

DOCTORAL (PhD) THESIS

KAPOSVÁR UNIVERSITY
FACULTY OF ECONOMIC SCIENCE
Department of Finance and Economics

Head of Doctoral School:
DR. SÁNDOR KEREKES
Professor

Supervisor:
DR. ANETT PARÁDI-DOLGOS
Associate professor

CHARACTERISTICS OF THE HUNGARIAN SMALL AND
MEDIUM-SIZED ENTERPRISES' CAPITAL STRUCTURE

Author:
VERONIKA ALEXANDRA GÁL

KAPOSVÁR
2013

CONTENT

1.	RESEARCH PRELIMINARIES, OBJECTIVES	2
1.1.	Economic importance of the Hungarian SME sector.....	2
1.2.	The concept of capital structure, measurement and theories.....	2
1.3.	Determinants of capital structure	4
1.4.	Objectives of the dissertation.....	5
2.	MATERIALS AND METHODS	7
2.1.	Structure of the database and creating my own database	7
2.2.	Indicators of the capital structure's determinants	8
3.	RESULTS	10
3.1.	Capital structure clusters	10
3.2.	Activity clusters	11
3.3.	Variance analysis of background variables and determinants.....	12
3.4.	Multivariate regression models.....	13
4.	CONCLUSIONS	14
5.	NEW AND NOVEL SCIENTIFIC RESULTS.....	23
6.	PUBLICATIONS IN THE FIELD OF THE DISSERTATION	26

1. RESEARCH PRELIMINARIES, OBJECTIVES

1.1. Economic importance of the Hungarian SME sector

In Hungary, the overwhelming majority of businesses fall into the category of small and medium-sized enterprises. In 2010, 95,3 percent of enterprises belonged to the category of micro-sized enterprises based on the distribution of the employees' number. Beyond their numerical superiority, their size basically influences their revenue-generating capability, their contribution to the GDP, to the employment and to the developments. In 2010, more than half, 54,5 percent of Gross Value Added produced by SMEs, while they got jobs to 71,1 percent of employed in the business sector. They give 58,7 percent of Hungarian firms' net annual turnover and their share in exports is 26,4 percent. Their role in employment is considerable, as they typically do more labour-intensive activities (NGM, 2012).

The smaller the company size is tested, the more we face that SMEs have continuous short-term and long-term financing difficulties. Therefore, at the beginning of writing my dissertation, I aimed to explore the factors that influence the Hungarian small and medium-sized enterprises' capital structure, stock and rate of equity, long-term and short-term liabilities.

1.2. The concept of capital structure, measurement and theories

The *capital structure* is the distribution of cash flow of company's investments between holders of assets related long-term financial claims. When the financial officer decides about the financing of a project, actually he determines the combination of holders of claims (Brealey & Myers, 2005).

The easiest way we can compare the capital structure of companies are the *leveraging indicators* calculated from companies' financial data. In the international literature two types of indicators spread. The *leverage ratio* shows the proportion of all external liabilities to the total liabilities, namely $L = D / (D + E)$, where D is total debt and E is equity. Ergo (D + E) is total liabilities, which we may interpret also as the value of the company (V). The *gearing ratio* expresses the rate of total liabilities to equity, namely D/E. During the analysis, may cause problems which indicator the company understands as leverage. This clarification is crucial, as it can cause incomparable data (Brealey & Myers, 2005).

Different indexes could be formed according to what we mean as debt, which balance-sheet items we aggregate. Usually the ratio of long-term borrowings to equity, market value of debt to equity, or several parts of liabilities (e. g. bank loans, accounts payables) to equity or total assets are calculated (Krénusz, 2005a).

Interpreter theories of companies' capital structure have more than fifty years old history. The earliest and since then determining doctrines and empirical results were born in the 50's in the United States. Since the change of regime and the born of stock exchange there are already statistics in Hungary, which enable to make analyses from Hungarian companies.

The earliest studies were based on data of large and mainly stock exchange listed companies. Later, analyses concentrated on a sector (e. g. manufacturing firms), but they took already notice of all company size. Papers just present of SMEs' capital structure appeared beyond 2000. These basically tested disclosed contexts and predominating theories of large companies, but more and more frequently came into view determining factors, which are just specifically interpretable to SMEs (e.g. the manager and the owner are the same person).

1.3. Determinants of capital structure

Krénusz (2005b) divided the determinating factors of capital structure (determinants) into two large groups. She named as *macro factors* those regional- or country-specific characteristics, on which companies have no effect. These factors influence outwardly (exogenously) the financing decisions of firms. The *micro factors* (endogenous factors) are the speciality of the companies, which affect capital structure policy directly.

The analysis of the exogenous factors' effect is not aim of my dissertation, although they may help explain territorial differences experienced among Hungarian companies. Although most of the factors (e.g. tax system, legal system) can influence in the same way for all small and medium-sized enterprises, other factors (e.g. regional GDP, characteristics of input and output markets) can significantly affect the SMEs' capital structure decisions.

Researchers, deal with capital structure, investigated several endogenous factors and with different indicators legitimate their justification or neutrality. Capital structure theories interpret effect of determinants often oppositely each other and they influence differently companies with several size and activity and various type of liabilities. Micro factors that affect the capital structure e.g.: company size, tangibility, profitability, liquidity, tax burden or ownership structure.

1.4. Objectives of the dissertation

Aim of my dissertation is to explore which factors and how influence capital structure of the Hungarian small and medium-sized enterprise sector, based on national and international empirical researches, built into my own determinants and indicators.

To characterize the capital structure I use three indicators: *long-term debt ratio*, *equity ratio* and *ratio of accounts payables*. Their calculation method I present in *Table 1*. In my opinion, only an analysis of the proportion of long-term debt would not give an overall picture from capital structure of the small and medium-sized enterprises.

Table 1.: Capital structure indicators

Indicators	Method of calculation	Code
Long-term debt ratio	$(\text{Long-term} + \text{subordinated liabilities}) / \text{total liabilities}$	HLK_arany
Equity ratio	$\text{Equity} / \text{total liabilities}$	ST_arany
Ratio of accounts payables	$\text{Accounts payables} / \text{total liabilities}$	SZALL_arany

Source: own creation

Determinants of capital structure of – examined, which may be relevant in case of Hungarian small and medium-sized enterprises, and considering the range of data available to me – I analysed the following micro factors: tangibility, company size, profitability, tax burden and non-debt tax savings, liquidity, willingness to invest, ownership structure, asset intensity, labour intensity, product uniqueness, export orientation and market position.

The impact of the determinants I examined grouped into four main hypotheses, shown in *Table 2*.

Based on associated theories and former empirical results, direction of the suspected relations between micro factors and capital structure indicators summarize *Table 2.*

Table 2.: Hypotheses

Determinants	Capital structure indicators		
	Long-term debt ratio	Equity ratio	Ratio of accounts payables
H1: Effect of capital structure's determinants proved in previous international studies prevails also by Hungarian small and medium-sized enterprises.			
(1/a) Tangibility	+	-	-
(1/b) Company size	+	-	+
(1/c) Profitability	-	+	-
(1/d) Tax burden	-	+	-
(1/d) Non-debt tax savings	-	+	-
(1/e) Liquidity	+	-	-
(1/f) Willingness to invest	+	-	+
H2: The ownership structure affects the Hungarian small and medium-sized enterprises' capital structure.			
(2/a) Rate of foreign ownership	+	-	-
(2/b) Rate of state and municipal ownership	-	+	+
H3: The character of the product and the activity affect the Hungarian SMEs' capital structure decisions.			
(3/a) Asset intensity	+	-	+
(3/b) Labour intensity	-	+	-
(3/c) Product uniqueness	+	-	+
H4: Input and output market characteristics of the Hungarian small and medium-sized enterprises have an impact on their financing decisions.			
(4/a) Export orientation	-	+	+
(4/b) Market position	-	-	+

Source: own creation

2. MATERIALS AND METHODS

Századvég Economic Research Ltd. gave free run of the database, which we used to our analyses. This database contains Hungarian joint SMEs' balance sheet and income statement individual data from their corporate income tax declarations in anonymised form, from 2007 to 2011.

I made my research using Microsoft Excel 2010, their XLSTAT 2013 plug-in, IBM SPSS Statistics 19 and Weka data mining software.

In my analysis, using *cluster analysis* I created homogeneous groups to present characteristic financing habits of certain economic activities, and to identify capital structure patterns. Then based on *variance analysis* (ANOVA) I tested whether any significant differences are detectable between the created clusters in respect of the various determining factors.

To demonstrate the effect of background variables I confirm results of variance analysis with *Tukey's post hoc analysis* and also with *homogeneity test*. Effect of determinants impacted significantly I proved finally by *regression analysis* for each examined capital structure indicators.

I illustrated indicators of examined capital structure indicators and determinants using boxplots, which I created with XLSTAT 2013 statistical program.

2.1. Structure of the database and creating my own database

The database is based on the corporate tax declarations data kept by the National Tax and Customs Administration and contains Hungarian joint small and medium-sized enterprises' individual data. A row of the database is made up values from tax declaration *the balance sheet and income statement rows* and background variables on certain enterprises.

Background variables available from the database allow separation of *business year, SME categories, territorial units, economic activities and legal forms* and creation of comparative analyses.

The database contained data of more than 224.000 enterprises, from which I ruled out the following information:

- data of business year 2007,
- those firms, that did not provide corporate tax declaration in one of the examined business years,
- enterprises with 0 or unknown number of employees,
- those legal forms obligated to prove corporation tax declaration, which may distort the results because of their data (e.g. individual enterprises, attorney's office, water associations, condominiums, cooperatives, non-profit organizations with legal personality).

Finally, the resultant database contains data for *216.659 enterprises* from year 2008 to 2011.

2.2. Indicators of the capital structure's determinants

I defined the indicators of *tangibility, company size, profitability, tax burden and amortization, as non-debt tax saving instrument* based on experience of previous studies.

Between indicators of the effects of the tax system I defined also my own indicator, *ratio of tax allowances and tax exemptions* to earnings before tax, because in my opinion their tax saving effect to the Hungarian SMEs may be just as important as amortization.

Between *indicators of liquidity* I test also liquidity ratio, liquidity quick ratio and cash ratio indicators, because different indicators may affect to other capital components.

In case of investigation of the *willingness to invest* spread investments on net turnover indicator in the literature. The range of ratios I expand with investments on assets and investments on equity indicators.

Database allows analysing the ratio of *foreign, state and municipal ownership* in connection with ownership structure. The examination of foreign and state ownership is not without precedent. Examination of municipal ownership I consider justified, because in my opinion it would be the same evaluation in point of creditor's view as state ownership. To demonstrate this I examine also the ratio of the sum of the two ownerships.

The *asset intensity* and *product uniqueness* are already in many cases tested and proven determinants. The range of characteristics determined by activity I expand with indicator of *labour intensity*, which I defined as the quotient of personnel expenses and total expenses. This indicator should be examined pronounced in the SME sector, as the SMEs' characteristics that are mostly engaged in labour-intensive activities.

To the measurement of *export orientation* I defined, next to export turnover on assets taken from the literature, ratio of export turnover to total turnover.

The *market position* determinant characterizes enterprises from the aspect of their ability to take advantage of vendor financing. To its measurement I defined $(\text{accounts payables} - \text{accounts receivables}) / (\text{net turnover})$ quotient.

3. RESULTS

3.1. Capital structure clusters

First, I identified capital structure patterns with *k-means clustering* method using Weka software. Based on the experiences of the grouping, finally, I found the establishment of six clusters to be justified. The groups obtained the result of clustering I arranged in descending order according to their average equity ratio.

Based on the characteristics of each cluster in average capital structure indicators I diagnosed that, high equity ratio in cluster 1. and 2., high long-term debt ratio in cluster 5., while high ratio of accounts payables in cluster 2. and 4. observed. According to this, I characterized *the capital structure patterns* as follows:

Cluster 1.: high equity ratio,

Cluster 2.: high equity ratio and high ratio of accounts payables,

Cluster 3.: medium equity ratio,

Cluster 4.: low equity ratio and high ratio of accounts payables,

Cluster 5.: low equity ratio and high long-term debt ratio,

Cluster 6.: low equity ratio.

By examining capital structure clusters in the light of background variables I made the following findings:

- In the examined business years (from 2008 to 2011), capital strength of the SME sector continuously decreased.
- The role of vendor financing is being promoted with the company's growth in size.
- In the Northern Great Plain Region the rate of enterprises with high equity ratio is the highest and the rate of firms with low equity is the lowest.

- High long-term debt ratio is mainly in Southern Transdanubia Region and Western Transdanubia Region characteristic.
- Proportion of firms financed mainly from equity is high for the following activities: financial and insurance activities, human health and social work activities and education.
- The high long-term debt ratio in case of real estate activities and electricity, gas, steam and air conditioning supply occurs most often.
- The high ratio of accounts payables most typical for utilities, namely in the case of electricity, gas, steam and air conditioning supply and water supply, sewerage, waste management and remediation activities.

3.2. Activity clusters

The distribution of the capital structure clusters examined by TEÁOR (unified sectoral classification system of economic activities) main groups has a wide range. It is therefore justified to classify the activities into groups based on the average capital structure indicators. With *k-means clustering* method and using the XLSTAT Excel plug-in I formed the following *five clusters*:

- Cluster 1.: characterized by low equity ratio. Included is: activities of households as employers (20)
- Cluster 2.: in addition to medium equity ratio, long term liabilities have an important role. Included are: accommodation and food service activities (9), real estate activities (12) and other services (19).
- Cluster 3.: in addition to medium equity ratio, role of long term liabilities decrease and characterized by high ratio of accounts payables. Included are: electricity, gas, steam and air conditioning supply (4), trade, repairing (7) and transportation and storage (8).

- Cluster 4.: next to higher equity ratio, characterized by lower level of the long-term debt ratio and ratio of accounts payables. Included are: agriculture, forestry, fishing (1), mining and quarrying (2), manufacturing (3), water supply, sewerage, waste management and remediation activities (5), construction (6), information and communication (10) and administrative and support service activities (14).
- Cluster 5.: The average amount of the long-term debt ratio is zero. In addition to high equity ratio, characterized by low ratio of accounts payables. Included are: financial and insurance activities (11), professional, scientific and technical activities (13), education (16), human health and social work activities (17) and arts, entertainment and recreation (18).

3.3. Variance analysis of background variables and determinants

Using variance analysis (ANOVA) I proved, *whether background variables included in the database have a significant impact* on the Hungarian SMEs' capital structure indicators (equity ratio, long-term debt ratio, ratio of accounts payables). At 5% significance level, alone according to business year is no difference in the magnitude of equity ratio, in relation all other background variables (SME classification, regional classification, TEÁOR classification, legal form) and capital structure indicators ANOVA showed a significant result.

As a result of testing determinants I diagnosed that there is no significant difference between capital structure clusters in case of return on equity indicators, liquidity ratio, quick ratio, investments on assets, net turnover on assets and export turnover on assets. Most of these indicators are

not the only index of their determining factors. However, the *effect of asset intensity can be rejected* as a determining factor.

3.4. Multivariate regression models

The next step, I investigated capital structure determinants using single-factor linear regression, than I made from the determinants, which was significant as a result of single-factor regressions, multivariate linear regression models.

In determining independent variables of multivariate linear regression models I focused their use, from indicators representing the same determinant, which are increased explanatory power of the models, and with which the significance of the other variables improved.

I characterized tangibility with two indicators, rate of tangible assets (TE_arany) and rate of stocks (KESZL_arany). To define company size was logarithm of total assets (LN_MFO), to measurement profitability was ROA I. indicator (AEEperMFO), and to characterize liquidity was cash ratio (PEperRLK) the best.

It was found during my investigations that state and municipal ownership, contrary to my prior hypothesis, affect the capital structure of Hungarian SMEs differently, therefore I *rejected the use of state and municipal ownership indicator's rate* (ALLONKperJT), which indicate the sum of the two rates.

In case of measurement of willingness to invest was the investments on equity (BERperST), while in case of export orientation was rate of export turnover to total turnover (EXPperARB) significant.

My findings as a result of multivariate linear regression models I summarize in the chapter of conclusions in connection with capital structure determining factors.

4. CONCLUSIONS

Based on investigations based on background variables of year 2010 in connection with **the background variables** I conclude the following:

- I concluded from results in connection with *SME classification* that micro-sized enterprises operate with higher equity ratio and lower ratio of accounts payables, like their small and medium-sized competitors.
- In case of all three capital structure indicators I came to the conclusion that *the territorial (regional) location* makes a significant impact on the capital structure of the enterprises.
- Through activity clusters I came to the conclusion that *activities* influence significantly Hungarian SMEs' capital structure, and in each cluster may identify significantly different financing patterns.
- Business companies without legal personality operate with significantly lower equity ratio and ratio of accounts payables, while their long-term debt ratio is higher, like business companies with legal personality.

I summarize my conclusions about capital structure determinants according to the hypothesis. To make traceability of conclusions easier I summarize the results of linear regression models in connection with determinants in *Table 3.* Under each of coefficients in parentheses significance of coefficients is shown.

Table 3.: Summary of the results of the regression models

Dependent variables		Long-term debt ratio	Equity ratio	Ratio of accounts payables
Independent variables		HLK_arany	ST_arany	SZALL_arany
(1/a) Tangibility	Rate of tangible assets (TE_arany)	0,135 (0,000)	-0,215 (0,000)	-0,159 (0,000)
	Rate of stocks (KESZL_arany)	0,061 (0,000)	-0,332 (0,000)	-0,050 (0,000)
(1/b) Company size	logarithm of total assets (LN_MFO)	0,012 (0,000)	0,028 (0,000)	0,030 (0,000)
(1/c) Profitability	Return on assets (ROA) I. (AEE_MFO)	-	1,363E-5 (0,000)	-7,789E-6 (0,002)
(1/d) Taxation	Tax burden (ADOperAEE)	0,000 (0,003)	0,002 (0,000)	0,003 (0,000)
	Tax savings from amortization (AMOperMFO)	-	-	0,000 (0,003)
	Tax savings from tax allowances (KEDVperAEE)	0,006 (0,000)	-	-0,002 (0,323)
(1/e) Liquidity	Cash ratio (PEperRLK)	4,574E-7 (0,003)	2,352E-6 (0,000)	-1,222E-6 (0,000)
(1/f) Willingness to invest	Investments on equity (BERperST)	0,000 (0,000)	0,000 (0,000)	-
(2) Ownership structure	(2/a) Rate of foreign ownership (KULTULperJT)	0,026 (0,000)	-0,115 (0,000)	-0,069 (0,000)
	(2/b) Rate of state ownership (ALLTULperJT)	-	0,024 (0,005)	-0,015 (0,016)
	(2/b) Rate of municipal ownership (ONKTULperJT)	-	-0,016 (0,003)	0,037 (0,000)
(3/a) Asset intensity	Turnover on assets (ARBperMFO)	-	-	-
(3/b) Labour intensity	Personnel expenses ratio (SZJRperRAF)	-0,016 (0,000)	-0,043 (0,000)	-0,147 (0,000)
(3/c) Product uniqueness	Total expenses on turnover (RAFperARB)	-	-1,646E-5 (0,000)	-1,167E-5 (0,000)

Dependent variables		Long-term debt ratio	Equity ratio	Ratio of accounts payables
Independent variables		HLK_arany	ST_arany	SZALL_arany
(4/a) Export orientation	Export turnover ratio (EXPperARB)	-0,006 (0,000)	-0,039 (0,000)	0,049 (0,000)
(4/b) Market position	Market position (PIACIPOZ)	-	-1,118E-5 (0,006)	9,836E-6 (0,001)
R		0,342	0,344	0,369
R ²		0,117	0,118	0,136
F-statistic		7638,055	6130,544	6846,066
F significance		0,000	0,000	0,000
All observation		866 636	866 636	866 636

Source: own creation

In connection with **capital structure determinating factors** and their indicators I make the following submissions:

Findings related to hypothesis H1:

- In connection with *tangibility* I proved that coverage ability of assets has significant role in the financing of SMEs, but the higher rate of fixed assets increases only the proportion of long-term external liabilities, while decreases the ratio of accounts payables. *Therefore, I hold my (1/a) hypothesis formulated in connection with tangibility confirmed.*
- In case of investigation of *company size* I came to the conclusion that larger enterprises characterized by higher long-term debt ratio and ratio of accounts payables. This can be explained that the larger companies may access to credit easier and better terms, and by greater market weight may get longer payment deadlines. *Therefore, I hold my (1/b) hypothesis formulated in connection with company size confirmed.*

- Obligated results in connection with the *profitability* in case of equity ratio and ratio of accounts payables confirm prevail of the Pecking Order Theory. Hungarian firms with higher profitability activities operate with higher equity ratio, less use external resources and have a good payment discipline. *Therefore, I hold my (1/c) hypothesis formulated in connection with profitability **confirmed**.*
- In connection with *tax burden* in case of all capital structure indicator I found positive relationship, which can be explained utilization of tax savings arising from the interest. This result is rather typical for investigations conducted on samples of the large companies, but not unprecedented also in case of SME samples [e.g. (Sogorb-Mira & López-Gracia, 2003)]. *Therefore, I hold my (1/d) hypothesis formulated in connection with tax burden **confirmed** from the standpoint that the effect is prevail, but my results partly contradict the findings of previous international studies.*
- *Tax savings from amortization* brought significant results only in case of ratio of accounts payables. In case of *tax savings from tax allowances* long-term debt ratio resulted a significant relationship. Enterprises with the increase of indebtedness live with increasing proportion of the possibility of tax allowances and tax exemptions. *Therefore, I hold my (1/d) hypothesis formulated in connection with non-debt tax savings instruments **confirmed** from the standpoint that the effect is prevail, but my results partly contradict the findings of previous international studies.*

- My result in connection with *liquidity* confirmed that high liquidity is an important element of creditworthiness. In case of ratio of accounts payables proved that higher liquidity associated with better payment discipline, therefore the relation is negative. *Therefore, I hold my (1/e) hypothesis formulated in connection with liquidity **confirmed**.*
- In case of *willingness to invest* is confirmed that Hungarian SMEs need to implement their major investments involve additional external resources. My results are in agreement with Bell & Vos's (2009) result of research conducted in small-sized enterprise sample. *Therefore, I hold my (1/f) hypothesis formulated in connection with willingness to invest **confirmed**.*

H1: Effect of capital structure's determinants proved in previous international studies prevails also by Hungarian small and medium-sized enterprises.

Based on my results **I accept hypothesis H1.**

Findings related to hypothesis H2:

- Conducted investigations proved my entire hypothesis in connection with *rate of foreign ownership*. The greater foreign ownership operated enterprises face with more and better financing options, therefore characterized by a higher indebtedness, thereby their equity ratio is typically lower as well. The demonstrated negative relationship with ratio of accounts payables betrays a better payment discipline. *Therefore, I hold my (2/a) hypothesis formulated in connection with foreign ownership **confirmed**.*

- In connection with the role of *state and municipal ownership* first I came to the conclusion that they affect the capital structure of Hungarian SMEs differently.
- In connection with *state ownership* the hypothesis has been proved, that greater rate of state ownership is associated with a higher equity ratio. In case of ratio of accounts payables I got just the opposite result as my hypothesis, namely major state-owned enterprises have better payment discipline.
- In connection with *municipal ownership* I got just the opposite result as in case of state ownership. The greater municipal ownership is associated with lower equity ratio. Conducted investigations confirmed my hypothesis concerning to ratio of accounts payables, namely greater municipal ownership is associated with higher ratio of accounts payables. *Therefore, I hold my (2/b) hypothesis formulated in connection with state and municipal ownership **confirmed** from the standpoint that the effect is prevail, but my results contradict the findings of previous international studies.*

H2: The ownership structure affects the Hungarian small and medium-sized enterprises' capital structure.

Based on my results **I accept hypothesis H2.**

Findings related to hypothesis H3:

- Impact of *asset intensity* on capital structure in case of capital structure indicators brought no significant result. *Therefore, I **reject** my (3/a) hypothesis formulated in connection with asset intensity.*

- In connection with *labour intensity* determinant I diagnose that it has with all three capital structural indicator a significant negative relation. Namely, more labour-intensive enterprises characterized by lower equity ratio, lower long-term debt ratio and lower ratio of accounts payables. Negative relationship with all three indicators can only be explained that firms with more labour-intensive activities prefer short-term loans and other short-term sources. *Therefore, I hold my (3/b) hypothesis formulated in connection with labour intensity confirmed.*
- I revealed a negative relationship for indicator of *product uniqueness* in case of equity ratio and ratio of accounts payables. Namely, grater rate of expenses operating enterprises – which also interpretable as inflexibility of the product portfolio – have lower equity ratio, and they can live less with the opportunity of trade credit. *Therefore, I hold my (3/c) hypothesis formulated in connection with product uniqueness confirmed from the standpoint that the effect is prevail, but my results contradict the findings of previous international studies.*

H3: The character of the product and the activity affect the Hungarian SMEs' capital structure decisions.

Based on my results **I accept hypothesis H3.**

Findings related to hypothesis H4:

- In connection with the measurement of *export orientation* I can say that only export turnover to total turnover indicator brought significant result in case of all capital structure indicators. I hold my hypotheses confirmed, under which mainly export-oriented companies operate with lower indebtedness and are characterized by higher ratio of accounts

payables. By the equity ratio the negative result was obtained, which means that, exporter firms have smaller equity ratio, as enterprises product only to internal market. This is due to the key role of vendor financing. *Therefore, I hold my (4/a) hypothesis formulated in connection with export orientation **confirmed**.*

- *Market position* indicator brought significant result in case of equity ratio and ratio of accounts payables. By confirming, those enterprises, which are able to finance their accounts receivables with their suppliers, have higher ratio of accounts payables, and thus less equity ratio need to maintain. *Therefore, I hold my (4/b) hypothesis formulated in connection with market position **confirmed**.*

H4: Input and output market characteristics of the Hungarian small and medium-sized enterprises have an impact on their financing decisions.

Based on my results **I accept hypothesis H4.**

I summarized my decisions concerning to accept or reject of sub-hypotheses in *Table 4.*

Table 4.: Hypotheses and results

Determinants	Long-term debt ratio			Equity ratio			Ratio of accounts payables		
	Hypotheses	Result	Decision	Hypotheses	Result	Decision	Hypotheses	Result	Decision
Tangibility	+	+	confirmed	-	-	confirmed	-	-	confirmed
Company size	+	+	confirmed	-	+	rejected	+	+	confirmed
Profitability	-	no significant	rejected	+	+	confirmed	-	-	confirmed
Tax burden	-	+	rejected	+	+	confirmed	-	+	rejected
Tax savings from amortization	-	no significant	rejected	+	no significant	rejected	-	+	rejected
Tax savings from tax allowances	-	+	rejected	+	no significant	rejected	-	no significant	rejected
Liquidity	+	+	confirmed	-	+	rejected	-	-	confirmed
Willingness to invest	+	+	confirmed	-	-	confirmed	+	no significant	rejected
Rate of foreign ownership	+	+	confirmed	-	-	confirmed	-	-	confirmed
Rate of state ownership	-	no significant	rejected	+	+	confirmed	+	-	rejected
Rate of municipal ownership	-	no significant	rejected	+	-	rejected	+	+	confirmed
Asset intensity	+	no significant	rejected	-	no significant	rejected	+	no significant	rejected
Labour intensity	-	-	confirmed	+	-	rejected	-	-	confirmed
Product uniqueness	+	no significant	rejected	-	-	confirmed	+	-	rejected
Export orientation	-	-	confirmed	+	-	rejected	+	+	confirmed
Market position	-	no significant	rejected	-	-	confirmed	+	+	confirmed

Source: own creation

5. NEW AND NOVEL SCIENTIFIC RESULTS

According to my research, the following new and novel scientific results can be formulated:

- 1. Mechanism of action of capital structure determinating endogenous factors (tangibility, company size, profitability, liquidity, willingness to invest) proven in international researches in SME sample is the same also in case of capital structure of Hungarian joint small and medium-sized enterprises.**

Tangibility, company size and liquidity play in the acquisition of the long-term external resources a significant role. Enterprises operating with higher rate of fixed assets, larger size and greater liquidity are able to make use of long-term, debt type financing forms in larger proportion.

Obligated results in connection with the profitability confirm prevail of the Pecking Order Theory. Hungarian firms with higher profitability activities operate with higher equity ratio, while they are using less the vendor financing. This proves that they rank ahead the internal resources against external resources from the financing instruments.

By the investigation of willingness to invest I concluded that a major proportion of investments associated with a higher proportion of long-term external liabilities. Therefore Hungarian joint SMEs implement their major investment with involving additional external resources.

2. The ownership structure plays a key role in establishing the financing structure of the Hungarian small and medium-sized enterprises.

The greater foreign ownership operated enterprises may live with more and better financing options, thus they operate with higher indebtedness and are also characterized by better payment discipline.

State and municipal ownership affects the capital structure of Hungarian small and medium-sized enterprises differently.

In case of major state-owned firms equity play greater role in the financing, while vendor financing relegate to the background, which indicates the existence of better payment discipline.

Against this, major municipal-owned SMEs have less equity ratio, and they are using a more the opportunities of vendor financing. Which mean not necessarily a bad payment discipline, it may be explained by cyclicity of resources received from the state, but by all means it may interpreted as a sign of confidence of suppliers.

3. The character of the product and the activity basically determinates the financing decisions of Hungarian joint small and medium-sized enterprises.

The more labour-intensive enterprises financing themselves with lower rate of durable external resources and are less able to use trade credit. These SMEs are also characterized by lower equity ratio. As explained by that, firms with more labour-intensive activities prefer short-term loans and other short-term sources.

The effect of product uniqueness is the same as the effect of labour intensity in connection with equity and use of vendor financing. Namely grater rate of expenses operating enterprises have lower equity ratio, and they can use less the opportunity of trade credit.

4. Input and output market characteristics of the Hungarian small and medium-sized enterprises have an impact on their decisions in establishing of capital structure.

The rate of export orientation (export turnover to total turnover) has an impact on the capital structure. Higher rate of export sales associated with less equity ratio and simultaneously less indebtedness, and enhance the role of supplier financing.

Of the first time I made a proposal to the investigation of the market position as capital structure determinating factor of enterprises. To the measurement of its effect I created an indicator (accounts payables – accounts receivables) / (net turnover), which indicates through presage the dominance of accounts receivables or accounts payables, while comparison to net sales allows quantification of strength of the market position.

Market position indicator brought significant result in case of equity ratio and ratio of accounts payables, too. By confirming my hypothesis, those enterprises, which are able to finance their accounts receivables with their suppliers, have higher ratio of accounts payables, and characterized by less equity ratio.

6. PUBLICATIONS IN THE FIELD OF THE DISSERTATION

Scientific publications in scientific journals:

In foreign languages

1. Gál, Veronika – Koponicsné Györke, Diána: Financial problems of the cultural projects in South Transdanubia. Regional and Business Studies (2011), Vol 3, No 1, 403-407, Kaposvár University, Faculty of Economic Science, Kaposvár (ISSN: 2061-2311)
<http://journal.ke.hu/rbs/index.php/rbs/article/viewFile/58/59>
2. Gál, Veronika – Gáspár, Katalin – Parádi-Dolgos, Anett: Regional differences in Hungarian SMEs' capital structure. Acta Universitatis Sapientiae, Economics and Business, Kolozsvár (megjelenés alatt)

In Hungarian

1. Gál Veronika – Kürthy Gábor: A szegények bankja modell lehetőségei Magyarországon. A virtuális intézet Közép-Európa kutatására közleményei (2012), IV. évfolyam 1. szám (No.7), 141-150, Szeged (ISSN: 2026-1396)
2. Balogh László – Gál Veronika – Parádi-Dolgos Anett – Sipiczki Zoltán: Kulcs egy alternatív mikrofinanszírozási modell sikeréhez. Acta Scientiarum Socialium (2013), No. 38, 153-161, Kaposvári Egyetem, Kaposvár (ISSN: 1418-7191)

3. Gál Veronika – Sipiczki Zoltán – Szóka Károly – Vajay Julianna: A Grameen-modell társadalmi hasznosulásának mérhetősége. E-conom (2013), II. évfolyam, 1. szám (No. 3), 33-45, Nyugat-magyarországi Egyetem, Sopron (ISSN: 2063-644X)
https://bismarck.nyne.hu/fileadmin/dokumentumok/ktk/econom/2013_1/03_GalV_etal_e-conom_II1.pdf

Full scientific publications in proceedings:

In foreign languages

1. Gál, Veronika – Gáspár, Katalin: What kind of factors influence the SME's capital structure? Proceedings of the 4th International Conference of Economic Sciences (CD), 364-373, Kaposvári Egyetem, Kaposvár, 9-10 May 2013 (ISBN: 978-963-9821-62-0)

In Hungarian

1. Kovács Kitti – Gál Veronika – Geszti Szilárd: A kis- és középvállalkozásoknak folyósított banki hitelek alakulása 2000 és 2007 között. II. Nemzetközi Gazdaságtudományi Konferencia (CD), 1-8, Kaposvári Egyetem, Kaposvár, 2009. április 2-3. (ISBN: 978-963-9821-08-8)
2. Gál Veronika – Koponicsné Györke Diána: Dél-dunántúli EU-s kulturális pályázatok finanszírozási problémái. XVI. Ifjúsági Tudományos Fórum (CD), 1-5, Pannon Egyetem, Keszthely, 2010. március 25. (ISBN: 978-963-9639-36-2)

3. Kovács Kitti – Gál Veronika – Parádi-Dolgos Anett – Balogh László:
A kis- és középvállalkozásoknak folyósított banki hitelek alakulása
2000 és 2009 között. XII. Nemzetközi Tudományos Napok (CD),
1004-1008, Károly Róbert Főiskola, Gyöngyös, 2010. március 25-26.
(ISBN: 978-963-9941-09-0)

Presentation:

1. Gál Veronika: Kis- és középvállalkozások regionális különbségei.
VI. Régiók a Kárpát-medencén innen és túl Konferencia, Kaposvári
Egyetem, Kaposvár, 2012. október 12.