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THESES OF DOCTORAL (PH.D.) DISSERTATION

THE ANALYSIS OF THE ECONOMICAL POSITION OF THE
BIGGEST HUNGARIAN COMPANIES

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1. Selection of topic and its relevance

The thesis examines which factors play the most important role in the development of the companies, and in addition is looking for answers as to what determines the success of a company. The author was looking for answers to these questions based on the experience of the biggest domestic companies. Regarding the success it is obviously not the size which is the main determining factor, but rather the level of development where a company currently is. However, the analysis of large companies can answer questions which are essential to the development of the economy as a whole. It is the reason behind examining the largest Hungarian companies.

One of the new features in the thesis is that it is based on real companies' collected data from the annual financial reports and it also established a stand-alone model. The research covers a material of about two decades, during which time the effects of joining the European Union and also the global economic crisis can be analyzed. As a result of the investigations, it became observative how an industry got re-arranged, and how each company developed or on the other hand lost its former leading position. By applying the model it also became predictable if a company can improve its situation, or whether it will keep struggling with serious problems. That is how some changes that are at first glance seemingly surprising due which huge companies fall beyond the top50 range, will become much easier to understand.

The research aimes to help understand the background processes which cannot be measured and are not visible directly, but it also seeks to show direction to future researches. The new scientific results primarily focus on answering these questions.

2. The structure of the thesis

In the first half of the doctoral thesis the author defines the concept of the growth. This is necessary because business leaders nowadays are forced to take decisions under the pressure of need for growing. The author differenciates quantitative and qualitative growth from each other, from which, latter is more important – this is what is called development. In the thesis the author puts growth into a macroeconomic context first and within it presents the economic growth cycles first, then examines the economic growth and developmental theories defined by the classics. Aftwards the author interprets the development on company level and through the indicators of which he gets to the rankings (Chapter 3).

A great value of the could be, that it merits a huge database from real life, so it is able to handle the data from more than one company, more industry in details. The data are subject after the the turn of the Millennium, so are relatively current abd follow through the changes which occurred in the life of the biggest Hungarian companies.

At the middle of the timeframe covered by the studies a recession can be seen, which is coming from the cyclical movement of the economy – this makes the results of the analysis specially interesting: it provides information first hand on how a huge economic recession can chnge a companys, on in bigger view a whole industry's position. What kind of reactions does it pull from a company and how do they adapt to the changed situation. This is the fundamental need of development –evolution – and survival as well.

The methodology of the research is shown in Chapter 4, where the the tendencies on macro-level are demonstrated based on real, audited financial statements and afterwards the author goes into micro-level analysis with various statistical methods (quantitative statistical methods, multivariate statistics methods). Then the auther tries to establish a model (the procedure of which is described in Chapter 5), which is able to show more precisely the development of each company. Through it it is more visible how successful the adaptation will be by each company, so it will become more understandable how a bigger company can become history

from one year to another, how it becomes subject of acquisition or leaves a country.

Based on these the author orders the companies into clusters, which show on which level of development a company is currently at, but also the way it developed forward or backward. The macro-level trendanalyses are done mostly with the help of Excel calculation softwer, while the micro-level analyses are carried out with SPSS 16.0 and demonstrate the path of the Hungarian companies. Due to limitations there was no possibility to investigate the developement made by the subsidiaries or parent companies of these enterprises during this period, which assumably also had an effect on the faith of these companies, The results of the investigations of Hungary on macro – and micro-level are demonstrated in Chapter 6, while Chapter 7 summarizes the new results.

In the last Chapter of the thesis the Conclusions, the new scientific results the acceptance or disapproval of the hipptheses are shown, and also makes chances about the possibilities of further researches and the proposals of the use of the results practice (Chapter 8).

3. Content and methods of research

The methodology of research is determined by the available or revealable databases and on the other hand the connections between the economic indicators and indicator systems. Furthermore there is a need for knowledge of informatics and statistical systems, softwares and in some cases the upgrading of these. There was a need for a creation of a complex methodology-system, which enables the racional usage and correct analyses of a huge database. First, the collection and creation of the database was necessary, then selection of indicators and statistical analysis with the help of SPSS program package. To enable the development (continuity) of the research a frame-program was established as well, wich makes the creation of tables and figure needed for the analysis automatic.

During the research different database needed to be examined and synthetised. The gathering of the already available seconder information started with the following: finding and downloading of the available rankings. The author downloaded the lists of Deloitte from the company's website and for the years not covered, he researched the rankings of HVG (Hungarian Weekly Economics, weekly newspaper) in the library. The data were converted into Excel format and the financial statements got downloaded from the govenments website (https://e-beszamolo.im.gov.hu) for all the companies. The auther expanded the data available (Turnover, Earning before tax) with further information: all main lines of balance sheet and profit and loss statements, and from the annotations the employee numbers and ownership structure. Due to the lack of a common currency, the author converted the gathered data with the exchange rate of the Hungarian National Bank for all companies into Million Euros.

After the gathering and primary workthrough of the data, a huge database was available for the investigations. A feature of the Excel-based model is, that it is able to show the values converted to Million Euros not only on company-level, but also on an aggregated industry-level as well. A further gain of the model could be, that it can easily be extended with further years' data, which makes it dynamic, continues and easy to update.

Because the basic data are not comparable with each other, therefore indicators were calculated. This was possible from the data of the financial statements, which made the companies comparable and this was the basis for the factoranalysis as well.

The author's aim with the factoranalysis was to identify several variables and compress them into one variable, so called factor which makes the connections between the companies' development level measurable and demonstrateable.

Afterwards with the help of clusteranalysis he ordered the companies with same features into homogeneous groups (clusters). With the help of clusters he was able to identify tendencies, common features between the companies, which are much more than just an industry-based grouping, and help the deeper understanding of the processes.

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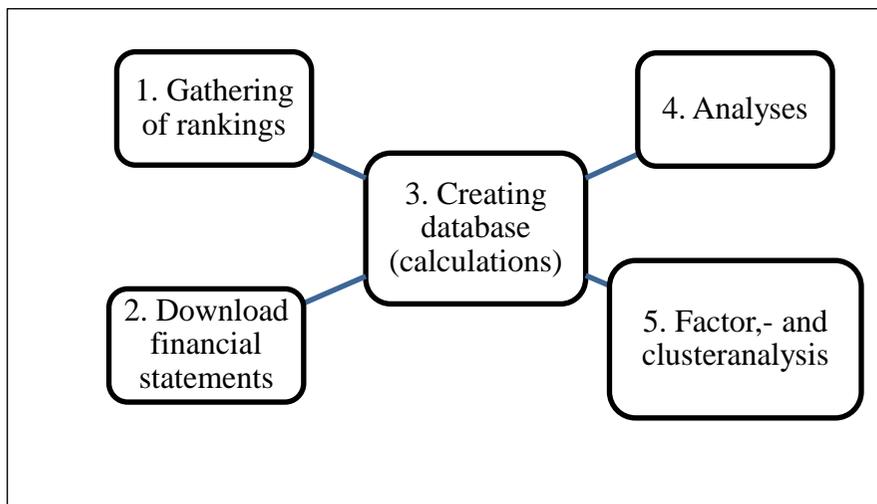The method of analyses are summarised in Figure 1.

Figure 1: Collection of database and method of analyses
Source: the author's elaboration

The companies examined in the thesis are the ones, which were represented in the Top 50 several times during the years. The one-off companies were not part of the analysis, but the companies who were represented for several years and fell beyond the list, were included.

4. Results of the research

4.1. Evaluation of the hypothesis analysis
After the above mentioned analyses the hiptheses could be proved or disapproved. These results can be found below.

H1: the position of the companies is not based only on their industries, other feature determine it more.
The position of a company was not determined by only by the tendencies of the industry it was in, but with proper managerial decisions it can be mover to a stabil developing enterprise, even in an industry which is recession.

This thesis was proved, because the established model showed that based on other features there is a bigger resemplance between the companies, than based on the industries they are working in. From the results it can be seen, that the variables of effectiveness determine the a position of the companies.

H2: the foreign owned companies are performing better than the domestic owned ones.
Some kind of duality can be observed between the Hungarian companies: they can be divided into foreign and domestic owned ones. It is a common belief, that the foreign owned companies are more developed, more modern and therefore are able to perform better.

This thesis didn't prove to be correct, because no significant difference was found between the companies based on their ownership. The model shown in the thesis made the groups (clusters) based on other factors, and within the same group there were both domestic and foreign owned ones as well; none of them made a separate group on its own. Here it can be observed that the high-technology and the more innovative feature of company gives only potential comparative market advantages. The qualification of human resource, the clarity of market conditions, and the abilities of top management ensure all together the establishment of real advantages.

H3: companies with newer assets and technology are performing better as well.

Companies with new modern assetpark are assumably performing better. The thesis is looking for the answer if older assets with better usage and being operated better could make a company more effective, than a company using brand new assets.

This thesis didn't prove to be correct, because during the analyses it turned out, that the device reformation indicator as a factor did not have a significant effect, therefor was left out from the final model as well. This is logical since companies having newer devices and technologies are not necessarely more effective. This calls attention to the fact that the innovation means only a potential opportunity but on its own does not guarantee the high-level efficiency.

H4: the companies paying a higher average wage can show better performance indicators.

The companies paying a higher wage and presumably applying a more skilled workforce perform better than the companies with lower skilled more unqualified workforce.

This thesis did not prove to be correct, since any company may be efficient if it is making use of its resources adequately, independently whether his basic activity demands a more trained workforce, or not. This factor was left out from the final model since he did not have a significant effect from a statistical point of view. There may be more reasons for this: the higher wage does not guarantee the more skilled workforce to go there (in Hungary it is more likely that the more qualified workforce makes an attempt abroad), on the other hand only the high-level general effect between the resources (synergy) is able to insure the most efficient operation of business and through this the establishment of the market benefits.

H5: the change of a single company's place in the rankings can be foretold.

Trends and tendencies can be identified, which are the imprints of a corporate strategic decision. A change caused by a decision has an effect on the place occupied in the rankings as well. Therefore based on a given change its consequences can be determined and so can the place occupied in the ranking.

This thesis is proven true, since int he final model the positions occupied by the companies moved together with their positions occupied in the rankings as well. The dissertation demonstrated that even if there is only a few place difference between companies in some cases in the rankings, but in background there could be much deeper differences undergoing. With the help of these the forces in background moving the rankings can be understood better. It can also be better understood that companies sitting next to each other in year can be totally apart from each other the next year: how can one improve its positions, while the other one even fall out list of the largest companies.

The correctness of the hypothesis depends on the factors and indicators selected to the model, and also on the stability of the economic environment in which forecast is made. The author notes that there is no indicator between the expenditure efficiency indicators, which is guaranteed to indicate the changes of the positions of companies within the rankings. The change in position is determined a lot of factors, the effect of which is only possible the predict with a certain probability, but it is necessary to forecast even in an unsure environment.

The results of the hypothesis examinations are summarised in Table 1.

Table 1.: The results of the hypothesis examinations

Hypothesis	Hypothesis description	Result
H1	The position of the companies is not based only on their industries, other feature determine it more.	proved
H2	The foreign owned companies are performing better than the domestic owned	not proven

	ones.	
H3	Companies with newer assets and technology are performing better as well.	not proven
H4	The companies paying a higher average wage can show better performance indicators.	not proven
H5	The change of a single company's place in the rankings can be foretold.	proved

Source: author's construction

The proved and disapproved hypothesis lead together to the theses of the dissertation, which will be summarised below.

4.2. Theses and new scientific results
The author demonstrates the new results briefly. The theses, and the additional results revealed in the course of the research will also be shown..

T1: The position of the companies is not based only on their industries, other feature determine it more.

T2: The researches did not prove that the foreign owned companies are performing better than the domestic owned ones.

T3: It is not necessarily true, that the companies with newer assets and technology are performing better as well.

T4: It wasn't proved either, that the companies paying a higher average wage can show better performance indicators. Any company may be efficient if it is making use of its resources adequately, independently whether his basic activity demands a more trained workforce, or not.

T5: The change of a single company's place in the rankings can be foretold and the forces in the background of the rankings could be understood.

The dissertation did not formulate a hypothesis beforehand relating with this, but it proved true during the researches, which industries the crises hit most. This lead to the the sixth thesis.

T6: the crises of 2008/2009 had the most negative impacts on the real estate and building industry, the technology, media and telecommunications and the consumer business and transportation.

The next statements can be considered as new or novel results, which are not directly linked to the examination of the hypotheses, but rather to the analysis of the literature, and to connections revealed during the execution of the research.

- **The change of proportion of the industrial branches represented by the companies got depicted in novelly way**, and made it possible to present the effect of the world economic crisis through the top50 companies rankings. (the proportion of manufacturing enterprises grew, and proportion declined within companies working in the real estate and the telecommunication). **To enable international comparison the author compared the domestic data with several Middle-Eastern European country's data, made the analysis and figures for those data as well.**
- The author examined and **presented the effects of the economic crisis had on other areas**: the amount of money grew in the engergy sector the most, the average industrial indebtedness was growing in the pharmaceutical industry mainly, and the change of the employees' number decreased in the consumer industry the most.
- The auther considers as a new result, the **depiction of the so-called double dual theory** through the largest domestic companies: exports proportion and wages, and in the context of an exports proportion and added value, with disintegration between foreign and domestic owned companies.

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- as an additional result, that the **usefullness of devices got depicted based on industrial branches and were presented in breakdown by owners**. In this perspective the largest difference between the foreign and domestic owned companies lies within the energy sector: with an average 30% for foreign, and 50% for domestic owned companies in Hungary.
- During the analysis of the results from the research **an „automatic„ Excel table (model) got created**, which may ease the additional work, since it is suitable with a change of a filter setting to:
  - depict trends industries with various result and balance sheet categories, differenciate based on ownership, with nearly 20 years of data, which can be expanded optionally,
  - analyse in a case of a single company both the balance sheet, and both the profit and loss categories for several years, or for comparison with other companies in the list.
- Furthermore the author **created an SPSS based model, which helps in the single companies being ordered to clusters, and also to the model the motion of the clusters through several years.**

5. Conclusions and proposals

The dissertation provides several new, from such viewpoints not yet in details examined information about the largest companies in Hungary, but because of extent boundaries the examinations were no textended outside the country, had to be restricted for Hungarian data..

It may be useful to extend examination with other countries' databases. It would make it possible to understand the value chains, the relations between parent company and subsidiary which could add a new, so far not yet researched viewpoint to previous researches Such an examinable scope could be the relocation of company functions from country to another and the effects of such a decision made in both countries (sender and receiver).

Not only the companies, but also the single countries' economies and business cycles are affecting each other, it may be worth to investigate economies of the countries giving the most FDI to Hungary (Germany, USA).

It would also be worth to compare and understand the developement of other socialist countries better. Such a research could investigate the V4 countries and compare the similarities during happened the political and economical transformation and the processes happened in theis industries. The author thinks it can be examined if the the companies could be grouped together based on the a country or based more likely on the industry. It might also be interesting to see if how much the companies move together, or how much the countries help each others economies or just the opposite, slowing each others business cycles (how a country takes advantage of the economic recession of another country).

I other countries, the parent companies are introduced to the stock exchange as well. It could be worth to compare the changes in the ranking positions and the changes in the exchange rates and investigate the correlation between the two. In Hungary, only Richter, Mol and Matáv (Telekom) have shares at the stock exchange, which would mean a sample with a too low number and could not be researched within this dissertation.

Additional researches could take it into consideration as a special area the loan offices and banks, but here some special accounting rules need to taken into consideration: the credit institution accountancy in his case. Like with the companies, there are various restructurings, mergers and acquisitions within the banks as well. Creating groups is not necessarily possible based on industy, but more likely to be based on the aimed markets (residential or corporate clients, or based on the the time span of the credits, or based on specialization: project financing, factoring, exports financing (Exim Bank), etc.)

The research seems to be extended to small and medium enterprises as well (SME sector), but the number of these companies is much higher and their financial reports are not so easily accessible. Here the proprietory construction can be divided to foreign and domestic owners, but also to dominant and less dominant proprietors).

The companies' detailed exploration could answer a lot of questions, but could raise several other question as well. At the same time the author believes, that with these topics it is worthy and necessary to deal, since these could contribute to a deeper understanding of the economic processes

and thereby help make better economic decisions in the future for both on corporate and both on a national economic level.

6. Relevant publications

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2. SÁVAY Balázs (2017): Tendenzen in den strategischen Positionen der grössten ungarischen Unternehmen in den letzten 15 jahren
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4. SÁVAY Balázs, SZÉKELY Csaba (2016): Változások a Top 50 vállalat rangsorában az elmúlt 15 évben [Changes in the Order of Top 50 Companies in the Last 15 Years]
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5.   BARTAKOVICS Gábor, SÁVAY Balázs, SÁVAY Dávid (2015):
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6.   SÁVAY Balázs, BARTAKOVICS Gábor, SÁVAY Dávid (2015):
Analysis of Impact of the Crisis on Top50 Companies in Hungary
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7.   BARTAKOVICS Gábor, SÁVAY Balázs (2012): Kína az új
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