

# FINANCING ASPECTS OF THE HUNGARIAN GENERAL MANUFACTURERS IN 2010-2012

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**Abstract:** Observing and analysing the capital structure of corporations is one of the most important economic issue, it affects several fields of the life. The aim of the present study is to analyse the connection between capital structure and profitability in order to reveal such a ratio for the capital leverage and liabilities, by which it can say, to that connect the profit or loss. I searched the volume of influence of chosen indices of capital structure on financial and profit situation of corporations, in addition I studied which variant of those that take a part in development of capital structure, should be in functional relation with profitability indices. I used cutpoint analyses to determine the quantile point between the profitable or the non profitable operating. In my analysis I am seeking the answer for the question: whether the relation between the capital structure and the profitability can be proven, and if yes, then can we determine its direction and intensity.

**Keywords:** manufacturers, capital structure, liability, profitability, financing

**JEL classification:** M40

## 1. Introduction

Capital structure refers to the way a corporation finances its assets through some combination of equity, debt, or hybrid securities. A firm's capital structure is then the composition or 'structure' of its liabilities. So capital structure is a mix of a company's long-term debt, specific short-term debt, common equity and preferred equity. It shows how a firm finances its overall operations and growth by using different sources of funds (Shapiro, 1989).

Debt comes in the form of bond issues or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure.

Defining the optimal capital structure have for a long time been a focus of attention in many financial institutions that probe into this area. This is comprehensible as there is a lot of money to be made advising firms on how to improve their capital structure. The concept is extremely important because it can influence not only the return a company earns for its shareholders, but whether or not a firm survives in a recession or depression.

Lot of theories exist to describe the 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, bankruptcy 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. This theory states that there is an advantage to financing with debt (namely, the tax benefits of debt) and that there is a cost of financing with debt (the bankruptcy costs and the financial distress costs of debt). 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.

The "Pecking Order" theory captures the costs of asymmetric information. It declares that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort (Treyner, 1981). The pecking order theory is popularized by Myers (1984) when he argues that equity is a less preferred means to raise capital because when managers (who are assumed to know better about true condition of the firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation. As a result, investors will place a lower value on the new equity issuance. (Myers, 1984)

Most recently, the assumption of complete contracts is relaxed. Instead, contracts are assumed to be incomplete, 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.

## **2. Methodology**

In my study calculations in connection with the analysis of fund- and capital structure of 50 general manufacturers are based on their balance sheets, appeared OPTEN database, period 2010-2012.

Balance data and internal proportions - partition coefficients - furthermore indices calculated based on these shall help to estimate occurring changes in the composition of assets and funds. Taking advantage of common methods of statistic analysis I defined the most important index numbers (such as leverage, capital strength and capital supply) regarded to the consideration of capital structure, their rates annually and by corporations, then I evaluated main tendencies in management of the sector by processing average rates calculated from these.

I searched the volume of influence of chosen indices of capital structure on financial and profit situation of corporations with regression calculating, in addition I studied which variant of those that take a part in development of capital structure, should be in functional relation with profitability indices (Van Horne, 1987).

I used regression analysis for an empiric proof of capital structure theories and cutpoint analyses to study the credit distributing phenomenon by Stiglitz since in the subject of the database I searched the significance of wontedness and slant that marked damage of normality at many factors, furthermore in many cases even the terms of a dispersion homogeneity were not certain. Because of repeated damages of the two modelled T-test, a specified comparison of distribution seemed to be expedient within the confines of a cutpoint analyses which I performed with the assistance of the ROPstat 1.0 statistic pack of programs.

### 3. Results and discussions

#### 3.1 Profitability connection with capital structure

In my analysis I looked into the factors defining capital structure, the existence of connection between index numbers describing it and the strength of this connection as well as how an existing connection could be described and expressed. I meant to test the correctness of the following pieces of hypothetical:

*Capital structure are in connection with the main parameters describing financial and income situation of corporations, if so, combination of chosen balance items (variants) could serve an explanation for the fluctuation of profitability indices.*

Thus I performed regression analysis of studied database on the base of two starting point. In one case I was trying to find the answer for what influence the capital structure indices, which may describe fund structure the best and are chosen by me, take on the financial and profitability situation of the corporation; whilst due to the second calculation I was looking for the answer for which of the variants filling a part in development of capital structure is in functional connection with the fluctuation of profitability indices.

The results of relation analysis for instance the connection between the profit in proportion with assets items are described in table 1. It shows that profit in proportion with assets is in strong, negative connection with the proportion of credits lodged from owners in total capital; a change of 100 percent degree of that proportion would lower the rate of profit index by 24 percent degrees. Similar to credits lodged from owners, the studied index is also in a negative way of correspondence with proportions of long and short-term liabilities, however in the case of the latter the correspondence is not significant. Index number of fitting to the regression equation (R-square) is 0,39 that is to say the calculated model explains 39 percent of variance.

**Table 1: Regression Analysis of Return on Assets**

ROA	Coef	Std.Err	t	P> t	95% Conf.Int.	
Accummulated profit reserve	0,042473	0,01217	3,12	0,000	0,04253	0,09111
Loan from owners	-0,23814	0,03088	-5,66	0,000	-0,3537	-0,1919
Long term liabilities	-0,01645	0,03473	-2,63	0,106	-0,1249	0,01206
Short term liabilities	-0,20987	0,02597	-3,23	0,000	-0,1611	-0,0586
Const.	0,063636	0,01045	6,09	0,000	0,04301	0,08425

Source: Own calculation based on balance sheet of the examined corporations

### 3.2. Cut-point analysis for the optimal capital structure

In the followings I am looking for the answer whether in the studied 3 years should be a kind of capital structure considered to be general, due to which it could be stated that it couples to management producing profit or deficit instead. I plan to test the correctness of the following hypothetical:

*According to general manufacturers researched a sort of proportion is detectable between foreign capital and equity as well as at credit files, to which its profiting connects.*

The conventional statistic methods were not adequate to confirm this, since according to several variants drawn in the analysis, tests of both normality analysis and scatter homogeneity marked damages of adapted conditions; this is why I searched my idea through cutpoint analysis. I defined a proportion between foreign capital and equity which could be regarded as this: that proportion or a rate over it goes together with deficit in operation. I found that only 36 percent of corporations producing deficit and at the same time only 14 percent of those producing profit have leverage index over the rate 1,35. It also could be appreciated remarkable that almost 100 percent of corporations producing profit bear index numbers under 2,5 however, one out of five of those producing deficit have higher rates than this (table 2.)

I performed the same statistic process in the consideration of the liabilities' proportion within fund construction and on this I found that more than 62 percent of studied corporations producing profit operate credit proportion under 40 percent however, almost 71 percent of those producing deficit have rate proportion barely over this. Due to my results break-out possibilities for corporations already producing deficit are tightly limited, banks found granting credit to them is risky; moreover they have slight opportunity for development and by this flare and profiting operation by self strength.

**Table 2: Specified Comparison on Distribution of Leverage**

c	F1(c)	F2(c)	F1-F2	Korrekt%	Phi	Coef.	p	Adj. p
-								
49,12	0,011	0,000	0,011	50,7	0,10	0,00	0,2990	
-								
11,39	0,030	0,000	0,030	51,2	0,14	0,00	0,1206	
-3,43	0,045	0,000	0,045	52,3	0,17	0,00	0,0413	
0,25	0,313	0,368	-0,055	52,7	-0,05	1,28	0,4496	1,0000
1,35	0,612	0,860	-0,268	63,4	-0,31	4,65	0,0000	0,0003***
2,23	0,791	0,960	-0,169	58,4	-0,27	6,34	0,0005	0,0041**
3,54	0,836	0,976	-0,140	57,0	-0,26	7,99	0,0007	0,0056**
4,34	0,881	0,976	-0,095	54,8	-0,20	5,51	0,0175	0,1403
5,53	0,940	0,984	-0,044	52,2	-0,12	3,90	0,1857	1,0000
6,53	0,955	0,992	-0,037	51,8	-0,12	5,81	0,1231	0,9848
7,53	0,970	0,992	-0,022	51,1	-0,08	3,82	0,2792	1,0000
9,52	0,985	0,992	-0,007	50,3	-0,03	1,88	1,0000	
10,51	0,985	1,000	-0,015	50,7	-0,10	....	0,3490	
47,37	1,000	1,000						

Source: Own calculation based on balance sheets

### 3.3 Empiric Test on Capital Structure Theories

Corporation decisions relating to capital structure are the observed of all theoretical observers although corporation leaders make capital structure decisions in very few cases while expressly aspiring to the achievement of some optimal structure. This is because management mostly make decisions of production, market and finance and all these take direct effect on all-time capital structure of corporations. I was searching for the answer whether statements of certain theories on capital structure should be realized considering corporations examined by me (Tarnóczy-Fenyves, 2011).

*Certain statements on capital structure are effective on corporations as well, however, capital structure policy of corporations cannot be described extensively by any models.*

According to corporations I studied, negative connection proven between profitability and leverage refers to the realization of hierarchy theory however fundamentals of conversion theories do not come true. Positive connection being between consistence of assets and proportion of long-term credits though confirm the very grounds of conversion and agent theories.

Through empiric test of a statement of hierarchy theory of Myers-Majluf that refers to the internal sequence and the sequence among foreign funds, I tested whether it comes true that if investment possibilities of corporations are almost the same, amount of their internal funds and credits should be in negative connection. The more the available own funds are, the less foreign funds are needed to attain certain investment policy.

Based on researches of **ÁBEL-ÖCSI (1999)**, in the course of the analysis I adapted leverage index for estimating foreign funds however, to show internal funds I adapted the rate calculated by them, which relates to total balance of corrected operation flow. This index number does not include interest obligation in connection to foreign funds since this would cause inconvenient negative correlation effect considering rate of leverage. Method of calculating corrected operation flow is the following: taxed throughput – dividend + amortization + interests.

Leverage calculated from data of a certain year appears as dependent variant of regression equation, furthermore as an explaining variant aside from the index number of corrected flow, corporation size is also brought in the model, which I defined as a natural based logarithm of income. Estimation results of equation describing leverage are shown by *table 3*.

**Table 3: Estimation Results of Equation Describing Leverage**

	Coef	p-value
Const	0,4190257	0,016
Adj.operating cash-flow	-1,77678	0,0005
Size	-0,02132	0,239

Source: Own calculations

Due to the found equation, index of corrected flow is significant and goes with a negative indication which matches my idea, however connection between corporation size and leverage cannot be proven statistically.

Although indication of this index reflects negative rate that was hoped, this result could be caused even by coincidental fluctuation as belonging high P-rate shows. However it is clear that proportion of external sources relating to own capital lessens around 1,8 percent degrees in the case of 1 percent degree raise of flow related to total balance. Negative relation between held back profit and leverage, which is detected due to the regression equation, tallies the hierarchy theory of Myers-Majluf that sais corporations would finance firstly from own funds and would only after this take the opportunity of lodging credit.

Through empiric test of capital structure theories I confirmed the theorem which is already stated also by technical literature: none of them are realized comprehensively in the process of the changing of capital structure at corporations I studied. However the hypothesis of hierarchy theory does come true, which finds that corporations would finance activity of corporation firstly using own funds and only after this would turn to the opportunity of foreign funds.

Results of my research draw attention to the fact that conscious management of funds and amplification of the ground of own capital are indispensable conditions for better profitability status of the sector and for achieving competitive production.

#### **4. Conclusions**

Dealing with the optimal capital structure is current. 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.

I prove with relation analysis: capital structure proportions take serious effect on the fluctuation of profitability.

Symmetry of own capital (also proven statistically) shows positive relation of variation of profitability indices and liquidity, furthermore, raise of proportion of foreign capital couples with diminution of taxed throughputs: influence of its payable interest flow in taxed throughputs.

With the assistance of cutpoint analysis (also either specifically to orientation of activity and size) I defined a proportion of foreign capital and own capital which if reached or exceeded, may lead to operation producing deficit.

In the course of empiric test on grounds for capital structure theories considering general manufacturers, by statistic methods (correlation- and regression calculation) I prove that in the processes of developing capital structure of plants none of the theoretical models are realized comprehensively. However, while analysing comprehensive realization of models I managed to define factors of certain condition systems that do come true considering plants of manufacturers.

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