Analyse the Financing Structure of Agricultural Enterprises in 2002–2006

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Abstract: The capital structure of agricultural enterprises notable modified since the change in Hungary's economic system. The study discusses the capital structure of agricultural enterprises in Hungary and analyses the most significant indicators, that we can use to describe the financing situation of the firms. My empirical analysis is based on data containing 192 agricultural enterprises between 2002 and 2006. I try to assess the reasons of the changes in the structure of resources of enterprises in order to find the determinants effecting the capital structure. Furthermore, I assess the index numbers illustrating the management of the enterprises.

Key words: capital structure, Hungary, agricultural enterprises, profitability

1. Introduction

The capital structure is the mixture of sources of funds a firm uses, that can be viewed as the permanent financing the enterprise represented primarily by long-term debt, preferred stock, and common equity but excluding all short term credit.

Defining the optimal capital structure is an important decision for any organization. This decision is critical not only because of the need to maximize returns, but also because of the impact such a decision has on an organization's ability to deal with its competitive environment. There are many theories for this theme, but all the same, researchers have not found the optimal capital structure. (*Baker and Wurgler,* 2002)

In Hungary the capital structure of agricultural enterprises changed significantly since 1990, but their decisions about the capital can't fit with neither theoretical appeal totally. The change in Hungary's economic system was in 1989/90, and from this time the capital structure of agricultural enterprises notable modified. These changes affected the ownership and possession conditions and the agrofinancing system. The agricultural enterprises suffered from lack of capital and the level of their capital accumulation was low. These increased the need for external financial resources.

The changes in financial situation concerned the parameters illustrating the management of the enterprises, influenced the competitiveness, profitability, effectiveness, etc. Therefore my goal is to examine the capital structure of agricultural enterprises in Hungary between 2002–2006, and to draw conclusions about the agricultural financing.

2. Material and methods

During my research I elaborate the main national and international literature connecting with well-known economic theories. The formation of capital status and structure of agricultural enterprises is evaluated between 2002 and 2006. 192 examined economic organisations provided the data for the survey. Data concerning the agro-industry is based on the publications of the Agro-Industrial Research Institute (AKI). By using the database provided by the Tax and Financial Auditing Office I examine the changes of capital structure in the agricultural sector, and their effects on the enterprises' financial situation.

By primary data survey I present the capital structure of Hungary's agricultural enterprises, their main parameters that characterized the economy. I deal with only joint enterprises operating in the sector. During the research I determine with time-series the values of balance sheet and earnings reports for every company and the averages, then I calculate the most important financial ratios in order to draw conclusions about the capital structure.

3. Results and dicsussions

3.1 Literature review

Defining the optimal capital structure have for a long time been a focus of attention in many academic and financial institutions that probe into this area. One of the most significant issues in corporate finance is responding "How do firms choose their capital structure?". This is comprehensible as there is a lot of money to be made advising firms on how to improve their capital structure.

The mix of the different securities is known as its capital structure, so it can be defined as the combination of debt and equity used to finance a firm. There are many methods for the firm to raise its required funds, the most basic instruments are stocks or bonds. The target capital structure is the ideal mix of debt, preferred stock and common equity with which the firm plans to finance its investments. (*Pataki,* 2003)

Every enterprises has liabilities that must be dealt with, regardless of the enterprise's incomes or revenue. These liabilities raise the fluctuation of revenue, the instability of revenues. The risk-raising effect of constant liabilities is called leverage. Two types of leverage can be distinguished, the leverage effect of constant expenses related to using assets is called working leverage or operating leverage (DOL). The risk-raising effect of constant expenses related to liabilities is called financial leverage (DFL). Using both types of leverage by an enterprise is called combined leverage (DCL). Firms tend to avoid the very high gearing levels, because of the financing distress risk. This could be induced by the requirement to pay interest regardless of the cash flow of the business. (*Harris and Raviv,* 1991)

There are many theories of optimal capital structure. The first breakthrough came with Modigliani and Miller's theorem, which specifies conditions under which various corporate financing decisions are irrelevant. MM Proposition I. concerns about the irrelevancy of the value to capital structure.

MM Proposition II. implies that, the higher the debt-equity ratio, the higher the expected turn on equity. (*Modigliani-Miller,* 1958)

Later Modigliani and Miller showed that when corporate taxes are included, the value of the levered firm is equal to the value of an unlevered firm plus the present value of the tax shields associated by debt. This third step in capital structure theory was first suggested by Baxter and later modified by others. In this way, bankcruptcy costs are introduced. Now the value of the firm in bankruptcy is reduced by the fact that payments must be made to third parties other than bond- or shareholders.

The next step in capital structure theory was the introduction of personal taxes in 1977. Miller showed that, a "nothing matters" situation arises when you combine corporate and personal taxes. Most recently, the assumption of comple contracts is relaxed. Instead, contracts are assumed to be oncomplete, i.e. they don't specify precise provisions for every conceivable future event. And apart from the theoretical literature hundreds of papers try to empirically test all the different capital structure theories.

3.2 Analysing the capital structure by hungarian agricultural enterprises

In Hungary the capital structure of agricultural enterprises changed significantly since 1990. For 19 years since the change in Hungary's economic system, the capital structure of agricultural enterprises notable modified. *(1.table)* The self-financing ability of these firms became worse and worse, which enhanced the enterprises's need for foreign capital, and it stressed the long-term liabilities.

The reason of this modification was the new effect of credit construction to substitute for capital. The next change was the joining the European Union, which brought fundamental changes regarding agricultural subsidies meaning from 2004 subsidies are granted according to the prosterior financing policy. This has resulted liquidity problems in many cases.

Table 1. Accorded credit to the non-financing enterprises in Hungary

Milliard HUF

Year	Total loans outstanding in Hungary	Total bank credit in Hungary	Agriculture, forestry, fishery
1995	1062,9	938,2	69,0
1996	1260,0	1193,8	96,8
1997	1773,2	1706,1	151,9
1998	2073,6	1969,1	192,1
1999	2443,4	2306,3	211,1
2000	3183,2	3027,6	237,2
2001	3486,6	3389,8	226,0
2002	3693,3	3571,8	239,7
2003	4415,7	4278,2	269,2
2004	5004,0	4829,4	329,8
2005	5704,2	5499,9	358,8
2006	6494,2	6255,0	328,7
2007	7283,1	7002,4	338,8
2008	8076,8	7747,0	330,2

Source: Private construction made by National Bank of Hungary [4]

2. table: Distribution of the amount of credit by the agro-industry

Milliard HUF

Year	Short term credit			Long term credit	
	Credit in HUF	*Credit in foreign currency*	*Charge account in HUF*	*Credit in HUF*	*Credit in foreign currency*
2002	84,7	5,1	39,4	106,8	3,7
2003	58,3	15,1	12,7	177,9	5,2
2004	43,9	24,4	12,4	238,1	11,0
2005	63,5	36,1	13,1	227,1	19,0
2006	69,9	23,0	16,3	194,3	25,2

Source: Private construction made by National Bank of Hungary [4]

The change in the structure of liabilities can only be possible by distributing subsidied medium and long-term liabilities. (2. table) Inside the short term liabilities the role of „compulsory creditors" (state, suppliers) is still significant. (*Pataki,* 2003)

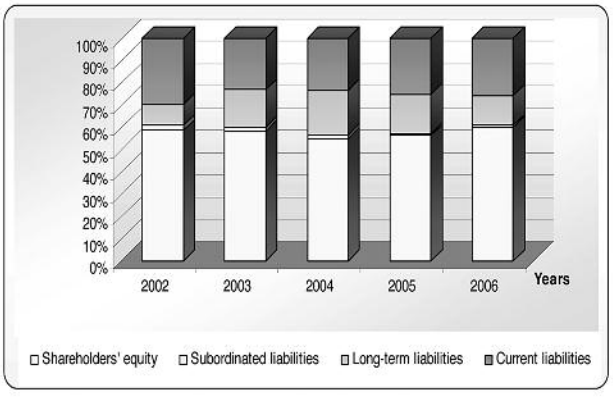

Figure 1. Distribution of the total sources by the examined agricultural enterprises

Source: Agricultural Economics Research Institute, 2007

In my research the examined enterprises switched to the use of a conservative financing strategy, which raise the expenses of financing. The own capital of the examined enterprises compared to total capital from 2002 – except of year 2003/2004 – increased, therefore the sector's need for external sources decreased. The distribution of own and debt-capital was all year above 50 percent (*Figure 1*.).

Figure 2. illustrate the distribution of own capital by the examined enterprises. In the period of 2002–2006 the mean value of the shareholder's eguity compared to the year 2002 increased by 30 percent, reach 263 mrd HUF. It can be seen from the figure that in the own capital the subscribed capital, the capital reserve and the accumulated profit reserve play the main role with a whole rate of 80 percent.

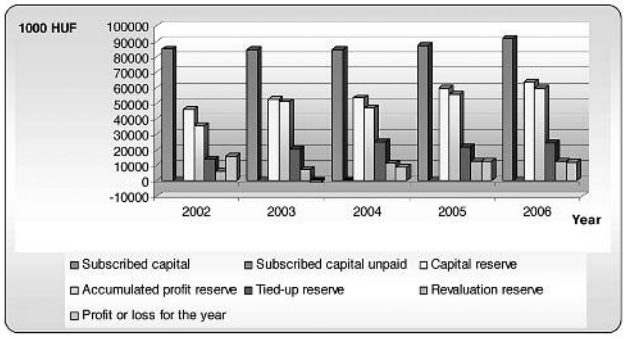

Figure 2. Distribution of own capital by the examined agricultural enterprises
Source: Agricultural Economics Research Institute, 2007

The proportion of long-term credits within the total credit from 2003 is nearly 40 percent. I concluded that in the case of enterprises with a more diverse production structure the ratio of foreign capital was higher than the average and within it the ratio of long term liabilities also became higher, expect of the year of 2006 (*Figure 3*.).

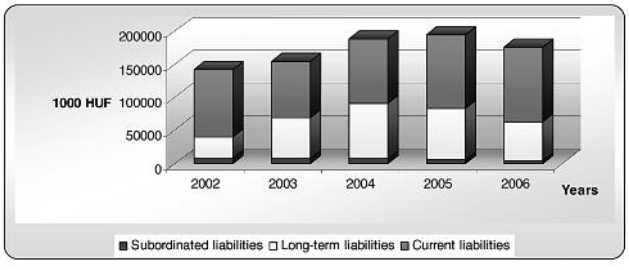

Figure 3. Distribution of liabilities by the examined agricultural enterprises
Source: Agricultural Economics Research Institute, 2007

The favourable change in the structure of short and long term debts went on well. Significant change was in 2003, when the value of long term debts per one hectare has increased by more than 40 percent. In the case of small size farms vine, fruit and vegetable growing as well as poultry farming is the most common.

In this the followings have played a major role:

- Need for debt resheduling and debt compounding in 2002 due to EU expetations.
- The amount of credits from banks for the compensation of losses and credits from holders has expanded by 18% percent reaching an average 21,900 HUF per hectare.
- Due to the drought farms were allowed to take out middle term credits with preferential interest conditions raising the level of long term liablities by about 51 percent to 61,000 HUF per hectare.

These changes in the structure of liabilities have modified the two-third one-third of short and long term liabilities of former years almost to half-half. The amount of the short term liabilities increased by 10 percent in the 5 years, in which the accounts payable play the main role *(Figure 4.)*. The accounts payable increased by 50 percent from the year 2002, represent 18–20 percent from the total liabilities.

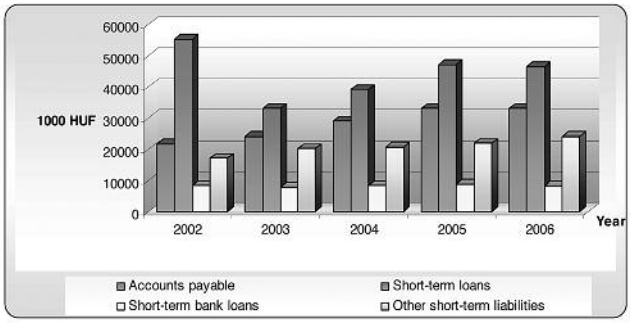

Figure 4. Distribution of short term credit by the examined agricultural enterprises
Source: Agricultural Economics Research Institute, 2007

3.3. The profitability of the examined agriculture enterprises

The proceeds of assets used in agriculture continously lag behind the expenses of foreign capital. So, the profitability of private, is low and lags behind the profitability of the total capital. The role of amortisation became greater within cash flow and the reason for this is the decline of profit. As a reasult of the insufficient profit the level of investment activity primarily depends on state subsidies.

The results can be examined in connection with the equity, but I state that the dispersion of individual results is very significant also in economic organisations. The ratio of profitable and unprofitable farms differ according to legal form of the business: the ratio of profitable farms is the highest among the joint stock companies while the ratio of unprofitable farms is among deposit companies. In the observed period the profitability of the examined enterprises in Hungary was the lowest in 2003. The difference between the profit ratios can be observed by the sector-specific enterprises.

Due to the unfavourable weather and some other negative market tendencies (downside of the pig cycle the market prices have decreased etc.) farms have suffered a loss in 2003. In this time the profitability of total capital was 2,96 percent and the profitability of own capital was 0,14 percent. I illustrate this by the Graph 5.

The consequent of the bad weather in 2003 reflected in the income of the enterprises. In this time the firms suffer losses, amount of – 904 000 HUF *(Figure 6.)*.

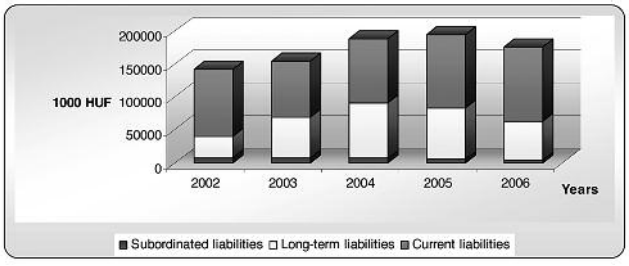

Figure 5. The profitability of total and own capital between 2002–2006
Source: Own calculatons by the database of AKI

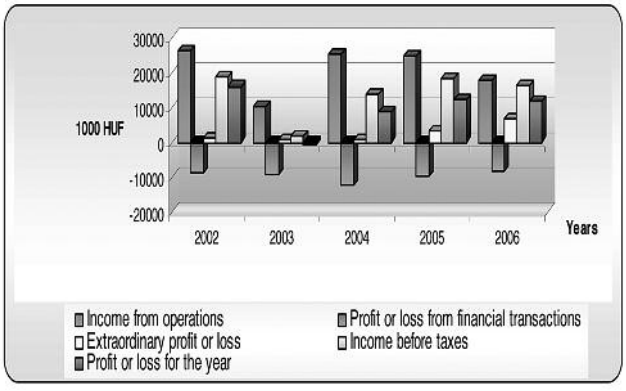

Figure 6. Income of the examined enterprises between 2002–2006
Source: Own calculatons by the database of AKI

4. Conclusions

Considering the theme of optimal capital structure is aktually. The decisions of it is critical not only because of the need to maximize returns, but also because of the impact such a decision has on an organization's ability to deal with its competitive environment. There are many theories for this theme, but researchers have not found yet the optimal capital structure.

In this survey I aimed to analyse the capital structure of the agricultural enterprises in Hungary between 2002-2006. I can state that the change of the capital structure of agricultural enterprises infuenced by the fact of change in Hungary's economic system. The rate of foreign capital reached the 46 percent to 2004. The amount of foreign capital was increased, due to the investment activity. The indexes of profitability show the lowest value in 2003, for example the profitability of own capital was 0,14 percent. Above all I have to draw attention to the fact that bigger farm size and better supply of assets in general goes hand in hand with better results. On top of this it is likely that farmers' management skills make a difference when it comes to the effeciency and productivity of farming.

References

Allen, F. and D. Gale. *Arbitrage, Short Sales, and Financial Innovation. 1991. Econometrica* 59, 1041–1068.

APEH database 1990–2006

Baker, M. and Wurgler, J. *Market Timing and Capital Structure. 2002. Journal of Financial Economics LVII.*

Database of National Bank of Hungary 1990–2006

Harris, M and A.Raviv. *The theory of Capital Structure, 1991. Journal of Finance* 46., 297–355

Pataki, L. *An examination of capital structure of corporate agricultural enterprises in Heves county. 2003. Studies In Agricultural Economics.* 99–112.p.