

## AGRICULTURAL INVESTMENTS AND THEIR FINANCING DURING THE ECONOMIC CRISIS

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### **ABSTRACT**

*Special aid programs for the agrarian sector have been established to support EU candidate countries and to reduce the gap between them and older EU member states. In the meantime, investments are assisted by different EU Programs. Most of the investments span many business years and require countries to provide some of their own sources. During the economic crisis these investments were not stopped, since they had been implemented earlier. For fulfilling the "own sources" part of the investment, different types of supported credit can be used. The effects of the global economic crisis can be observed in figures for the 2009 business year in Hungary. Despite the crises, investments' net values increased, thanks to the Program named New Hungary Rural Development Programme. However, access to foreign sources was limited during the crises because of the straitened circumstances of the banking lending process. The rates were increased, making real own sources much more important. The results of the agricultural companies were far off those of previous periods as a result of lower market prices, changes in certain expenses, and the increased rates of foreign sources, but they were also affected by lower rates of production. The correlation of the following factors would be observed during the economic crises: the investments of the agrarian sectors, the source structures and the profitability, using the database of NAV and AKI.*

Keywords: agriculture, investment, finance

### **INTRODUCTION**

The natural opportunities of Hungary, such as the quality of the land and the climate favour for agriculture. Nearly two third of the total area is used for agriculture, half of them for harvesting grains. These excellent opportunities can be used to increase the productivity of the agriculture. It is essential to use the sources efficiently and to optimize the expenses to increase the profitability of the agriculture. One of the key elements is using the latest technologies which result better expense-profit rates and higher quantity of the labour. However, such investments can not be afford by the producers only by own sources. For significant investments there are more opportunities to be financed. The inner sources can be the profit and the calculated amortization while the outside sources can be the state and EU supports and different types of supported credit constrictions. The following analyze focuses on the relation between the different types of sources and the investments.

The current Global Economic Crises origins in the oversupply of the credits in the financial sector back in the August 2007 in the USA. Due to the Globalization and the

open financial markets the borders could not stop it and widened also to other part of the world and had an impact on other sectors. The crises reached Hungary in September 2008. From the beginning it was evident among the experts that the crises showed many similarities with the latest Economic Crises of the 1930's. The effect of the Crises can be measured imminently in Hungary due to its open market and dependence of the other countries. Banks reacted immediately to the changes with cuts of credit possibilities, changed credit conditions and increased interest rates. The credits in foreign currencies, especially in CHF and EUR based, became more and more expensive. Double effect of the devaluation of the Hungarian Forint and the increased interest rates increased the interest payments significantly within a couple of months.

The Economic Crisis also affected the agrarian sector. While the markets collapsed the supply and the market prices dropped. The Hungarian agrarian corporations can be supported by own force, support or credit. Until 2008 the amount of credits increased constantly and gave significant part of the financing of the sector. Due to the fact that the credit circumstances became severe the access to the new credits or prolong short term conditions got difficult. Furthermore the ongoing credits got more expensive due to the increase of the interest rates. The foreign currency based credits suffered significant exchange rate loss and has resulted in increasing interest payments. It was also observed in the agrarian sector.

## INVESTMENTS IN THE AGRICULTURE

The value of the investments of the agrarian sector can be available from several sources. The data collections of these sources differ so the comparison of them is limited.

While KSH uses the statistical reports APEH (from 2011 NAV) uses the information of the tax forms to cover the private farms and the corporate agrarian enterprises with its published data.

The data in *Table 1* shows the value of investments. It can be seen that the flow amount of the investments increased continuously and significantly during the observed period, out of which the investment of the machines represent nearly 50% in 2008 to 2009. Based on that it is possible that the investments in the machines effected mainly the agrarian sector.

**Table 1**

### **Value of the investments (agriculture and forestry, flow data, million HUF)**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009+</b>
New Buildings and constructions	59 031	29 888	45 700	67 548
New machines	23 324	55 672	72 281	86 659
KSH database	111 160	116 076	148 973	185 652

+ Forecast

Source: *Ministry of Rural Development, 2010a*

In the next step the main lines of the financials of the agriculture enterprises were observed using the APEH database. It is important to note that among the investments only those can be seen which were not yet activated in the given year. The already activated investments can be found among the fixed assets and increased its value.

The value of the increase of the investments can be calculated using the year-ends opening and closing balances of the fixed assets deducted the amortisation. The details of the calculation can be seen in *Table 2*.

The difference of the closing balances of the books and the calculated closing balances represent the value of the investment in that certain year.

**Table 2**

**Changes of the intangible and tangible assets, million HUF**

	2006	2007	2008	2009
Opening balances of the tangible and intangible assets	762 504	808 061	843 292	876 866
Amortisation	85 123	85 454	92 889	100 394
Calculated adjusted closing balance	677 381	722 607	750 403	776 472
Original closing balance	808 061	843 292	876 866	1 026 947
Invested value	130 680	120 685	126 463	250 475

Sources: Based on APEH database

Observing the data in details it can be noted that increasement of investments can be seen also in the data of the Financials with an extraordinary high peak in 2009. It shows that although 2009 effected by the financial global crises but this can not be seen in the agricultural investments. Still significant investments took place in 2009.

It is important to note that the KSH data are only prognosis while the APEH database represents the real amounts it can be observed from both sources that the negative effect of global crisis did not happen in the investments of the agrarian sector.

The next step it is worth to observe in details the source of the investments. Based on the literature it can happen from two sources: long term foreign or inner sources. The foreign sources can be long term credits or investment supports while the inner source can be the amortisation or the taxed profit.

Besides the foreign sources the importance of the amortisation would be observed in details. A calculation was made to show the % of the amortisation and the profit used for investments besides the credits. The summary of the calculation can be seen in *Table 3*.

In the calculation the value of the investments were used as starting point. It was deducted by the investment support, which was totally used for investments. The difference showed the amount which needed to be support from other kind of sources. In order to finance the investment long term credits can be used. For the observation only the increasement was used. Those years when increasement took

please it was calculated with zero (theoretically no investment credit was used in that year). The remaining part of the sources need to be financed by the companies from own sources, amortisation or profit.

**Table 3**

**Sources of the investments, billion HUF**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Value of the investment	130.7	120.7	126.5	250.5
Investment supports (KSH database)	111.2	116.1	149.0	185.7
Other sources	19.5	4.6	- 22.5	64.8
Increase of the credits	0.0	0.0	2.2	23.5
Investment financed from own sources	19.5	4.6	- 24.7	41.3
Amortisation	85.1	85.5	92.9	100.4
Used amortisation	- 65.6	-80.9	-117.6	- 59.1

The remaining value of the investment deducted amortisation clearly indicates whether any profit or profit reserve was used for financing (positive value) or this part of the amortisation was not used for new investments (negative value).

After the calculation was made the results showed that each of the observed year this value was negative. It means that not the whole part of the amortisation was used to finance the new investments. Consequently increasing amount of supports were used to finance investments and replacements. Each observed year the amount of the investment support, the increase of the credits and the value of amortisation overreached the value of the investments. Furthermore the taxed profit was used to cover ordinary expenses not for financing new investments.

As it was previously indicated the increasement of the investment was exceptionally high in 2009 although the credit conditions strengthened.

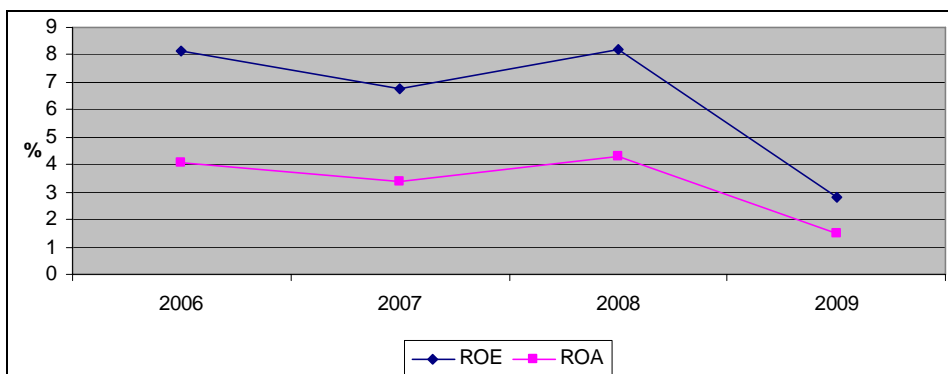
The investments took place to assist the efficiency and the profitability. The next observation focused on the changes of the return on investment and return on the assets in the last couple of years (*Figure 1*).

It can be noted that the profitability of the agrarian sector showed the same pattern as the change of the investment. It was changed in 2009 when besides the significant increase on the investments the profitability of the sector decreased in the same way. It was resulted by the drop of the trading profit effected by the deceasing incomes and activated own performances.

The increased amount of the investments resulted in increasement of the fixed assets and the total assets, including 2009 when the financial crises started. In this year the amount of the supports increased more than 50% (above HUF 200 billion) mainly resulted by the Programme named New Hungarian Rural Development Programme (Új Magyarország Vidékfejlesztési Program, ÚVMP). One of the priorities of ÚVMP is the renovation of the agricultural units, the agrarian environment, the technical support and the support of the young farmers.

Figure 1

ROA and ROE rates



ROA = Return on assets, *taxed profit/total assets*; ROE = Return on equity, *taxed profit/total equity*

Source: Based on APEH database

It also can be seen from *Table 4* that the value of the fixed assets increased during the observed period. (The data already shows the amount deducted by amortisation).

Table 4

Value of the fix assets and its changes compared to previous year  
(million HUF)

	2006	2007	2008	2009
Value of Intangible assets	9 439	9 912	10 793	12 295
<i>Changes, %</i>	<i>97.57</i>	<i>105.01</i>	<i>108.89</i>	<i>113.91</i>
Value of Tangible assets	798 622	833 380	866 072	1 014 651
<i>Changes,%</i>	<i>106.08</i>	<i>104.35</i>	<i>103.92</i>	<i>117.16</i>
Within investments (net value)	59 944	47 621	71 886	90 079
<i>Changes, %</i>	<i>97.20</i>	<i>79.44</i>	<i>150.95</i>	<i>125.31</i>
Value of Financial investments	61 870	65 183	70 725	68 673
<i>Changes, %</i>	<i>111.33</i>	<i>105.35</i>	<i>108.50</i>	<i>97.10</i>
Value of Fixes assets	869 931	908 475	947 591	1 095 620
<i>Changes, %</i>	<i>106.34</i>	<i>104.43</i>	<i>104.31</i>	<i>115.62</i>
Value of Amortisation	85 123	85 454	92 889	100 394
<i>Changes, %</i>	<i>107.03</i>	<i>100.39</i>	<i>108.7</i>	<i>108.08</i>
Value of Total assets	1 645 861	1 747 251	1 795 304	1 951 404
<i>Changes, %</i>	<i>103.80</i>	<i>106.16</i>	<i>102.75</i>	<i>108.69</i>

Source: Based on APEH database

The increase reflects that the investment directed not only to replacement but further development. The increasing amount of the amortisation also reflects to more investments. It also can be observed that the increasing investment did not realise as profit.

The increasement of the importance of the fixed assets within the total assets can be seen in the following ratio (*Table 5*).

**Table 5**

**Fixed assets ratio**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Fixed assets ratio	51.59	52.86	51.99	52.78	56.15

Consequently it can be stated that the increasement of the fixed assets was higher than the increasement of the total assets. In case of a productive types of enterprises the higher fixed assets ratio is acceptable compared to other types of enterprises.

*Table 6* shows the equity structure of the agrarian enterprises based on APEH database.

**Table 6**

**Sources, million HUF**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Own equity	820 992	878 133	938 629	1 053 362
Capital reserve	191 147	196 046	192 535	221 244
Balance sheet profit	55 560	49 807	65 133	22 775
Long term liabilities	256 223	235 970	238 166	261 631
Short term liabilities	502 435	570 647	554 200	568 999
Total assets	1 645 861	1 747 251	1 795 304	1 951 404

Source: Based on APEH database

The continuous increasement of the equity mainly resulted by the increasing of the balance sheet profit while the capital reserve had smaller role, except 2009. This year the balance sheet profit dropped to one third while the increase of the capital reserve was significant. The smaller balance sheet profit resulted by the unfavourable trading profit while the capital reserve increased by the investment supports. The reasons would be observed later in details. Out of the total liabilities two third is short term liability in which one third is supplier.

After observed the assets and the liabilities separately the connection would be in spotlight. Rates were used to realise the financing % of the equity, which includes the investment supports.

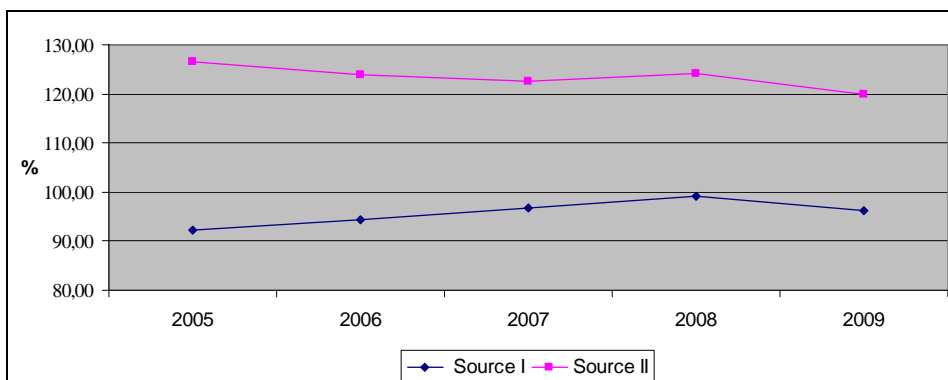
The rate of the equity and the fixed assets to the total assets was firstly calculated. It can be noted that the own equity is not enough to finance the fixed assets due to the increasing rates in each year.

The financing strategy of the agriculture sector would be observed by using financing rates. The Source I rate reflects of the % of the fixed assets financed by own sources (Equity / Fixed assets). With the assistance of Source II rate ((equity + long credits) / fixed assets) the Financing strategy can be checked (it can be aggressive, moderate or conservative). It can be noted that the calculation would not be punctual because one part of the inventories also financed from long term sources.

If the financing rate is over 100% it means that one part of the long term sources are used for financing current assets (it is a conservative strategy). Below 100% the long term sources would not cover all the long term investments so other sources need to be used for financing (this is an aggressive financing strategy). Figure 2 shows the calculated rates, and Figure 3 shows the equity and fix assets ratio.

**Figure 2**

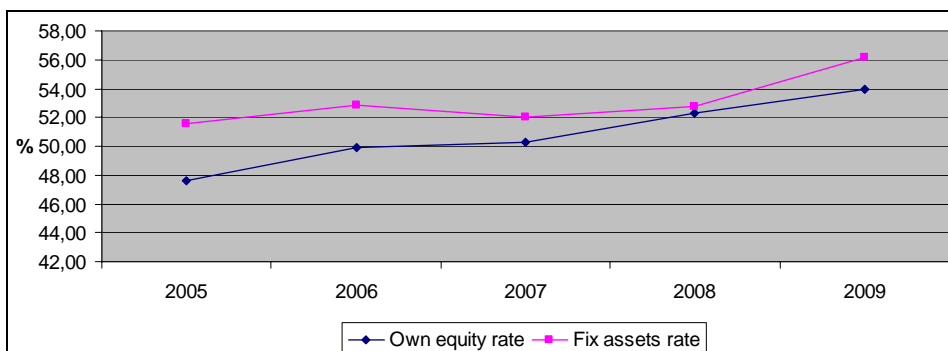
**Source rates**



Source: Based on APEH database

**Figure 3**

**Equity and fix assets ratio**



Source: Based on APEH database

It can be noted that own source was not enough to finance the fixed assets. However, the percentage of the long term liabilities for financing (above 120%) shows that the agrarian enterprises using conservative financing strategy. It means that one part of the current assets was financed by long term sources. The next step the different types of profits were analysed deeply, based on the database of APEH in *Table 7*.

**Table 7**

<b>Profits of the agrarian sector, million HUF</b>				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Trading profit	78 577	81 190	115 161	65 486
Other incomes	209 801	210 832	231 740	247 337
Financial profit	- 25 912	- 24 442	- 33 910	- 33 945
Ordinary profit	52 665	56 748	81 251	31 541
Extraordinary profit	21 867	11 467	4 327	4 401
Profit before tax	74 521	68 223	85 469	35 901
Profit after tax	66 776	59 560	76 807	29 547
Balance sheet profit	55 560	49 807	65 133	22 775

Source: *APEH database*

As for the trading profit 2008 was a special year because the increasement of the profit with 40% compared to previous year. It was resulted by the increasing incomes and other revenues with 8% overpassing the increase of the expenses (6%). Add to the fact that the horticulture production in this year was exceptionally good. In contrary the Trading profit of 2009 was the worst year for a while. The expenses were decreased with 3.5% while the incomes dropped with 5%. However, the other revenues including the flow supports increased.

The financial profit showed negative value in the observed years as for the interest of the foreign sources can be found here (while the interest support can be booked in the line of other incomes). Moreover, the enterprises do not have such an interest or dividend income which balanced this negative effect (it is mainly the same for other sectors using HUF currencies - exempted the foreign exchange effect).

The effect of the financial crises can be observed also in 2008 as for the amount of the interests and the foreign exchange risks increased. In 2009 the financial expenses did not increased significantly.

Each year the balance sheet profit was positive in the observed period but a significant decrease can be seen in 2009 due to the unfavorable changes of the trading profit in that year. The difference between the balance sheet profit and profit after tax reflects on dividend payments. The percentage of it in the previous years was between 14 to 16% (around billion HUF 7-10). But in spite of the smaller profit result in 2009 the amount of the dividend was billion HUF 6.7, which was 20% of the profit before tax. It means that the rate of the paid dividend increased in 2009 because the owners would like to secure the profits.



## **CONCLUSIONS**

Consequently it can be seen that the paid supports had significant influence on the investments. In the last couple of years more billions of HUF flow and investment supports were paid yearly, which resulted continuous increasement on the amount of the assets and positive profit. Even the most difficult year of the crises the sector closed in green resulted by clearly to the supports.

It is enough to finance the performed investment from investment supports, long term investment credits and one part of the calculated amortisation. There was no need to use profit or profit reserve to finance investments even in the deepening financial crises (although in this year significant investment supports arrived to the sector). In 2009 the investments increased significantly but the crises finally resulted decreasing profitability.

## **REFERENCES**

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