of Békés county farmers and the amounts obtained by these businesses as grants and subsidies, also trying to highlight the close relation between the above. I tried to find out to which extend these grants and subsidies accessed by the agricultural businesses have influenced their liquidity, profitability, and whether we can demonstrate some kind of a close correlation between them. Correlation analysis has been done by calculating the Pearson coefficient (R) and the determinant co-efficient (R^2).

The values between 0 and 1 of the correlation co-efficient (R) have been distributed to the following intervals:

- 0 – 0.30 = there is no demonstrated correlation between the two sets of data,
- 0.31 – 0.50 = weak correlation,
- 0.51 – 0.71 = middle strong correlation,
- above 0.71 = strong correlation between the two sets of data.

2.3.3. Analysis of the Main Component

When analysing the main component, by evaluating the significant correlation between the different indices, I tried to find out if there is a strong correlation between liquidity, profitability and capital structure indices on one hand, and the received grants of the Békés county agricultural businesses in focus on the other, and if so, to which extent and showing what trend. The main components resulted from the analysis provided the basis of the cluster analysis. The initial data matrix of my calculations was provided by the test database of the Agricultural Research Institute, and the time interval of my analysis was between 2001 and 2006. The average number of the agricultural businesses in my focus was 132, with a total of 789 for the whole period, out of which 126 were partnerships and 663 sole proprietorships. The columns of the datamatrix were provided by the financial data and indices of these businesses: total surface of business, current assets, short term liabilities, inventory, financial assets, rate of liquidity, quick rate of liquidity, cash flow, own capital, foreign capital, long term liabilities, resources, rate of own capital, rate of foreign capital, debt co-efficient, earnings provided by plant activities, net turnover, pre-tax earnings, turnover ratio profitability, asset ratio profitability, size of plants, proportion of European Union and national agricultural grants calculated to 1 EUME (grants and subsidies for growing and commercialising plants, breeding and commercialising animals, purchasing animals and other-non investment-grants), development grants and subsidies calculated to 1 EUME, as well as European Union and national agricultural grants calculated to 1 hectare. In my analysis, I decided to use the three liquidity indices (rate of liquidity, fast rate of liquidity and cash flow liquidity), as well as the debts co-efficient, the turnover rate profitability, the asset rate profitability, the size of the business and the total amount of grants together with the grants and subsidies calculated to 1 EUME. As, on the average, only about 8-10% of the businesses in focus have applied for some kind of development grants a year, in case of the big majority of entrepreneurs this figure is 0, thus development grants have not been taken into calculation during the survey.

2.3.4. Cluster Analysis

Cluster analysis has been carried out with the help of the latent variables generated by the previous main component analysis, as well as the determinant indices applied for the main component analysis in point of topic significance. Since the number of elements included in the sample is high ($n = 789$), I opted for using the non-hierarchical C-centre cluster making methodology in grouping the different agricultural businesses. I also checked whether the various agricultural businesses can be classified into different types and groups according to their liquidity and profitability indices, or the amount of grants received.

In the data matrix columns showing the rate of liquidity, the quick rate of liquidity and cash flow liquidity, there was an outstandingly high number (65%) of data containing a 0 denominator which made the analysis non-definable. The 0 denominator of the liquidity indices was generated by the 0 value short term liabilities of the businesses in focus. As a vast majority of the agricultural businesses analysed were local farmers (primary producers) or sole proprietors running cash businesses and having a cash turnover approach in registering transactions, they do not need to run a double accounting system in their books, so they do not have short term liabilities, in other words their short term liabilities do not show up in the database. As businesses having data containing a 0 denominator were not included in the analysis, the results gained through the main component and the cluster analysis referred only to businesses that had some kind of short term liabilities in the given period.

2.3.5. Deep Interviews

In order to assess the experience of banks in the issue, I used the format of the structured deep interview of executives working for the following banks:

- Budapest Bank Plc.,
- Commercial and Credit Bank Plc.,
- OTP Bank Plc.,
- Endrőd és Vidéke Takarékszövetkezet,
- CIB Bank Plc.,
- ERSTE Bank Hungary Plc.

In selecting the financial institutions, the main criteria were their involvement in providing agricultural loans, their having branches in Békés county, as well as their willingness to participate in an interview by providing the most sincere and most constructive contribution.

3. RESULTS

3.1. Trends of Agricultural Development in Békés County since the Change of Regime upto Present Day

Békés county is a primordiarly agricultural county in which growing cereals, breeding pigs, cattle and fowls have witnessed more than a century old traditions, while a vast proportion of population earns its living being employed in this national economy sector. The role of agriculture is extremely high in this county, thus, this agricultural character of the county makes us pay quite a lot of attention to the area's agricultural problems, especially to issues related to agricultural financing.

We can state that at the beginning of the 1990s there was a deep plunge accompanied by very serious changes, shown by drawbacks in production, quick depreciation of means of production, big recession in developments, destruction of production, commercialization and other infrastructural networks. Despite efforts made after the change of regime, the structure of the county's production has not changed. Considering the county's agro-ecological characteristics, the well mechanised and automated plough land plant growing is still the one that dominates. But, within this, growing cereals that need low cost and know how started getting in the focus of agricultural activities. Even closing down a single manufacturing capacity generated crisis in the whole industry. Not even animal breeding witnessed any structural change; what is still characteristic in this respect is the traditional pig, cattle and fowls breeding.

We can state that there is a decreasing trend in the county's animal breeding sector, as cattle and pig breeding shows a decrease in number. If we consider the overall tendencies of the industry, breeding fowls is no exception at all, as it is also in a decreasing trend, so we may conclude that except for sheep-farming, each sector has undergone very deep changes. The number of people and sole proprietors dealing with animal breeding has also fallen year by year in Békés county. There were no significant investments in the previous year in point of constructions. Contrary to this, we can witness some improvement in point of technological modernisation, compared to the previous years. What is also typical for the whole sector is that they permanently have sales problems, and prices have been continually going down, except for pork and poultry. As a consequence, the profitability of the sector diminished, what is more, in case of certain animal breeds, there had been periods with serious losses, as well. Market problems generated by overproduction, by the existence of stocks impossible to be sold, by negatively influenced market opportunities, and as a consequence of all these, by the very low purchase prices have become quite common and general.

3.2. Analysis of the Role of Agricultural Subsidies and Favourable Loan Constructions in Békés County

3.2.1. Analysis of How Intensively Capital Supplementing Loans and the Europe Loan Were Accessed

The capital supplementing loan is a credit facility adapted to agricultural characteristics and it had a significant role in the revolving working capital, that is why I intend to start the analysis of Békés farmers' access to various loans and grants by looking into conditions of accessing this kind of capital supplementing credit.

The year 2004 was the year of transition for Hungary, as joining the European Union has caused a change in the subsidy and market conditions of farming and husbandry, which meant a great challenge both for farmers and for the institutional system, as well. As agricultural activities usually need a longer term capital involvement, loans with longer than a year maturity are more important, and, in the already mentioned category, loans for purchasing durable current assets are even more important. Since capital supplementing loan had been introduced, it was a very attractive and popular facility among farmers, as it had favourable conditions, it was quick to be accessed, so there were several farmers that made use of it. Despite this, the number of such loans, as well as the amounts taken, have been continually decreasing and there had been a smaller or bigger fluctuation between 1997 and 2004. The year 2003 witnessed a boom in taking out loans, which was partly because of the drought in 2003, as well as because of the farmers' expectations. This was followed by a dramatic plunge in 2004, mainly explained by the introduction of the 100 billion HUF lump sum of the Europe Agricultural Credits programme with everybody expecting integration credit facilities. The government considered that one of its main tasks was to provide preparation support and facilities, as well as increased competitiveness for farmers, in order to cope with the EU integration. Among others, this is one of the reasons why the Europe Agricultural Credits Programme was launched in January 2004, which was very popular with farmers and producers, as, besides investments, these loans could be used for improving the farmers' financial situation and for purchasing current assets, as well, under very favourable conditions.

3.2.2. Describing the Role of Grants and Loans with the Help of a Questionnaire Based Survey

As a summary of the questionnaire based survey, we can conclude that the need for favourable loans of the agricultural businesses in focus has not really changed, but their content matter has. There has been a significant decrease in shorter than a year maturity loans, whereas interest for longer than a year maturity investment loans has risen. As far as the amount of loans is concerned, both shorter and longer than a year maturity current asset loans have dramatically decreased, while investment loans have witnessed a slighter rise in amount. The average interest rate has decreased in any type of loan and farmers could access credits with better and more favourable conditions. Each of the farmers participating in the survey had some kind of financial support, which was mainly support provided within the Agricultural environment management and was aimed at meeting the Environment protection and animal welfare requirements. In the future, agricultural businesses do not really intend to take up loans, and if they still do, that will be for investment purposes; meanwhile, farmers did not mention any significant credit taking, instalment paying problem. This will make us draw the conclusion that we can witness some kind of cohesion and upgrading of the industry in Békés county, accompanied by the improvement of liquidity and income circumstances of farmers.

3.2.3. Analysis of Intensity in Accessing National and EU Grants, As Well As of How Successful Tenders Are

The agricultural character of the South Hungarian Plain region and Békés county as part of it will also determine the level of their economic development. The gross added value per capita produced by the county's and the region's agricultural sector will significantly exceed the national average, and the sector's share of the GDP is well above the national average, as well.

Main conclusions of the survey:

- The increase of the county's and the region's economic performance is below the national rate and there is an increasing gap in the value of the GDP per capita;
- The lagging behind of the region can only be stopped with appropriate activities and know how in submitting bids for funds;
- The share of the county from tender funding has increased, the amount of funds accessed per tender has also risen;
- The value of projects has increased significantly, which indicates a strengthening in the economic power of tenderers;
- The county's tender submitting activity is very high, being placed in the first third among all counties;
- In allocating funds and grants, evaluating authorities have favoured more complex and higher implementation budget projects;
- Békés county tenderers have submitted bids above the national and regional average for European Union funds, as well, thus having an increased efficiency in this respect (Table 1);
- Meanwhile, there is an unfavourable aspect, which shows that the grant allocated for one project (thus the overall budget of the projects) in case of AVOP financed investments is lower than the national and regional average, which means that there are only minor individual investments carried out;
- The success in submitting tenders shows that the region, including Békés county, is prepared for participating with good chances in European Union calls for proposals, which may have its benefits in the period between 2007-2013: it will promote the economic cohesion of the county, including agricultural development and the progress of the processing industry and service sector that it is generating.

Table 1: Efficiency Rates of European Union funds and AVOP in Békés county

2004-2007	Required project (piece)	Amount of required project (M HUF)	Accessed project (piece)	Amount of accessed project (M HUF)	Efficiency Rate of funds amount (%)	Efficiency Rate of projects (%)	Required project amount per project (M HUF)	Accessed project amount per project (M HUF)	Efficiency Rate per project (%)
National EU funds	40558	1576388	15624	670852	42,6	38,5	38,867	42,937	110,5
National AVOP funds	11019	197133	4059	105489	53,5	36,8	17,890	25,989	145,3
Regional EU funds	5950	222281	2444	97702	44,0	41,1	37,358	39,976	107,0
Regional AVOP funds	2082	40748	858	22442	55,1	41,2	19,572	26,156	133,6
County EU funds	1358	70334	563	38382	54,6	41,5	51,792	68,174	131,6
County AVOP funds	533	10463	243	5940	56,8	45,6	19,630	24,444	124,5

Source: own calculation on the basis of TEIR

3.3. Analysis of the Impact That Grants Have on the Liquidity and Profitability of Békés County Agricultural Businesses

3.3.1. Analysis of the Tendencies Witnessed by Liquidity, Profitability and Levels of Financial Support

As a first step of this analysis, I have looked into the liquidity, profitability, debt and capital structure indices of Békés county agricultural businesses, according to the Békés county figures in the 2001 test database of the Agricultural Research Institute, trying to find out the levels of liquidity, profitability and grant allocation the above mentioned businesses face, whether they have any cash flow and income problems. I can state that in 2001, the agricultural businesses included in the sample have positive profitability indices, the value of their indebtedness co-efficients were altogether favourable, and except for the extremely high liquidity values of primary producers and small businesses, they all had reasonable value liquidity.

Following this, I tried to highlight the changes and trends in liquidity, profitability and grant amounts as far as the businesses in focus were concerned, in the period between 2001 and 2006, again based on figures from the test database of the Agricultural Research Institute. After having calculated the annual amount of liquidity, profitability and capital structure figures, I followed the Agricultural Research Institute methodology in applying the global rate. I came to the conclusion that the liquidity rates of individual farmers in Békés county have been much higher than the favourable values in every year, while the liquidity rates of partnerships were around the expected 1.6-1.8, or 1.3-1.5 values. The lowest value of indices was in 2002 for sole proprietors, then it started rising until 2006, whereas with partnerships it witnessed a slight decrease after 2004. When analysing the profitability indices, we can state that there was a fall between 2001 and 2003 both in case of individual businesses and for

partnerships, as well, then it continued with an increasing trend from 2004, while the rise in case of sole proprietors was bigger. The 2003 fall in incomes can be explained mainly by the unfavourable weather conditions, but we must also take into account the fact that the volume of agricultural subsidies and grants allocated without having to be repaid has also decreased in that period. As far as the amount of grants required by sole proprietors and business partnerships is concerned, there is a clear rising tendency, except for the recession in 2003; after 2004 there has been a significant increase in the amount of grants allocated, especially due to Hungary's joining the EU in 2004 and thus having access to all EU funds. This may lead us to the conclusion that increasing agricultural grants allocated without the need to repay them (like direct producer grants increasing turnover and decreasing production costs, subsidizing interests in case of loans with less than a year maturity or over a year maturity) have contributed to a great extent to an increase in profitability indices.

3.3.2. Analysis of Correlation between Liquidity, Profitability and Grants with the Help of Multivariable Statistical Methods

3.3.2.1. Correlation Analysis

I have made the correlation analysis with the help of primary data gained through the analysis of trends in liquidity, profitability and level of grants and subsidies. I have done all this by making a separate analysis of individual husbandries (farmers) and business partnerships. I tried to find out whether there was any correlation between the grants received and the liquidity indices of each enterprise, and if there were, what kind and how big it was, and which groups these business could be classified in according to their profitability and grant level.

While analysing liquidity and profitability correlation, we may state that, whereas in case of sole proprietorships (individual farmers) there is a middle strong relationship between their liquidity and profitability, in case of business partnerships these two factors do not correlate. In point of the correlation between liquidity rates and the amount gained as grants we may state the same, as in individual businesses there is also a middle strong correlation between liquidity and grants, whereas with business partnerships there is no correlation at all, which means that solvency does not depend on grants and subsidies. (Tables 2 and 3)

Table 2: Correlations of liquidity rates, profitability indices and grants in case of individual farmers

	Rate of liquidity	Turnover rate profitability	Asset rate profitability	Amount of grants
Rate of liquidity	-	a) $R^2 = 0,5106$ R = 0,7146 b) R = 0,160	a) $R^2 = 0,2652$ R = 0,5150 b) R = 0,44	a) $R^2 = 0,3277$ R = 0,5724 b) R = 0,017
Turnover rate profitability	a) $R^2 = 0,5106$ R = 0,7146 b) R = 0,160	-	-	a) $R^2 = 0,7573$ R = 0,8702 b) R = 0,027
Asset rate profitability	a) $R^2 = 0,2652$ R = 0,5150 b) R = 0,44	-	-	a) $R^2 = 0,2106$ R = 0,4589 b) R = 0,033
Amount of grants	a) $R^2 = 0,3277$ R = 0,5724 b) R = 0,017	a) $R^2 = 0,7573$ R = 0,8702 b) R = 0,027	a) $R^2 = 0,2106$ R = 0,4589 b) R = 0,033	-

Notation: a) in case of analysing aggregated data, b) in case of analysing individual data
Source: own calculation

Table 3: Correlations of liquidity rates, profitability indices and grants in case of business partnerships

	Rate of liquidity	Turnover rate profitability	Asset rate profitability	Amount of grants
Rate of liquidity	-	a) $R^2 = 7E-06$ R = 0,0027 b) R = 0,113	a) $R^2 = 0,0655$ R = -0,2559 b) R = 0,014	a) $R^2 = 0,0003$ R = 0,0175 b) R = -0,210
Turnover rate profitability	a) $R^2 = 7E-06$ R = 0,0027 b) R = 0,113	-	-	a) $R^2 = 0,0081$ R = 0,0902 b) R = 0,062
Asset rate profitability	a) $R^2 = 0,0655$ R = -0,2559 b) R = 0,014	-	-	a) $R^2 = 0,1400$ R = -0,3754 b) R = -0,034
Amount of grants	a) $R^2 = 0,0003$ R = 0,0175 b) R = -0,210	a) $R^2 = 0,7573$ R = 0,8702 b) R = 0,027	a) $R^2 = 0,2106$ R = 0,4589 b) R = 0,033	-

Notation: a) in case of analysing aggregated data, b) in case of analysing individual data
Source: own calculation

When analysing the aggregated profitability indices of these enterprises, I draw the conclusion that in case of sole proprietors (individual farmers) there was a strong or mid strong correlation between profitability indices and grants; yet, this result was not proved and backed up by analysis based on individual data. Due to their size, type of activity, structure, grants have had a bigger impact on their profitability than in case of business partnerships, where profitability did not prove to be in such close correlation with the amount of the grant. We can also state that the changing agricultural grant system meant to improve agricultural businesses' income position has had a bigger impact on individual farmers, whereas in case of business partnerships neither solvency, nor profitability really depends on grants. This will make us conclude that grants cannot be planned and used as a tool in improving liquidity and profitability. Therefore, the fourth hypothesis of the dissertation seems to be proved by the fact that agricultural subsidies and grants do not directly influence profitability, and in case of

business partnerships we can also state that we can make an efficient separation between grants and plant performance.

3.3.2.2. Main Component Analysis and Cluster Analysis

When analysing the results obtained in my previous main component and cluster analysis research, I came to the conclusion that the Békés county agricultural enterprises included in the Agricultural Research Institute 2001 test sample belong to the same cluster, except for a few businesses, in point of profitability, liquidity and capital structure. These enterprises can be classified in one bigger and two smaller groups depending on the first main component coordinate, except for a couple of businesses. In the group with the highest number of units there is a linear relationship between the main components. According to the second and third main component coordinate, we can depict a bigger group with a few businesses having outstanding figures. The reason for the businesses having outstanding main component values is either that the enterprise has an outstandingly high indebtedness coefficient, or that it has a liquidity index above the average. The dots representing the different farms cannot make up any other, well identifiable groups, that might have characteristics leading to being able to form other groups. I have made the hierarchic cluster analysis with the help of the simple chain method, Euclides distances and standardised data, also based on the Agricultural Research Institute 2001 test sample database related to Békés county enterprises. My previous assumption according to which agricultural enterprises could be classified in 5 groups as far as their business format is concerned has not been proved; this means that the dendrogram of the cluster analysis does not show five different clusters positioned next to each other- as it was assumed before. The similarity of the observation units is very high, thus we can state that the similarity of the businesses is above 84% based on data gained from 83 enterprises. I could also state that you cannot identify the business form and structure of a given Békés county agricultural enterprise based on its liquidity and profitability indices.

Extending the earlier analysis databases I have made further main component and cluster analysis, with the help of the SPSS 11.0 programme. It was again that I came to the conclusion that the Békés county agricultural enterprises do not make up well identifiable separate groups based on their liquidity, profitability and grants figures; what is more, they do not clearly separate according to their business form. In both cases, most of the enterprises belong to a bigger group and the database is not really appropriate for cluster analysis. In case of both cluster procedures, the biggest cluster is characterised by low liquidity and grant level indices, and in point of EUME they are made up by smaller businesses. While individual farmers (sole proprietors) are characterised in this cluster by lower profitability, the business partnerships within this cluster has better profitability indices. Cluster analysis has also proved the results of my previous research, which said that there was no strong correlation between liquidity, profitability and grant figures in case of Békés county agricultural enterprises. In case of sole proprietors there is a medium strong correlation between turnover based profitability indices and grants received, but, as far as business partnerships are concerned, both liquidity and profitability indices, as well as the amount of grants, either being classified around main components or making up separate clusters, do not show a strong correlation with each other. (Tables 4 and 5)

Table 4: Rotated Component Matrix – based on data of individual farmers

	Components		
	1	2	3
Rate of liquidity	0,993		
Fast rate of liquidity	0,996		
Cash flow liquidity	0,996		
Debts co-efficient			-0,985
Turnover rate profitability		0,498	
Asset rate profitability			0,987
Size of the business		0,800	
Grants calculated to 1 EUME		0,663	
Total amount of grants		0,952	

Source: own calculation

Table 5: Rotated Component Matrix – based on data of business partnerships

	Components			
	1	2	3	4
Rate of liquidity	0,996			
Fast rate of liquidity	0,994			
Cash flow liquidity	0,993			
Debts co-efficient		-0,748		
Turnover rate profitability		0,702		
Asset rate profitability		0,856		
Size of the business			0,933	
Grants calculated to 1 EUME				0,943
Total amount of grants			0,904	

Source: own calculation

Results of analysis carried out using the multivariable statistical methods show that the impact of agricultural grants and subsidies can be discovered mainly among individual farmers (sole proprietors); in case of business partnerships neither liquidity, nor profitability does basically depend on grants, which makes us conclude that grants and plant performance can be successfully separated from each other.

3.4. Survey of Bank Experience with the Help of Deep Interviews

At the end of my research I would have liked to find out the current opinion of banks related to agricultural loans, what is their experience in the process of farmers taking out loans and paying them back, compared to the start of my research in 2001, in order to have an insight of what has changed and how in evaluating farmers as creditees from the point of view banks.

The answers provided to my interviews made me draw the conclusion that the problems encountered within the 2000-2001 research at the Commercial and Credit Bank (i.e. low profitability of the sector, collaterals, high bank collateral, the way of applying for grants, lack of information on behalf of the farmers, excessive administration and red tape etc.) have been solved to a great extent and we can witness a significant positive change, especially in appreciating and evaluating agricultural entrepreneurs, the representatives of the agricultural sector as potential bank clients and partners. My previous analysis has driven me to the conclusion that the biggest problem in providing loans in the agricultural sector was the lack of capital, which is also an aspect that, according to bank feedbacks, shows a positive tendency nowadays. Banks are more optimistic related to financing the agricultural sector than they used to be 9 or 10 years ago, they consider farmers a less risky and problematic, but more reliable type of client than those who operate in other business fields, both in point of granting them a loan and their capacity of paying back loans. As far as chances of being granted a loan are concerned I can sum up that by now, agricultural clients have significantly easier, faster and more favourable conditions to fulfil in order to be granted a loan, and financial institutions pay more attention to better inform their agricultural clients (through the media, by various publications, leaflets, organising lectures, etc.).

4. NEW SCIENTIFIC FINDINGS

4.1. New or Novative Results Achieved during My Research

- I managed to prove by statistical means that *the liquidity of Békés county agricultural enterprises does not depend on grants and subsidies, thus the latter cannot be designed as tools improving liquidity*, which applies even more to business partnerships. The grants' potential long term impact on liquidity cannot be demonstrated, but, nevertheless, they still have an important role in solving short term liquidity problems.
- I managed to prove by statistical means that, in Békés county, the impact of agricultural grants and subsidies can be primordiarly demonstrated in case of individual farmers, who make up more than 70% of the county's agricultural enterprises, whereas in the case of business partnerships neither liquidity, nor profitability does basically depend on grants and subsidies. *Because of their size, activity, structure, the amount of grants has had a different and bigger ponder on their profitability, thus, in their situation, dependency on grants and subsidies, in other words on agrarian policies, is higher.*
- If we consider these three aspects- profitability, liquidity and grants- the analysis has proved that *they are not in a strong correlation, which shows a significant outleak of grants and subsidies in agriculture*. We can conclude that part of the grants and subsidies meant to be accessed by Békés copunty farmers and agricultural enterprises does not reach the original target group (i.e. the producer), but it gets to targets activating in phases preceding or following the agricultural production process.
- I managed to demonstrate by analysis based on multivariable statistical means that there is no direct influence of agricultural grants and subsidies on profitability, thus, *separating grants from plant performance, decoupling the correlation between the amount of the grants and that of production has been successfully done in the Békés county husbandries*, especially in the case of business partnerships.
- Based on empirical experiences, I managed to demonstrate that *there has been a large positive change in the case of previous loan granting procedures and problems*; by now, banks consider their agricultural clients very reliable, as having more and more capital and their chances to access loans are bigger and bigger. They can access credits more easily, faster, and with more favourable conditions than ten years earlier. This is mainly due to the fact that banks have significantly improved their opinion about the agricultural sector, they do not consider agricultural enterprises as partners posing bigger risk than any other business organisations; what is more, a more efficient communication and customer relation, a more flexible loan granting procedure and a less sophisticated, faster and clearer administration have all led to a positive development in this field.

4.2. Fulfillment of Research Hypotheses

Based on analysis I summarize the results of my hypotheses in Table 6.

Table 6: Results of my hypotheses

Hypotheses	Analysis	Result	Status
H1) Typically, there is an indirect proportion between the liquidity and profitability of Békés county agricultural businesses.	Analysis based on multivariable statistical means (Correlation Analysis, Analysis of the Main Component, Cluster Analysis).	In case of sole proprietorships (individual farmers) there is a middle strong relationship and direct proportion between their liquidity and profitability, but the further analysis do not support this. In case of business partnerships these too factors do not correlate.	Not proved hypothesis
H2) There is a correlation between applying for European Union and national agricultural subsidies and grants, as well as accessing favourable bank loan constructions, and between the liquidity and profitability of Békés county agricultural businesses.	Questionnaire Survey, Deep Interviews, Analysis based on multivariable statistical means (Correlation Analysis, Analysis of the Main Component, Cluster Analysis).	The impact of agricultural grants and subsidies can be primordiarly demonstrated in case of individual farmers, whereas in the case of business partnerships neither liquidity, nor profitability does basically depend on grants and subsidies. The profitability, liquidity and grants are not in a strong correlation, which shows a significant outleak of grants and subsidies in agriculture.	Partly proved hypothesis
H3) The changing agricultural subsidy and grant system has contributed to improving the profitability of agricultural businesses, and as a consequence of that, there is clear evidence that solvency improved in Békés county.	General and specific methods of analysis (relative numbers, averages, index numbers), Analysis based on multivariable statistical means (Correlation Analysis, Analysis of the Main Component, Cluster Analysis).	The changing agricultural subsidy and grant system has contributed to improving the profitability of agricultural businesses, especially in the case of individual farmers, whereas liquidity basically does not depend on grants and subsidies.	Partly proved hypothesis

Source: own construction

Table 6: Results of my hypotheses (continuation)

Hypotheses	Analysis	Result	Status
H4) Agricultural subsidies are not directly influencing profitability, thus decoupling subsidies and business proficiency, as well as decoupling the relationship between the amount of the grant and the amount of production have successfully been implemented in Békés county.	Analysis based on multivariable statistical means (Correlation Analysis, Analysis of the Main Component, Cluster Analysis).	Agricultural subsidies are not directly influencing profitability, thus decoupling subsidies and business proficiency, as well as decoupling the relationship between the amount of the grant and the amount of production have successfully been implemented in Békés county, especially in the case of business partnerships.	Proved hypothesis

Source: own construction

5. CONCLUSIONS AND SUGGESTIONS

Agricultural production in Békés county lies on traditions; yet, it was absolutely logical and out of necessity, that there has been a generation change, as well, leading to the fact that by now, fewer and fewer young people have been willing to deal with agriculture in the county and there has been a decrease in the number of those employed in agriculture.

Frequent droughts damaging plough land cultivation of plants, unfavourable winters and inland waters have all caused significant damages either by destroying the whole harvest or just generating losses in yield in the period that is in the focus of our analysis; with the year 2009, the credit crunch and the economic crisis have added to the list of difficulties farmers had to cope with.

As far as the county's animal breeding sector is concerned, cattle and pig breeding has witnessed a decrease in number. The falling tendency is also typical for the whole sector, as not even fowles can be considered an exception to this, so we may say that, except for sheep breeding, there have been unfavourable, negative tendencies and changes in all fields. Even the number of sole businesses and enterprises dealing with animal husbandry is decreasing year by year. There have been no significant building investments in the field, but we could see an increase and improvement in modernising technology. I consider that modernising and further developing the mechanical and infrastructural background of several plants cultivated on plough lands (like cereals, oil producing plants, leguminous plants etc.) are very important, as almost half of the agricultural businesses run in the county deal with some kind of cereals. What is typical of the whole area of animal breeding is that there are almost permanent commercialising problems, and farmgate and retail prices have decreased- with the exception of pork and poultry. As a direct consequence, the profitability of the sector has also decreased in case of certain breeds of animals, even producing losses in the period in focus. The situation has even been aggravated by the extreme drought and the extremely high fodder prices induced by it. A more systematised land market, accelerating the estate centralisation process (more than 40% of the agricultural businesses in the county operate on lands smaller than 30 ha), the development of animal breeding and food processing based on the latter could all help solve the problems and contribute to progress. I also think that it would be important to have a change in the cereal-meat producing character of the county's agriculture, by developing other areas of activity (like bioproducts, seeds, breeding animals for breed, trade, etc.); diversification in the activity of agricultural businesses, establishing multifunctional husbandries, as well as developing a network type liason and cooperation (producer, commercialising clusters or running and developing other cooperation forms) are also important aspects in my opinion.

As agriculture usually needs a longer term financing, more than a year maturity loans are of ever greater importance, more specifically the loans used for purchasing durable current assets. Their significance lies in the fact that by having granted the loan, by the end of the maturity period, a well run and operating enterprise will be able to finance its own assets, and it will not need any more loans. The loans introduced in 1997 meant to supplement capital have all adapted to the characteristics of the agriculture at the time and have contributed significantly to the revolving working capital, that is the reason why I started analysing the loan accessing habits of Békés county farmers by analysing this type of credit facility. I came to the conclusion that one of the biggest problems that farmers had to face was providing the high collateral required by the bank, which was something that most agricultural businesses could not afford; another very serious problem was the capacity to pay back the instalments in

time. What is more, the source for paying back the loan was to have had the results (the yield) of production activities, which, in case of losses encountered during the production process and with snowballing debts, was almost impossible to solve. Apart from these problems, this type of capital supplementing loan was very popular among farmers since its first launch, due to its favourable conditions, quick access, and lots of farmers have resorted to apply for it. But, in spite of this, there has been a decreasing tendency both in the number of this type of credits applied for, and in the amount required, as well, with certain fluctuations between 1997 and 2004. The latter witnessed an especially dramatic fall, which can mainly be explained by the launch of the 100 billion HUF lump sum Europe Plan Agricultural Loans Programme and the growing interest towards integration loans made public within the programme already mentioned. In my research, I could say that both the capital supplementing loan and the Europe loan have been accessed mainly by primary producers or sole proprietors (individual farmers), but the amount of the loan was higher in case of the business partnerships. The Europe credit facility was mainly used for purchasing materials and tools, as well as for refinancing and paying back the previously accessed (mainly capital supplementing) loans.

By having made a questionnaire based survey of the role of loans and grants, I could draw the conclusion that more than half of the businesses analysed in the given period resorted to some kind of agricultural loan, most of them applying for more than a year maturity loans for purchasing current assets, i.e. loans meant to supplement their capital. As far as grants and subsidies are concerned, we can also say that almost every agricultural enterprise included in the study has applied for some kind of agricultural grants, most of them for purchasing machines, a lot of others for making construction investments related to animal husbandry and growing plants, but the NVT Agricultural environment management target programme was also very popular among farmers. When analysing the tendency in the need for loans and grants, I applied the questionnaire based survey again two years later. I found out that the Békés county agricultural enterprises' need for favourable loan facilities did not really change in the target period, but the structure did: there was a significant fall in the need for less than a year maturity loans, whereas the number of those applying for more than a year maturity loans increased, and so did the amount of the loan, as farmers could access them with better and more favourable conditions.

At the beginning of my research, more than half of the Békés county agricultural enterprises faced some kind of transitory or permanent liquidity problem, which meant a serious obstacle in their accessing any kind of loans. In addition, I have encountered various other problems when analysing the credit taking facilities of farmers, like low profitability of the sector, serious lack of capital, loan collaterals, high bank collaterals, the format and way of applying for grants, lack of sufficient information provided to farmers, lack of dissemination, excessive administration and red tape, etc. These are all areas in which there have been very serious progresses and positive changes: banks start considering agricultural entrepreneurs more and more reliable clients, having ever stronger capital and posing fewer and fewer risks and problems, both when applying for loans and when paying back in instalments. The most serious problem in agricultural crediting used to be the lack of capital, which is also improving in the opinion of banks. When analysing the chances that farmers had in applying for and accessing loans, I came to the conclusion that it is much easier, quicker to access loans nowadays, and terms are more favourable, while banks are more optimistic in financing the agricultural sector than a decade ago. This is mainly due to the fact that banks have positively changed their opinion and approach to the agricultural sector, they consider it much stronger in capital, less risky and a more reliable partner in several cases than those

entrepreneurs that operate in other sectors. The more efficient communication, the better customer relations, the more flexible and faster credit facilities and application procedures have all contributed to the fact that farmers can access external resources and funds more easily.

I analysed the European Union and national grants and subsidies with the help of statistical analysis. I can state that agriculture has an important role in Békés county and that the gross added value produced per capita in the agricultural sector is well above the national average, whereas the GDP share of the sector is also above the national average. At the end of my research I could learn that the proposal submitting activity of the county is very intense, it is in the first third among the counties, the funding share originating from EU and other tenders and bids has increased in the target period and the amount received per tender has also risen. Tenderers in Békés county have submitted bids for EU funding and grants with an efficiency above the national and regional average, which will contribute to the economic cohesion and progress of the county, including agricultural production and processing industries based on the former, as well as development of the tertiary sector of services in the 2007-2013 funding period. As far as the amount of grants required by enterprises is concerned, there is also an increasing tendency, especially after 2004, when there was a considerable rise in funding, accessible partly because of the new opportunities provided by the country's joining the European Union in 2004. I drew the conclusion that we can witness the cohesion and development of the agricultural sector in Békés county, as well as an improvement in the farmers' liquidity and profitability.

I have considered that the main goal of my research would be to analyse the role that agricultural grants and subsidies, as well as favourable loan facilities have had in improving liquidity and profitability in case of agricultural enterprises. I found out that the changing agricultural grant and subsidy system meant to improve the income situation of enterprises has had a greater impact on individual farmers, who make out more than 70% of the county's agricultural businesses, whereas in case of business partnerships basically neither liquidity, nor profitability have been influenced by grants, so they cannot be planned and used as tools to improve liquidity and profitability. Consequently, agricultural grants and subsidies do not have a direct impact on profitability, while in the case of business partnerships, separating grants and plant performance can be successfully done in Békés county.

6. SUMMARY

Due to its favorable geographical features and soil of good quality, Békés county has an agricultural potential above the average, therefore agriculture plays an important role in its economic life. The bearing of agriculture is reflected by its place in the structure of labour, the high percentage of agriculturally cultivable land, the excellent quality arable land, and the food industry, which is competitive even in international terms. In the county grain production, pig, beef and poultry raising goes back to centuries, and the contribution of agriculture to GDP is two times more than the national average. Owing to its agrarian feature, the agricultural problems of the county, especially the questions of agrarian financing, deserve considerable attention.

In my research analysing the data and indexes of agricultural enterprises in Békés county, I studied the role and significance of agrarian subsidies, the profitability, liquidity and capital structure of enterprises, the availability of credits and subsidies, and also the correlation between profitability, liquidity and subsidizing level of farming enterprises. What I conceived as the most important aim of the thesis is to study what kind and how significant role the agrarian subsidies and preferential credit constructions played in the liquidity of enterprises. During my studies, I also searched for answers whether the phenomenon called 'subsidy leak' belonging to the questions of efficient application of subsidies, and whether the process of decoupling, ceasing the connection between the extent of subsidy and that of production, can materialize in the enterprises in Békés county in case the standard area-based subsidy (SPS) is launched. To start my research with, I studied and treated the literature of the subject.

I shortly reviewed the progress of small and medium-sized agricultural enterprises from the change of system until today. I outlined the concepts of liquidity, profitability and competitiveness, the capital structure and source composition indexes of agricultural enterprises from several authors' point of view. I reviewed how the profitability of agriculture varied since the change of systems. I presented the financing characteristics due to the special features of agricultural production, moreover the financing strategies of agricultural enterprises which influence the possibility of financing and credit borrowing. I demonstrated the European Union and national subsidy systems, besides, the role of preferential credit constructions offered to agricultural enterprises during three periods: before joining the European Union, after joining, and the period between 2007 and 2013. Since the subject of agrarian subsidies is remarkably extensive and diverse, I outlined the developmental subsidies in detail, but the subsidies connected to production tangentially.

The problems of agricultural enterprises are the lack of assets, lack of capital, financing ongoing production and development, finally the low income level achieved with agricultural activity. The national subsidies, the preferential credit constructions and since 2004 the European Union resources play an extremely important role in improving the financial situation of farmers, financing their operating funds and materializing their investment. I studied the role of national and European Union subsidies and preferential credit constructions in Bekes county by the methods of questionnaire, in-depth interviews, and statistical analysis. Among the preferential credit constructions, I highlighted the capital supplemental credit constructions and the joining credits called within the scope of the Europe Plan Agrarian Credit Program. I pointed out that both the capital supplemental credit and the Europe credit were really popular with farmers, most of whom used them as primary producers or self-employed farmers; considering the sum of credit joint businesses applied for greater sums of credit. In most cases the Europe credit was borrowed for purchasing material

and assets, or for repaying credits – mostly capital supplemental credits - borrowed earlier. I established that the need of enterprises in Bekes county for preferential credit constructions did not change in a great extent in the period investigated, however, the composition of them became different: the need for credits dated within a year dropped significantly, while the number of applicants claiming investment credits dated over a year increased, the sum of claimed credit increased, and farmers could obtain credit on more favorable conditions.

We can notice a significant, positive turn in connection with problems of borrowing credit well-seen in earlier researches: banks consider agricultural entrepreneurs as reliable, more and more financially strong clients, farmers have better chances to obtain credit – it is easier, faster and conditions are more favorable to obtain credit nowadays than one decade before, which I assigned to the fact that the judgement of banks towards the agricultural sector has improved considerably. As for the subsidies, it can be stated that almost all the enterprises I surveyed obtained agricultural subsidies, most of them for purchasing machinery, besides, the investment supporting aim was also remarkable for raising animals and crop production, finally, NVT Agrarian Environmental Farming Program was also popular with farmers. Farmers in this region realized the economic significance of subsidies, thus the indexes of intensity of participation in tenders and effectiveness are more favorable than in other counties of the region, and even higher than the national average. It all foreshadows that farmers of the county will be successful at obtaining the developmental resources during the supporting period of 2007 and 2013 fostering the county's economy together with its agrarian sector to join up.

I analysed the correlations between liquidity, profitability and supporting level of agricultural enterprises in Bekes county by using statistical methods of several variables – correlation analysis, principal component analysis, cluster analysis. A significant part of calculations is based on the testing plant database of the Agricultural Research Institute (AKI) concerning Bekes county. I proved that the close correlation found between liquidity, profitability and subsidies cannot be detected, agricultural enterprises in Bekes county, on base of their profitability and liquidity indexes and supporting data, belong to one group apart from some exceptions. I confirmed that the solvency of agricultural enterprises in Bekes county does not depend fundamentally on subsidies, thus they cannot be taken into plan as an expedient to improve liquidity. I found evidence that agrarian subsidies do not influence liquidity of agricultural enterprises in Bekes county directly, thus the process of decoupling, ceasing the connection between the extent of subsidy and that of production, can materialize successfully in enterprises in Bekes county.

On the whole, it can be established that in Bekes county in the last decade a significant positive turn took place concerning the agrarian sector joining up, farmers' liquidity and income level improvement, farmers' better chances at obtaining credit, the transforming agrarian supporting system served for improving the income position of enterprises and will serve in the future as well, however, we must pay greater attention to adequate utilization of agrarian subsidies and subsidy leak.

7. LIST OF PUBLICATIONS

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