Inside financial conglomerates
Effects in the Hungarian pension fund market

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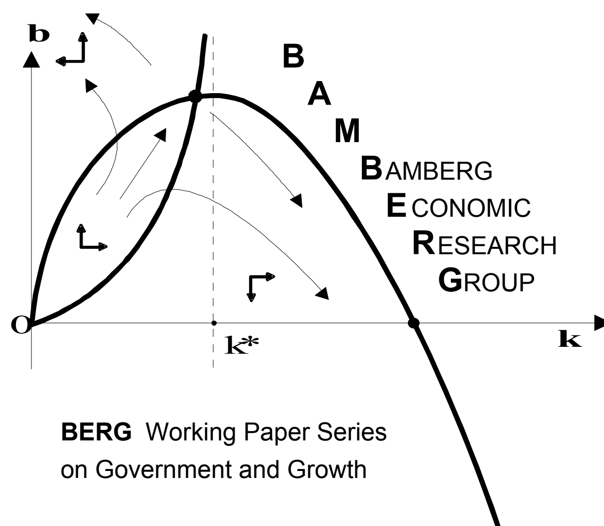

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Inside financial conglomerates

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by

Borbála SZÜLE*

Abstract

Financial conglomerates have evolved in many countries with a developed financial system, their presence and impact are however quite diverse in these economies. Since this phenomenon raises interesting questions about the stability and efficiency of the financial system as well, it is worth examining first of all what kind of effects the participation in a group formed by different financial firms has on the participating institutions. Motivated by this reason in this paper I examine some hypotheses concerning the impact of financial conglomerates in the Hungarian pension fund market. Based on the common view present in the related literature more effective operation and better performance of the participating funds may be assumed. In contrast to this, the results are mixed: an overall evidence in support of the greater effectiveness and better performance of the participating funds could not be found, although there are some features that show an impressive advantage of the participants in financial conglomerates.

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1. Introduction

Progressing integration between different parts of the financial sector have promoted the evolution of financial conglomerates especially in the last years. Dependig on previous experience the convergence of financial activities such as for example banking and insurance have occured in several ways in almost every developed country, and in many cases cooperation between representants of different parts of the financial sector takes also an institutional form. Changing conditions in the technical background and the requirements of the demand side of the financial markets have strongly affected the operation of traditional financial intermediaries and new institutions as well. The new phenomenon of evolving financial conglomerates raises many questions regarding among others the effectiveness of these conglomerates from which only few have already been completely answered.

One of the most interesting questions is, what are the incentives for building these formations. In the recent literature some attempts have already been made to define and measure the factors that may lead to the formation of financial conglomerates. Some researchers have studied the efficiency and performance of institutions in and outside these conglomerates and found that the evidence is quite complex: in some cases the participating institutions operate more efficiently than the non-participating ones, but there are also contradicting examples. Efficiency gains may, in turn, not completely explain the presence of financial conglomerates. Despite the fact that conglomeration is one of the latest development of financial systems, a growing number of studies deal with the theoretical and empirical aspects of this problem; although there is still no convincing evidence that would support the hypothesis that the evolution of financial conglomerates is based strictly on economic considerations and performance or efficiency expectations. The macro- and microaspects of the tendence towards conglomeration in financial systems are related in the theoretical literature to the problems of the financial intermediation and the efficiency of financial institutions. Both of these approaches suggest, that in general there can be circumstances, where conglomeration may be a reasonable response to the challenges financial institutions face nowadays. This however provides no unambiguous answer to the question, what are the factors that lead to the formation of conglomerates between financial institutions and whether it is economically advantageous for the participating institutions. Empirical researches have already also studied this question by estimating for example „scope economies" for financial institutions that „produce" different financial services, but a generally valid answer to the original question could also not been found.

After all, the original question about the incentives for the formation of financial conglomerates can be formulated from an other aspect: do financial institutions which belong to a conglomerate significantly differ from other institutions in the same sector? It remains an interesting problem, what are the most significant factors that explain the differences between the participating institutions in a financial conglomerate and the other firms within a special financial sector. If obvious differentiating factors could be found, one could come closer to the essence of this interesting conglomeration-phenomenon. So as to avoid methodological difficulties this type of analysis requires data about a financial sector, which has enough institutions that belong or do not belong to conglomerates. In this paper I examine the Hungarian voluntary pension fund market that not only corresponds these needs but has the additional advantage of „producing" the same financial service in every

institution. The relation of the participation in a financial conglomerate and the differences in the efficiency and other characteristics of the examined institutions may better be analysed so. In this way I attempt to clear up which are the fields in the operation of an institution in which financial conglomerates cause significant effects.

The paper proceeds as follows. *Section 2* provides background material on the hypotheses and on the state of financial conglomeration. *Section 3* discusses the methodology, *Section 4* presents the empirical results and finally *Section 5* concludes.

2. Financial conglomeration

Although the exact definition of financial conglomerates is relatively diverse in different papers, there is a consensus that a financial conglomerate realises a kind of cooperation between financial institutions that belong to different sectors. As one of the most influential participant in the regulation of financial activities in developed economies, the Council of the European Union defined in a proposal for a directive financial conglomerates as:[1]

> *„... financial groups that provide services and products in different sectors of the financial markets, called financial conglomerates."*

In the related literature, the definition of financial conglomerates is essentially very similar to the former and it specifies the fields, in which the conglomerates may have activities:[2]

> *„Financial conglomerates are financial institutions that may offer the entire range of financial services. Next to performing the traditional banking operations, they may sell insurance, underwrite securities and carry out security transactions on behalf of their clients."*

The formation of financial conglomerates means a kind of combination of different financial services such as for example banking and insurance. This phenomenon in the financial services sector is in connection with the transformation of the financial intermediation in several developed economies, which has already made feel its impact also in the intermediation theory. According to the registered data in almost every developed financial system, the importance of the traditional intermediary institution (banks, or depository institutions) generally decline or stagnate but new forms of financial institutions such as for example pension funds experience rapid rise. One of the conclusions from this situation can be, that financial intermediaries may be of increasing importance to the economy, but the development of the non-traditional intermediary institutions suggests that other than the traditional functions may be under way to strengthen. As for example *SCHOLTENS-VAN WENSVEEN*[2000] responds to the statements of the intermediation theory of *ALLEN-SANTOMERO*[1997], one of the greatest challenges of future research might be the analysis of the risk-

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[1] Proposal for a directive of the European Parliament and of the Council on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate …

[2] *VANDER VENNET*[1998]

reward relation on the macroeconomic level[3], and particularly the remuneration of the financial intermediation industry for its risk transforming activity. The formation of financial conglomerates is connected with the changes in the financial services industry and can provide an answer to the changing needs for risk management. As *CECCHETTI*[1999] also points out, one of the functions financial intermediation will increasingly have to perform is to *„package and sell risk, or to repackage or resell risk"*, in which process risk can not only intermediated by traditional banking activities but also by means of for example sales to insurance companies.

Empirical evidence suggests that financial conglomerates play an increasingly important role in the financial sector. The cooperation between the participating institutions can have many institutional forms, a special case is when it comes to a merger or an acquisition. Analysing the M&A[4] activities in the banking sector of the European Union, the European Central Bank concluded in a study[5], that *„economies of scope are the predominant motive for domestic conglomeration"*, while for international conglomeration *„the two major reasons are economies of scope and size."* The magnitude of these mergers and acquisitions is however not very extensive but significant. As *LOWN –OSLER-STRAHAN-SUFI*[2000] present: from 1985 to 1999 in the values of targets in financial institutions M&A activity insurance companies that acquired insurance companies represented in Europe 6,4 % (in the United States 8,4 %), while commercial bank that acquired banks represented in Europe 5,2 % (and in the United States 0,1 %). The original question appears here again: why can significant cooperation be observed between different financial institutions such as banks and insurance companies which may lead to the formation of financial conglomerates? The analysis of some large formations which include banks and insurance companies shows, that in certain cases the development of financial conglomerates brought favourable effects for the participating institution. *CAROW*[2001] for example concludes that in the United States – where the closer cooperation of the banking and insurance sector is traditionally hindered by several barriers – investors expect large banks and insurance companies to receive significant benefits from the removal of barriers between the deeper cooperation. The reason for this development may be that financial conglomerates operate for example more efficiently and perform in some cases better than more specialized institutions. Analysing the efficiency and performance of a set of financial conglomerates in Europe, *VANDER VENNET*[1998] concluded that in certain aspects financial conglomerates are more efficient than their more specialized competitors. Together with the result of other studies there seems to be a consensus, that there may be circumstances in which financial conglomerates perform better and operate more efficiently than specialized institutions in the same sectors. In the next section I examine whether in the Hungarian voluntary pension fund market pension funds which can be treated as participants in financial conglomerates differ in selected essential characteristics (such as for example efficiency) from other institutions which do not belong to financial conglomerates.

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[3] Risk analysis – in the modern portfolio theory – has already been fully incorporated on the micro level in pricing models.

[4] Merger and Acquisition

[5] Mergers and acquisitions involving the EU banking industry [2000]

3. Data and methodology

In Hungary, the number of firms in the financial sector – related to the size of the demand – is relatively low compared to countries with greater financial markets, and a tendence towards financial conglomeration can be found especially among the firms with the greatest market power. So as to examine the factors that significantly separate participating and non-participating firms in a special field, I have chosen the market of the Hungarian voluntary pension funds where a more considerable set of data is available for research purposes.

In the Hungarian three-pillar pension system pension funds play an important role in collecting savings to secure the later retirement income of the working population. Pension funds can be founded since 1994, but since the pension reform in 1998 pension funds are also an integrated part of the mandatory pension system and beside the pay-as-you-go first pillar they form its second pillar too. The pension funds, in which the participation remained voluntary, form the third pillar of the pension system by allowing a favourable (also supported by tax allowances) opportunity to collect savings for a supplementary retirement income. In this paper I only examine voluntary pension funds, because though the operation and the related regulations of the mandatory and voluntary pension funds are quite similar, the differences and similarities of these two groups are worth analysing separated. Some of the voluntary pension funds were funded and are operated by a bank or an insurance company and can be treated as parts of financial conglomerates.

For the analysis I collected data from publicated financial statements of the pension funds for 1999 and 2000. From the balance sheets and income statements and other publicated data of the voluntary pension funds I calculated different variables, that contain information about the efficiency and performance of the funds. The selected 17 variables were constructed in a way, that possibly every important aspect of the operation of the funds are represented and the dependence between variables is minimized. The variables were calculated for every registered voluntary pension fund in Hungary, but because of inconveniences in the interpretation of the values at some observations, a part of the data was excluded from the analysis (the number of funds in the analysis was reduced to 89).

To analyse the structure of the voluntary pension fund market I used multidimensional statistical methods: factor and cluster analyses were applied to recognise relatively homogeneous groups in the data and discriminant analyses and ANOVA-analyses were employed to identify the effects of the participation in a financial conglomerate on the efficiency and performance of the funds. In the interpretation of the following results is however important that in most cases there are requirements that the data does not meet: the assumptions of normal distribution of the variables and the identity of the covariance matrices in different groups in the discriminant analyses are violated and in consequence the numerical results have to be treated in most cases only as indicators of different tendencies. But as indicators, the validity of the conclusions is not violated where the analysis results in an extremely significant outcome, in this case we have a meaningful result, that will also be emphasised in the related parts of the following sections.

4. Hypotheses and empirical results

Based on the collected data and selected variables I examine some hypotheses about the effect of the participation in a financial conglomerate on the efficiency and performance of different voluntary pension funds in Hungary.

HYPOTHESIS 1.:

PENSION FUNDS, THAT PARTICIPATE IN FINANCIAL CONGLOMERATES REPRESENT SIGNIFICANTLY GREATER MARKET POWER[6].

To test this hypothesis I used first a discriminant analysis with all the 17 variables, that resulted (since we examine the separation of two groups: participating and non-participating funds) in one discriminant function.[7] The conclusions about the separation of the groups can be drawn from the strength of the correlation between the discriminant function and the selected variables. The analysis showed, that the four variables, whose correlations with the discriminant function was greater than 0.5, measured in some form the market power of the funds (for example membership and accumulated savings). The following values are taken by the discriminant function at the group centroids (*P.CSOP. = 1* means the group that is formed by the funds which participate in financial conglomerates):

P.CSOP. = 0	-0.59
P.CSOP. = 1	3.82

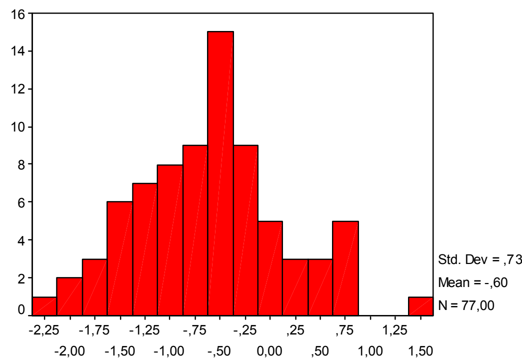
The values show a significant separation, and because the analysis is based on standardized data, the results also indicate that the funds which participate in financial conglomerates are clearly over the average size (in the case of standardized variables this means 3.82 is above zero). The same results appear in the histograms of the discriminant function in the two groups, on the following graphs a visible separation of the groups can also be observed:

[6] Market power refers here to characteristics and variables such as for example membership and accumulated savings in the pension funds.

[7] The theoretical background for the discriminant analysis is, that taken the (standardized) database X we attempt to maximize $\lambda=c^TKc / c^TBc$ in c so that $y=Xc$, $c^Tc=1$, $y^Ty=c^TX^TXc=c^TTc=c^TKc+c^TBc$.
From the solution $(B^{-1}K - \lambda E)c=0$ we obtain λ and c from which we can calculate discriminant functions that optimally separate the given groups. The number of the discriminant factors depends on the number of the variables and the number of the groups, but in this analysis it cannot be greater than 1 (because $B^{-1}K$ has only 2-1=1 eigenvalues).

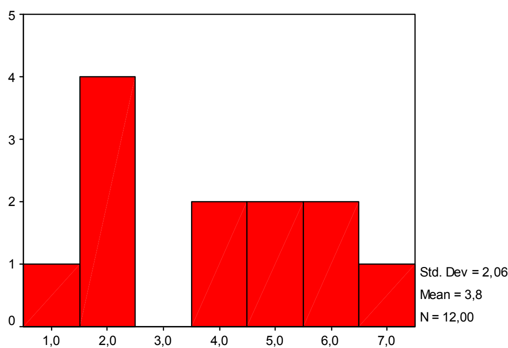
Canonical Discriminant Function 1

P.CSOP. = 0



Canonical Discriminant Function 1

P.CSOP. = 1



An other method to test the hypothesis is to apply a factor analysis to the 17 selected variables and make a one-way ANOVA analysis with the factor that represents „market power"[8] and the two groups. After running 7 different factor analyses it came out that there exists a factor that shows high correlations with the variables that measure market power and practically no correlations with other variables. In the one-way ANOVA analysis differences from the group means and the general mean are measured and with sum of squares can be observed, to what extent the total sum of squares is explained by the different group means. In this case, for the „market power" factor and the two groups the following results are obtained:

	Sum of squares	***df***	***F***	***sig.***
Between groups	47.20	1	100.68	**0.00**
Within groups	40.79	87		

Though the results – in consequence of the mentioned lacking requirements – cannot be numerically interpreted, the tendence is clear: it is visibly that the funds which belong to financial conglomerates represent significantly greater market power.

[8] In the sense defined above: market power refers to characteristics such as for example membership and accumulated savings in the pension funds.

After all, *Hypothesis 1.* can be accepted: that means, that pension funds which belong to a financial conglomerate represent among pension funds relatively greater market power: they have a greater membership or for example a greater amount of capital accumulated from the members. The ANOVA-analysis only suggests that there is a significant difference between pension funds that participate in financial conglomerates and other pension funds that do not have a financial conglomerate background. A further analysis is required to show the direction of the difference: the values of the discriminant function at the two group centroids (participating and not participating funds) suggest that the measure of „market power"[9] takes at pension funds which belong to financial conglomerates values that are significantly above the average (3.82 > 0), while at other funds taking values below the average (–0.59 < 0).

HYPOTHESIS 2.:

PENSION FUNDS, THAT PARTICIPATE IN FINANCIAL CONGLOMERATES ARE MORE (OPERATION) COST-EFFICIENT.

In this analysis I examined operation cost efficiency, that is related to cost items such as for example wages and amortization. In the literature „cost efficiency" is often referred to, now I would like to show that there are different groups of costs and efficiency can not automatically expected at every category.

Among the selected 17 variables 2 are related to cost efficiency (operation costs/all assets and operation costs/a variable that measures the changes in revenues). These two variables correlate at a relatively low level with the discriminant factor (the correlation ratios are –0.045 and –0.068, respectively), which means that in the separation of the two groups (participating and non-participating funds) they play an insignificant role.

In the factor analyses a factor that shows high correlation with these two variables and no significant correlation with other variables could also be found. This „operation cost efficiency" factor produced in the one-way ANOVA analysis similar results; it showed that in the two groups (participating and non-participating funds) there is no significant difference in the operation cost efficiency:

	sum of squares	*df*	*F*	*sig.*
Between groups	0.30	1	0.29	**0.58**
Within groups	87.69	87		

The results show that the means of the two groups can be treated relatively significantly identical.

Based on these results *Hypothesis 2.* is rejected: which means that the cost efficiency of pension funds which belong to financial conglomerates can statistically

[9] The values of the created „factor", which has strong relationship with factors that measure for example membership and accumulated savings.

not be treated as different from that of other funds. The analysis showed, that statistically there is no significant difference in the operation cost efficiency of the two types of funds.[10]

HYPOTHESIS 3.:

THE INVESTMENT PRACTICE OF PENSION FUNDS, THAT PARTICIPATE IN FINANCIAL CONGLOMERATES IS MORE CONSERVATIVE.

In this analysis investment practice is treated as conservative, when in the investments the focus is rather on less riskier bonds than on more riskier stocks. In the 17 variables there are three that measure the conservativeness of the investment policy and in the testing of the hypothesis I use these individual variables, since in the factor analyses no factor could be constructed that would have contained a large enough part of the information in these variables.

In the discriminant analysis the correlations of the three variables with the discriminant factor are not significant (their absolute value is under 0.1), which means that they do not play an important role in the separation of the two examined groups. In the one-way ANOVA analyes the same results appear: none of these variables takes significanly different values at the participating and non-participating funds, which also means that the investment practice of funds that participate in financial conglomerates is not significantly differ from that of other funds.

After all, *Hypothesis 3.* is rejected: it can not be stated that there is any statistically significant difference in the investment structure (conservativeness) between pension funds which belong to a financial conglomerate and pension funds that do not have a financial conglomerate background. The results of the analysis are more general than the hypothesis: they not only suggest that the investment practice of funds belonging to financial conglomerates is not more conservative than that of other funds, but they also show that the investment practice can not be treated as less conservative. The essence of the results is, that the investment practice of the two types of pension fund can statistically not be declared as different.

HYPOTHESIS 4.:

IN THE COST STRUCTURE OF PENSION FUNDS, THAT PARTICIPATE IN FINANCIAL CONGLOMERATES ADMININSTRATIVE COSTS PLAY A MORE CONSIDERABLE ROLE.

Among the cost items, administrative costs are in the analysis of special interest, because these may be related to the participation in a financial conglomerate. For the testing of the hypothesis I constructed a variable that measures the proportion of administrative cost in the operation costs.

[10] Had the analysis showed that there is a difference between funds which belong to financial conglomerates and other funds that do not belong to financial conglomerates, it would have made sense to examine further which would have been the direction of the difference (which type of pension funds would have been more operation cost efficient).

In the discriminant analysis this variable shows – beside the variables that represent „market power" – the highest correlation with the discriminant function (the correlation is 0.26, it is however relatively low). The one-way ANOVA analysis shows following results:

	sum of squares	*df*	*F*	*sig.*
Between groups	12.14	1	13.75	**0,00**
Within groups	76.85	87		

The results mean, that the examined variable takes significantly different values in the two groups (participating and non-participating funds), but since the distribution of the variable cannot be considered as normal and the F-value is not extremely high, the results have to be interpreted cautiously. The group means in the two groups are however relatively different (0.93 at the funds with a financial conglomerate background and –0.14 at the other funds). The ANOVA analysis shows, that the two types of pension funds can not be treated as identical and the values of the group means show, that pension funds which belong to a financial conglomerate are generally above the average (0.93 > 0), while other funds are generally below the average (–0.14 < 0).

Based on these results, *Hypothesis 4.* can be accepted: that means, that it can be treated as a significant result, that in pension funds which participate in a financial conglomerate administrative costs play in the cost structure a more considerable role.[11]

<u>HYPOTHESIS 5.:</u>

IN THE COST STRUCTURE OF PENSION FUNDS, THAT PARTICIPATE IN FINANCIAL CONGLOMERATES MEMBERSHIP RECRUITMENT COSTS PLAY A MORE CONSIDERABLE ROLE.

In the literature one of the most interesting questions is, whether financial conglomerates can attain efficiency by using among others their brand name and existing infrastucture (for example branch network) of one entity at another entity of the conglomeration. Membership recruitment costs represent cost items, that are related to this phenomenon, it is very interesting, whether there exist differences in this field between the participating and non-participating funds.

Among the 17 selected variables there is a variable that measures the proportion of the membership recruitment cost in the operation costs. In the one-way ANOVA analysis the results show *F=6.34* that implies *sig.=0.01*, that means – considering that the distribution of the examined variable cannot be treated as normal – no significant

[11] These results show unambigously that the examined cost items (administration costs) play a relatively more considerable role, since the group means in funds with a financial conglomerate background are above the average.

difference between the two groups, which means that the group means can be treated as identical in the statistical sence (neither of them can be seen as bigger or smaller than the other).

After all, *Hypothesis 5.* is rejected: that means, that according to the data and regarding the membership recruitment costs among the operation cost items, there is no significant difference between the funds that participate in financial conglomerates and other funds that do not belong to financial conglomerates. This hypothesis posed the question, whether membership recruitment costs play a more considerable role in the cost structure of pension funds that belong to financial conglomerates; the analysis showed that there is statistically no difference between the two types of funds (which participate and do not participate in financial conglomerates).[12]

5. Conclusions

After analysing the structure of the Hungarian voluntary pension fund market two different groups seem to be separated: the one contains pension funds with average characteristics and low market power constructing a relatively homogeneous group while the other heterogeneous group containing the other funds. The members of the heterogeneous group are mostly participants in financial conglomerates. The differences of the funds belonging to financial conglomerates appear only in few characteristics: these funds represent significantly greater market power but regarding other characteristics (for example efficiency) the analysis showed no persuasive advantage of the funds that participate in financial conglomerates.

[12] These results also mean, that the reverse hypothesis could also have been rejected: according to the data not only can not be stated that membership recruitment costs play a more considerable role in the cost structure of pension funds that belong to financial conglomerates, but it can also not be declared that membership recruitment costs play a less considerable role in the cost structure of pension funds participating in a financial conglomerate.

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