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ANALYSIS OF THE ECONOMIC EFFECTS OF EUROPEAN UNION SUBSIDIES ON THE AGRICULTURE OF A SPECIFIC SPATIAL UNIT – REGION, SUB-REGION

DISSERTATION

Thesis Booklet

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1. Summary

The focus of my dissertation is the analysis of the economic effects of European Union subsidies in Hungary. In my thesis, I examine how current (for operational purposes) and capital transfers given by the EU can change the financial position of companies operating in a specific sector of the national economy, agriculture, in a specific region of Hungary, the Southern Great Plains.

The strategic role of the agricultural sector within the national economy is beyond dispute. It would be misleading to judge its importance solely on the basis of statistical data on economic activity: national agriculture plays a crucial role in food security. In addition, it is also important to take into account the specific relationship between agriculture and natural resources, the ability of the rural population to maintain population, its role in maintaining biodiversity, and much more. A comprehensive list of the various roles of agriculture would be lengthy.

Hungary's accession to the European Union created an opportunity to close the socio-economic gap with Western European countries. The accession resulted in a change to the regulatory system of farming, and therefore the conditions of farming and, of course, the position of agriculture as well. When evaluating the performance of agriculture, it is essential to remember that, due to the peculiarities of agricultural production, an integrated systemic approach is needed. Such an approach requires the development of specific algorithms and indicators to form a realistic view of agricultural performance.

The application of indicators published in the literature requires careful calibration depending on the sector in question. This statement is particularly true for agriculture, because, among other things, production and work processes are often separated in time, and production processes are tightly linked to each other.

Early into my research, I have realised, after studying relevant literature, that the assessments of the state of agriculture are often unsound. Financial indicators often ignore the sector's specificities, its spatial economic aspects, and their economic effects. This led me to formulate the questions my dissertation seeks to answer:

- What are the characteristics of agricultural production that must be considered when defining performance indicators?
- Why is it important to consider the economic effects of the spatial aspects of agriculture?
- Is it necessary to make corrections when defining indicators, because of the actual accounting principles?
- How have the reforms of the Common Agricultural Policy (CAP) instruments, and the available funding sources changed?
- Which indicators characterize the development of efficiency, productivity, wealth and financial positions? Can these indicators be used for agriculture and agricultural businesses? If not, what modifications are necessary for their application?

The purpose of my research was to identify the specific characteristics of the agricultural sector that cannot be ignored when defining relevant performance indicators. I wanted to show that the economic effects of spatial economic aspects must be taken into account when analyzing the performance of agriculture if we want to create an accurate view of the sector. I also wanted to prove that it is necessary to make corrections when applying certain financial indicators to agriculture.

Finally, I wanted to quantify the impact of current and capital transfers on the asset, economic and financial positions of businesses through the example of a specific region.

After formulating my research questions, I set up my five hypotheses, four of which I was able to prove by way of careful analysis of the relevant literature, and statistical data analysis applying various statistical tests.

The aim of this study is to help decision-makers get a more accurate reading of agricultural performance in the future. Based on the method presented, the analysis of the effects of subsidies could even be extended to the national level. Unfortunately, within the framework of this dissertation, I did not have the opportunity to extend the geographical scope of the research to the national level. However, I am convinced that most of the results of this study can be extrapolated to other regions and to Hungary as a whole.

2. Theses

Accession to the European Union created an opportunity for Hungary to strengthen its agricultural performance. In my dissertation, I looked for evidence whether the European Union subsidies (current and capital transfers) achieved their goal. The geographic scope of my research was Hungary's Southern Great Plain region, with a focus on agricultural partnerships and companies operating in the region.

I formulated my hypotheses based on the questions I seek to answer, and tested them using several methods.

To verify my first hypothesis, I primarily relied on a review of relevant literature, and then in my dissertation I provide proof with specific calculation examples.

(H1) as follows:

The companies' annual reports database (set up according to currently accepted accounting principles) requires modifications, when calculating sectoral financial indicators, to ensure the coherence of micro-level and macro-level performance indicators, or the validity of the indicator.

In my dissertation, based on the review of literature presented (chapters 3 and 4), I demonstrate that there is a significant difference between the modified financial indicators I propose and the indicators in the relevant literature (chapter 6). The change is significant enough to affect how a given economic state is perceived. Examples of such indicators are: "*coverage of fixed assets III."; "* net *working capital II."*
I also proved with calculation examples that due to the specific nature of the agriculture sector, the liquidity indicators found in the literature do not give a realistic picture, and their modification - with the value of current assets functioning as capital - is necessary.
With regards to the profitability indicators, I show that income categories, as calculated following the current accounting standards, and the related profitability indicators, do not give a realistic assessment of the income-generating capacity of the regular operations of an agricultural firm.
For example, this study proposes the use of "profitability proportional to sales revenue III. indicator", which calculates the ratio of the result of regular activity to sales revenue, is considerably smaller than the "traditional" indicators. Moreover, in some cases, even though the production was unprofitable, the state aid overcompensated, and covered this loss shown in the usual indicators, correcting it to a positive value.
I also proved that the value adjustment in the balance sheet and the discretionary reserve on the source side significantly influence the realistic assessment of the economic position of the given company. When calculating the proposed new indicators, I corrected the original data with these values. The use of value adjustment is a possible tool for increasing the value of equity. However, this makes it impossible to assess the true financial state of the operation.
When calculating *net working capital* (NFT), I also illustrate the distorting effect of the item "3. deferred income" based on the data of two financial years of a company
Based on the above, I consider my hypothesis (H1) to be confirmed.

(H2) as follows:

Since Hungary's accession to the European Union, the income-generating capacity of the agricultural sector and the efficiency of production have changed in a favourable direction.

Among other things, I examined the following issues in chapter 6.1 of my dissertation:

- the embeddedness of agriculture in the national economy,
- main performance indicators,
- the development of gross fixed asset accumulation,
- the role of agriculture in foreign trade and its evolution

When examining the evolution of the contribution of the agriculture, forestry and fishing sectors to GDP, I came to the conclusion that there were only four years in the period between 2004-2021 when the contribution of agriculture to GDP exceeded its 2004 level. Given that the contribution to GDP is determined by the evolution of the values of gross output and current productive use, the reasons behind the decline in the role of agriculture in the national economy can be traced back to the evolution of gross output and current productive use. These indicators depend to a great extent on the changes in volumes (yields) and the prices used to quantify them, as well as on the evolution of the efficiency of expenditures.

When analyzing the development of the indicators describing the gross fixed asset accumulation of the agricultural sectors, I found that the role of agriculture increased compared to forestry and fishing. The development of specific indicators shows that agriculture's gross fixed capital formation per capita stood at 65.4% of the national economy's in 2004 to reach a level of 92% by 2021. However, this improvement could also have been caused by the decrease in the number of people employed in agriculture.

Agricultural produce and food industry products accounted for a growing share of Hungary's trade, which shows that the role of agriculture in the national economy has increased compared to 2004 in the case of both indicators.

I believe that, based on the above, **my hypothesis (H2) cannot be clearly proven, so I can neither confirm nor reject this hypothesis.**

(H3) as follows:

Knowledge of the economic effects of spatial economic aspects is necessary in order to realistically assess the position of agriculture as a branch of the national economy.

Among other things, I examine in chapter 6.2 of my dissertation

- the spatial economic aspects of the performance of agriculture
- the regional distribution of performance indicators, the positioning of individual regions
- the most important efficiency indicators
- the development of the macro-level income categories of agriculture and the role of current transfers

In the case of agriculture, for a realistic assessment of its position within the national economy, the economic effects of spatial economics aspects are extremely important. The output of agriculture is decisively influenced by the difference in agroecological potentials, which is closely related to spatiality.

In chapter 6.2, I analyzed the performance of the statistical (NUTS2) regions of Central Hungary, Central Transdanubia, Western Transdanubia, Southern Transdanubia, Northern Hungary, the Northern Great Plain, and the Southern Great Plain between 2005-2021. I examined, among other things:

- the regional distribution of the gross output of agriculture
- the order of the statistical regions based on gross output
- the distribution of gross output by industry and region
- the main data of the gross output of agriculture
- the contribution of the regions' agriculture to the region's GDP and their contribution to GDP in the period 2005-2021
- the regional distribution of the gross added value of agriculture
- the main indicators of GDP change during the examined period
- the position of regions based on their contribution to the gross added value of agriculture
- the regional distribution of agriculture's contribution to GDP
- the position of regions based on the values of the efficiency indicators

Based on the detailed analyses, it can be concluded that the Southern Great Plain and the Northern Great Plain stand out in terms of almost all indicators. The analyses presented in chapter 6.2 clearly prove the correctness of my hypothesis (H3). ***Based on the above, I consider my hypothesis (H3) to be confirmed.***

(H4) as follows:

EU funds have a positive effect on the income-generating capacity of agricultural companies and stabilize their property and financial situation in the Southern Great Plain region.

The investigations in subsection 6.3.4.2 of my dissertation were aimed at proving the correctness of my hypothesis **(H4)**.
My goal was to demonstrate significant differences between the performance indicators of companies that received or did not receive current support, as well as those that received or did not receive capital support. I included several indicators in the study. I performed the analysis on the companies using the IBM SPSS statistical analysis software.
I found that for the vast majority of the indicators I examined, the average value of the companies showed an improvement during the examined period. In order to find out whether this improvement is due to the fact of subsidies or not, I performed further analyses.
I found that in the case of several indicators that I examined, the positive difference between the companies receiving support and those not supported was significantly greater in 2021 than in 2014. I therefore found that the subsidies improved the situation of these enterprises compared to those that were not subsidized. ***Based on the above, I consider my hypothesis (H4) to be confirmed.***

(H5) as follows:

Current and capital transfers had no effect on labour force employment in the 2014-2021 period.

I proved the correctness of my hypothesis with the calculations and statistical tests performed in subsection 6.3.4.1. I first presented how the average statistical number of employees decreased in the years 2014-2021. I have also presented the changes grouped according to different criteria. I verified with statistical tests that neither the main activity of the given company, nor the location of its seat by county, nor the size of the company significantly affects the size of the change in staff.
After that, my investigations based on current and capital subsidies proved that neither current nor capital subsidies influenced the development of the number of employees.

I computed Spearman's correlation coefficient to reveal the correlation between the development of the number of employees and the size of the grants received. I found that the development of the number of employees showed a moderate positive correlation with the subsidies received in the given year, in the previous year and two years previously, but there was no correlation of these subsidies with the change in the number of employees. I also examined the influencing effect of the amount of subsidies received in total during the period between 2014-2021 on the change in employment between the beginning to the end of the period. I examined this relationship by regression analysis. During my investigation, I analysed both the period before and after COVID. There was no significant difference between the two periods. The explanatory power of the regression relationship was very small, only 10.2%. I found that the effect of capital grants was not significant, and although the effect of current grants had a significant effect, it was small and negative.

Based on the above, I consider my hypothesis (H5) to be confirmed.

In summary, based on the tests carried out, I formulated the following theses.

1. **thesis:** *The database of the annual company reports prepared according to the current system of accounting - when calculating certain financial indicators - is only suitable with minor modifications to ensure the coherence of the content of the micro-level and macro-level performance indicators, or the validity of the indicators.*
2. **thesis:** *Knowledge of the economic effects of spatial economic aspects is necessary in order to realistically assess the position of agriculture as a branch of the national economy.*
3. **thesis:** *Since Hungary's accession to the European Union, the direction of the changes in the income-generating capacity of the agricultural sector and the efficiency of production is not clear, neither a clear improvement nor a clear deterioration can be justified.*
4. **thesis:** *EU subsidies have a positive effect on the income-generating capacity of agricultural companies and stabilize their property and financial situation in the Southern Great Plain region.*
5. **thesis:** *Current and capital transfers had no effect on labour force employment in the 2014-2021 period.*

3. Research material and method

The analysis carried out in my dissertation was based on the examination of several databases. Within the framework of the Cooperation Agreement between Pannon University and AKI on June 23, 2015, the results of the research conducted on the basis of the database provided by AKI were published in 2018 (Szálteleki et al., 2018). During the analysis, I examined the system of accounting for state subsidies together with my co-authors. We sought an answer to the economic aspects of accounting for the current accounting regulations. The central issue of the entire analysis was therefore the accounting of current and capital transfers.

The analysis of the Southern Great Plain region was carried out in two different approaches:

On the one hand, I examined a database that I compiled (using SPSS software), from the database provided by OPTEN Informatikai Kft. and from the database published by the Hungarian State Treasury (containing detailed data on subsidies). On the other hand, I examined the economic and financial situation of individual companies, as well as the performance of the region by main activity categories. For this investigation, I created "Virtual companies" broken down by main activity.

I performed data reduction for company-level analysis. Only the data lines of companies that operated and regularly provided data throughout 2013-2021 were uploaded to the SPSS software. During the data cleaning and data reduction, the data file of the OPTEN database containing a total of 27,176 rows and 161 columns, and the data file of the grants containing 5,441,882 rows and 8 columns were combed together to find 1,378 companies, 9 years per company, so a database was created containing a total of 12,402 rows, and 67 columns per company (raw data), which I then supplemented with the calculated indicators presented in section 5.1 of my dissertation.

During my research, I analyzed the role played by agriculture in the national economy at the national level, relying on the AKI and KSH databases. To do this, I used EXCEL software to calculate the following: the contribution of agriculture to GDP, its change over time, and its distribution by sector. This was followed by an examination of the composition of the gross fixed asset accumulation, then an examination of the development of emissions corrected by volume and price indices, the development and distribution of specific indicators over time. I also analyzed the role played by agriculture in foreign trade, as well as its share of employment, the evolution of annual labour use, and the evolution of monthly gross incomes.

I presented the performance of agricultural companies in the Southern Great Plain region between 2013 and 2021, and its relationship to subsidies.

I used Excel and SPSS software for the analyses required to test the formulated hypotheses. The statistical procedures I used included descriptive statistics, Kolmogorov-Smirnov and Shapiro-Wilk tests, Mann-Whitney U-tests, Kruskal-Wallis tests, Spearman's correlation calculations, regression analysis.

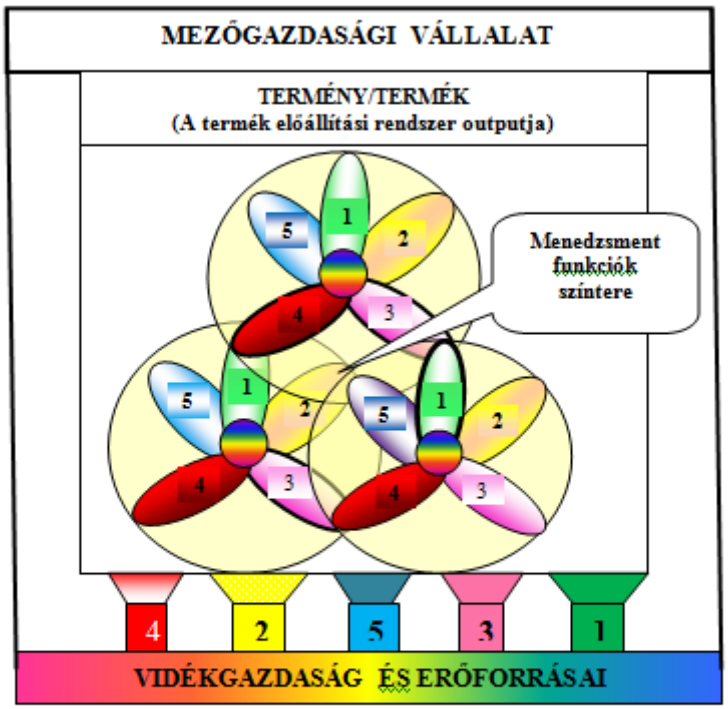
I summarized the results in tables and illustrated them with the help of figures. I detail the specific analysis methods, together with the results, in the relevant chapters.

4. Brief overview of individual chapters of the dissertation

In my dissertation, I primarily studied the theoretical background of the indicators used, the characterization of the factors influencing their formation and content. I examined the main characteristics of agricultural companies and their economic aspects. After that, I reviewed the literature that presented the main elements of the economic regulatory system of agriculture. Some of the findings in the chapter, as well as the tables and figures supporting them, are presented below.

Trustworthy information is essential for decision-makers at both corporate and policy levels. The information content of the indicators used for decisions is of fundamental importance for this. The applicability of the indicators calculated and formed using them is greatly influenced by their content, the degree of aggregation of the indicators formed, the quality of the database, etc. (Szálteleki - Pupos, 2018). In the algorithm for the formation of indicators, the peculiarities to which the indicators to be calculated apply cannot be ignored. Because of these specificities, I thought it important to discuss the specificities of agricultural production, basically relying on the following literature: Kapronczai (2007); Pupos (2017); Samuelson-Nordhaus(2008); Chikan (2020). Agriculture has a specific relationship with natural resources, therefore, besides the usual "what to produce – how to produce - to whom to produce" questions, this specific relationship generates a fourth question, " ***Where?"*** to produce the goods (Pupos - Nábrádi, 2022). Ultimately, agricultural systems are systems of "man-machine-soil-plant-animal" (Csáki, 1982: 18). These important characteristics also make the calculation of inputs and outputs complicated (*Figure 1*).

Figure 1: **The system model of the agricultural company in an integrated interpretation**



1	Biológiai tényező	4	Humán tényezők
2	Fizikai tényezők	5	Kémiai tényezők
3	Műszaki tényezők		Technológia(Kölcsönhatás)

Source: Own work based on Pupos (2017).

If we take the definition of production as a value-creating process as a basis, then the production process is nothing more than the circulation of current assets. In this cycle, Pupos (2011a) emphasizes the existence of the expected inequality Money < Money * (Money: starting money stock, Money* : money stock received at the end of the cycle). According to *Pupos (2011a), working capital and net working capital are not the same concepts, and as I explain in my dissertation, I myself agree with this opinion.*

In this chapter, I examined the financing data of individual CAP planning periods. The commitment amounts of the planning periods calculated at current prices are shown in *Table 1.* contains.

Table 1: **Financing of certain periods of the CAP**

No.	Designation	2000-2006		2007-2013		2014-2020		2021-2027	
		billion EUR	%	billion EUR	%	billion EUR	%	billion EUR	%
1	KAP pillar I	274.8	88.1	308.9	79.4	310.7	78.0	291.1	76.9
2	GET II. pillar	36.9	11.9	80.3	20.6	87.8	22.0	87.4	23.1
3	KAP total (1+2)	311.8	100.0	389.2	100.0	398.4	100.0	378.5	100.0
4	All EU commitments	650.7		887.6		1058.7		1210.9	
5	CAP/EU total (3/4) (%)	47.9		43.8		37.6		31.3	
6	EU total/GNI (%)	0.90		0.98		1.17		1.05*	

* Estimated. Source: Own work based on EC (2022) annual data

At the end of the chapter, I presented the economic effects of the settlement of subsidies through the example of a company selected from my database. This illustrates that in the case of some financial indicators, it is really necessary to carry out a correction in order to get a realistic picture of a given economic situation. In this case, for example, the deferred income (HUF 7,032) must be taken into account in the ROI indicator, as opposed to the current practice.

Table 2: **Evolution of a selected company's balance sheet (panel a) and other and extraordinary income (panel b), thousand HUF**

the. panel

Megnevezés	2015	2016
A. Befektetett eszközök	150 541	149 505
B. Forgóeszközök	53 804	48 124
C. Aktív időbeli elhatárolások	48	737
Eszközök összesen	**204 393**	**198 366**
D. Saját tőke	83 061	99 833
I. Jegyzett tőke	20 000	20 000
III. Tőketartalék	12 572	12 572
IV. Eredménytartalék	36 126	49 734
V. Lekötött tartalék	1 596	754
VII. Adózott eredmény	né	16 773
G. Mérleg szerinti eredmény	12 767	né
E. Céltartalékok		
F. Kötelezettségek	113 029	90 275
I. Hátrasorolt kötelezettségek		
II. Hosszú lejáratú kötelezettségek	34 466	37 583
III. Rövid lejáratú kötelezettségek	78 563	52 692
G. Passzív időbeli elhatárolások	8 303	8 258
1. Bevételek passzív időbeli elhatárolása		
2. Költségek, ráfordítások passzív időbeli elhatárolása	933	1 226
3. *Halasztott bevételek*	*7 370*	*7 032*
Források összesen	204 393	**198 366**

Forrás: a vállalkozás éves beszámolója alapján saját munka

b. panel

Megnevezés	2015	2016
Ert. bizt. bevétele	1955	98
Géplízing kapott árfolyam különbözet.	820	1133
Földalapú támogatás	18035	17482
Értékesített tárgyi eszköz árbevétele	2800	0
Gázolaj támogatás	2373	2385
Kapott árengedmény bevétele	0	1767
Kamattámogatás	549	309
Egyéb kapott bevétel	359	0
Géptámogatás költségarányos visszaírása	né.	338*
Kerekítési különbözet	2	6
Egyéb bevételek összesen	26893	23180
Rendkívüli bevétel	338*	né

Forrás: éves beszámoló alapján saját munka

* A fejlesztési célú támogatás halasztott bevételének költségarányos összege

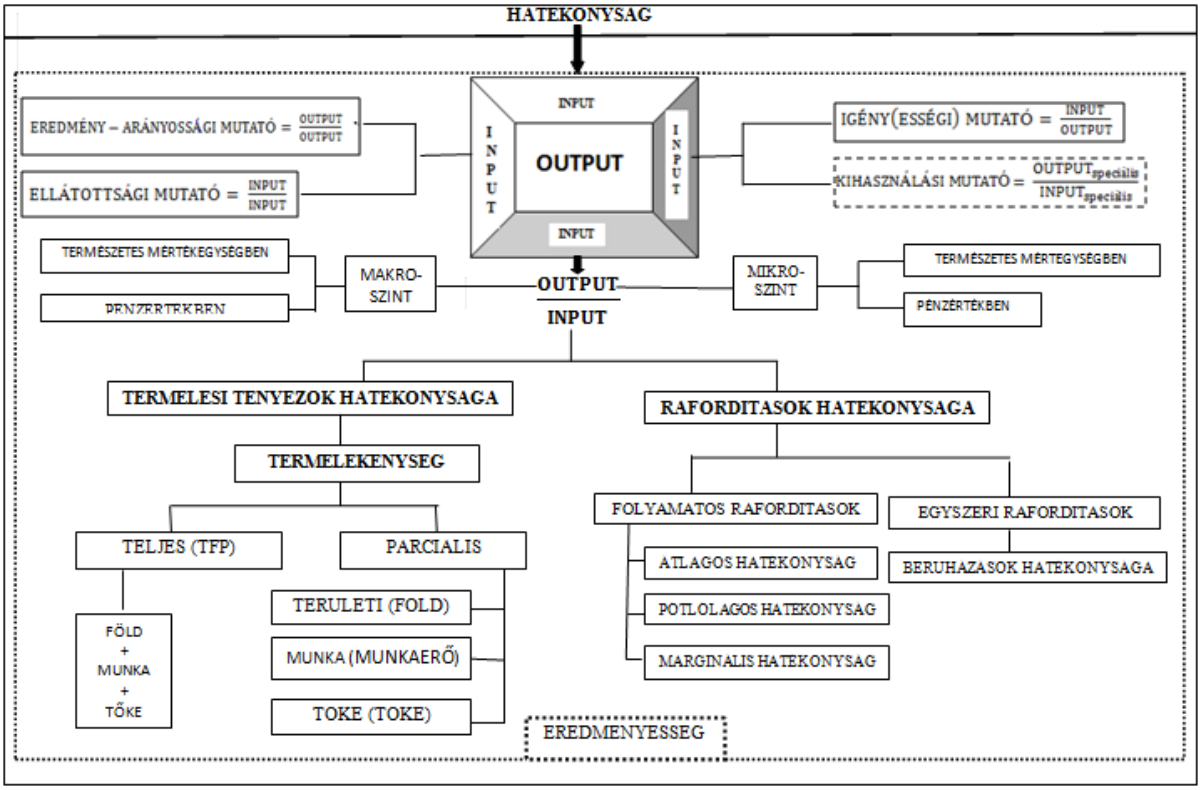
né.: nem értelmezhető

In the third chapter of my dissertation, I studied the indicators used by KAP. I examined the necessity of the data collection and its main steps in agriculture. Finally, in this section, I analyzed the macro-level and micro-level indicators and the content relationships between them. I analyzed which indicators can be used to get a realistic picture of the evolution of efficiency and productivity, both at the corporate, sectoral and national level. The main source works processed in my chapter are Hantos (2007), Lámfalusi (2007), Takácsné György K. – Takács (2016), Pupos (2017), Nagy - Nábrádi (2011:69), Szálteleki - Pupos, (2018); Szálteleki et al., (2018); Pupos et al. sub.; (2015), Nábrádi-Pető (2009:1-21), Bacsi (2013), Pupos et al., (2021). I found that in the case of an improvement in the efficiency indicators used in the economic analyses, it does matter indeed whether the improvement was caused by the factor use becoming more productive in the natural sense, or by price changes. The following indicators are the most suitable ones for measuring and characterizing efficiency :

- *Result-proportionality output/output indicator* : (e.g. ratio of the output of specialized sectors crop cultivation//livestock breeding.
- *Supply indicator: input / input* (e.g. size of committed capital/amount of labor force, size of land area/amount of labor force, arable land/total area).
- *Demand indicator: input/output (quantity of a factor of production/actual output)*
- *Utilization indicator: output(spec) / input(spec)* (e.g. output / given input).

Based on what is outlined in the chapter, the system of indicators is illustrated by *Figure 2*.

Figure 2: **The system of the main efficiency indicators**



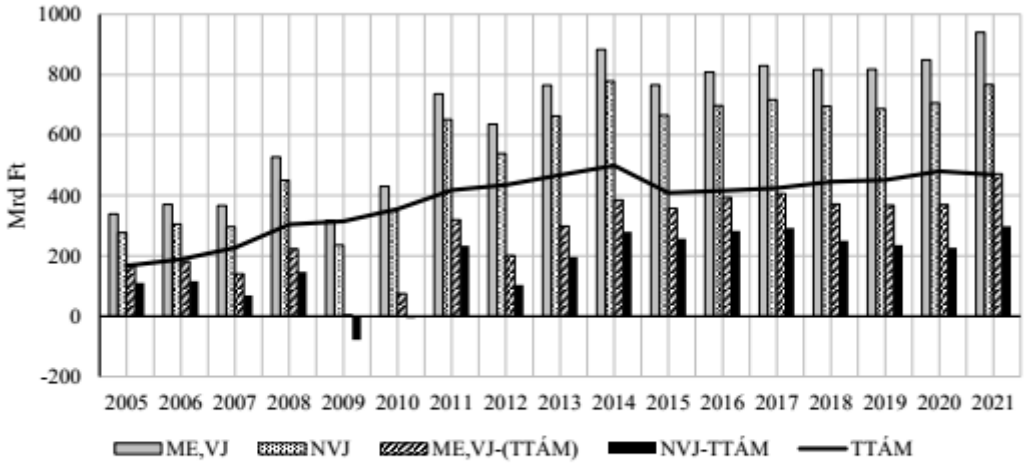
Source: Pupos et al. (2021:16)

In the fourth chapter of my dissertation, I examined the fulfillment of the objectives of the CAP and the main findings of the related analyses. I analyzed some of the strategic goals of the CAP, the impact assessments of its instrument system and the situation of the SME sector, as well as the situation of the regions and their ability to raise funds. I examined the impact of subsidies to

agricultural enterprises on productivity and profitability. The results presented in the chapter can be summarized below. The main literature processed during my research work was the following: Potori et al., (2013), Scown et al., (2020), Beckman et al., (2020), Khanna et al. (2022), Nguyen and Nguyen (2020), Bacsi et al. (2022), Bacsi and Szálteleki (2022a, 2022b), Dániel (2016a), Dániel, (2016b).

As can be seen in Figure 3 and Table 3, production subsidies show an increasing trend in the years after Hungary joining the EU, however, it can also be seen that the role of subsidies largely determines the evolution of the results. Without subsidies, the net entrepreneurial income (NVJ) would have been negative both in 2009 and 2010 (HUF -78.2 billion and HUF -5.8 billion, respectively).

Figure 3: **Evolution of the result categories calculated at the macro level and of other production subsidies in agriculture**



Forrás: KSH-1 alapján saját munka

ME,VJ: Működési eredmény, vegyes jövedelem;
NVJ: Nettó vállalkozói jövedelem;
TTÁM: Egyéb termelési támogatások

Table 3 **: Regional distribution of the years ending with a negative result in the period 2005-2021 in agriculture (result categories without current subsidies)**

Régió	2006		2007		2009		2010	2012	2015	2019	2020
	MEVJ	NVJ	MEVJ	NVJ	MEVJ	NVJ	NVJ	NVJ			
	millió Ft										
Közép-Magyarország	1783	**-2430**	**-5040**	**-9486**	**-11806**	**-17248**	**-554**	3019	22833	-6692	-21146
Közép-Dunántúl	19080	11403	6040	**-1573**	**-5290**	**-14541**	2836	11778	25590	10301	-9683
Nyugat-Dunántúl	**-760**	**-7612**	16205	7837	**-14365**	**-23668**	**-4468**	**-7130**	1884	23061	11410
Dél-Dunántúl	11994	2217	**-3882**	**-13831**	**-6359**	**-18582**	**-6685**	15764	**-5139**	12495	16655
Észak-Magyarország	13032	7845	14419	8490	2125	**-4324**	**-1387**	15264	23154	4468	14079
Észak-Alföld	70874	56699	54830	39663	28138	**10038**	**-4323**	38725	73738	104056	125465
Dél-Alföld	65949	48418	57440	38222	10766	**-9843**	8747	26469	114994	88057	90284
Összesen/Ország	181952	116539	140013	69323	3209	**-78168**	**-5838**	103888	257054	235747	227063

Forrás: KSH-3 és KSH-22 alapján saját munka

On the basis of literature research, I found that the effects of CAP subsidies do not clearly lead to the improvement of the performance, efficiency or profitability of enterprises, including SMEs, and that the source of higher incomes is often not the result of production and sales, but

the subsidies received themselves. That is why I considered it justified to analyze the utilization of subsidies at the company level in detail.

In the course of my own calculations, I compiled a database suitable for analysis from the economic data available on the agricultural cooperatives of the Southern Great Plain region in the OPTEN database, and on the other hand from the KAP subsidies database for the period 2014-2021 (Table 4).

Table 4: **Making the database of OPTEN Informatikai Kft. suitable for the analysis of the Southern Great Plain region**

Módosítás ismérve	Vállalatok száma			Adatsor az adatbázisban		
	Induló	Módosítás	Maradt	Induló	Módosítás	Maradt
Kiinduló OPTEN adatbázis	2238		-	27176		-
a 2012 és azt megelőző évek adatsora törlésre került		-3*	2235	27176	-10655	16521
negatív saját tőke 2013-2021	2235	53	2182	16521	477	16044
Összköltséges eredménykimutatást készít			2085			14946
Forgalmi költséges eredménykimutatást készít			165			1098
A vizsgált időszakban eredménykimutatás módszere változott	a vizsgált időszakban 68 cég esetében összköltséges és forgalmi költséges eredménykimutatás					
Régió szintű elemzés „Virtuális vállalatok**						
Főtevékenységi kör szerinti csoportok	2085	0	2085	16044	0	16044
1. növénytermesztés	997			7437		
2. állattenyésztés	471			3624		
3. kertészet	104			807		
4. szolgáltatás	429			2973		
5. erdőgazdálkodás	181			1203		
Vállalati szintű elemzés (SPSS)						
	2085	707	1378	16044	3642	12402

* Működő vállalkozásként van számontartva, de 2013-óta nem szolgáltat adatot

** Vannak olyan vállalatok, amelyek az időszak valamelyik évében az eredménykimutatás módszerét megváltoztatták

Table 5 illustrates the relationship between the increase in employment (change in the number of employees) and the disbursed subsidies.

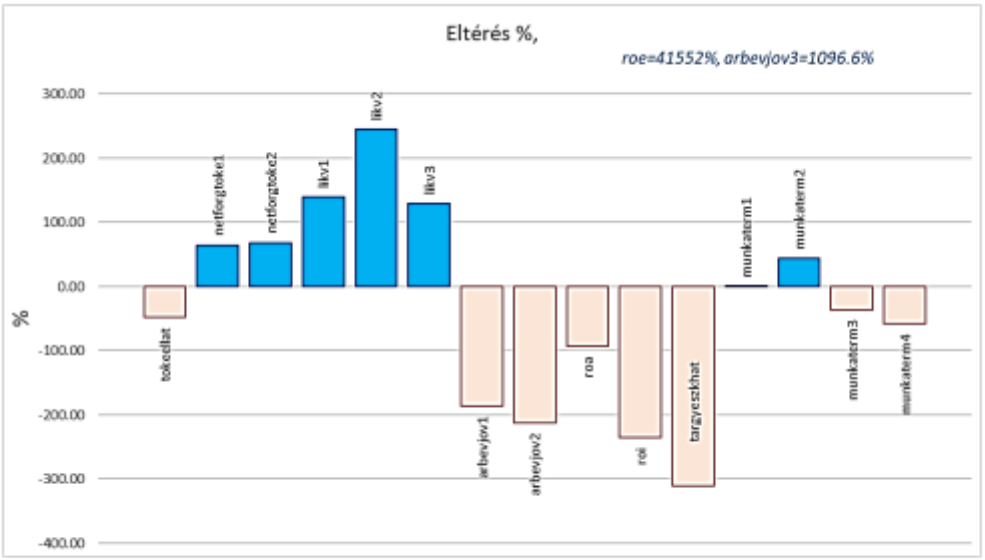
Table 5: **Correlation between employment growth and subsidies**

Spearman-féle korrelációs koefficiens	letszamvalt2014arany N=9152	letszvalt N=12402	Letszam N=11024
folyo	-,009	-,044**	,548**
toke	-,004	-,025**	,278**
tamosszes	,002	-,035**	,562**
folyoelozo	-,018	-,046**	,544**
tokeelozo	,001	-,021*	,287**
ossztamelozo	-,007	-,038**	,560**
folyoelo2ev	-,033**	-,051**	,462**
tokeelo2ev	-,014	-,034**	,263**
ossztamelo2ev	-,024*	-,044**	,475**
Letszam	,189**	,090**	1,000

**. significant at the 0.01 level (2-tailed). *. significant at the 0.05 level (2-tailed).

Figure 4 illustrates the effects of the subsidies received by the agricultural enterprises of the Southern Great Plain region on the income, property and financial situation of the enterprises.

Figure 4: **Differences in the average values of subsidized and non-subsidized enterprises, between 2021 and 2014 in % of the 2014 values**



Megj. A roe és arbevjov3 változók értékeit a diagram csak szövegesen tünteti fel, nagyságrendjük miatt.

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