THE IMPACT OF CORPORATE GOVERNANCE DIMENSIONS ON FINANCIAL STRUCTURE OF THE COMPANIES IN DEVELOPING COUNTRIES

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Abstract:

Corporate governance represents a current topic for academic community and practitioners, in the context of globalization and crisis, especially in case of developing countries.

The main purpose of this paper is to analyze which dimensions of corporate governance are able to exercise a significant impact on the companies' financial structure, using a dataset with 77 developing countries from Africa, Asia, Latin America and Central and Eastern Europe. The data are provided from World Bank Enterprise Survey website and the variables are grouped in two directions: corporate governance and financial structure variables. In this regard, using principal components analysis approach, we grouped firstly the variables related to financial structure and then variables related to the main four dimensions of corporate governance, such as ownership structure and management quality, transparency, environment and corruption.

The impact of corporate governance dimensions on companies' financial structure was analyzed in a generalized linear model framework and the main result of this paper consists in the fact that, for analyzed countries, companies' financial structure is significantly influenced by several dimensions of the governance like transparency, environment or corruption.

Keywords: *corporate governance, financial structure*

JEL Classification: *G32, G34*

1. Introduction

In last decades, after the consecration of some specific corporate governance models in case of developed countries, the analysts' attention was focused on the concept of corporate governance in developing countries. As well, after the global financial crisis, a growing area in field of financial research is represented by the attempts to identify possible solutions to minimize risk of financial default. In this regard, we consider that is important to identify the possible linkage between corporate governance dimensions and financial structure of the companies. In this way, each stakeholder of a company is representative for at least one of the governance dimensions and can influence a significant impact on that company's capital structure. For example, if we discuss about the case of ownership structure and rights - which is a very popular dimension of the corporate governance in the literature - Boţoc (2014: 846) reminds that investors are not rewarded for the total risk of their investment and rather for the systematic risk. Thus, we can assume that they are able to influence the company's financial decisions, even if they are owners or creditors. Also, discussing about corporate governance quality and financial structure Dima et al. (2013: 170) mentioned that different stakeholders groups may be involved in choosing the financial structure of the companies, in order to maximize the company's market value.

In the literature, Morellec et al. (2010: 1) mentions the possibility that the capital structure of a company can be determined not only by several real market frictions like taxes, bankruptcy costs or refinancing costs, but also by some aspects like incentive conflicts between managers and owners. Godfred & Arko (2009) show that managerial shareholding is able to influence the choice of long-term debt over equity and also, the board size was found to be statistically significantly and positively related to capital structure choices. Other authors (Ur Rehman et al., 2010) show that in case of Pakistan banking sector is a positive but a week linkage between capital structure and corporate governance

2. Data and methodology

In order to analyze the impact of corporate governance dimensions on financial structure of the companies we made seven indices: one of them express the financial structure and the rest of them describe the corporate governance

main dimensions. These indices were determined for 77 countries from Africa, Asia, Latin America and Central and Eastern Europe. To construct these indicators, the data were provided from World Bank Database (www.enterprisesurveys.org)

The variables included in these indices are varied. In case of financial structure index we used variables like (i) percent of firms with a bank loan/line of credit, (ii) percent of firms using banks to finance investments, (iii) proportion of investments financed by banks, (iv) proportion of investments financed by supplier credit, (v) proportion of investments financed by equity or stock sales, (vi) percent of firms using banks to finance working capital, (vii) proportion of working capital financed by banks, (viii) proportion of working capital financed by supplier credit. In the same time, the corporate governance is described by five dimensions like corporate social responsibility, corruption (criminality), environment, ownership and management quality and transparency.

In this study, to analyze the impact of corporate governance dimensions on financial structure of the companies, we used two different stages. Firstly, using principal components analysis (PCA) we identified the possible grouping configuration between the variables. Secondly, we used the generalized linear models (GLM) framework in order to test the impact of corporate governance dimensions on financial structure index.

The purpose of using the principal components analysis was to cumulate all relevant variables in order to create a global indicator. As Dima et al. (2013: 165) asserted, this method assumes that the co-variation of the variables is due to the presence of one or even more latent variables (named factors) which induce a casual influence on these variables (see for details, Jolliffe 2002). Is important to note that we are expecting that the used variables are highly correlated. In this regard, the method shapes the variance structure of the dataset by using a linear combination of the data. Also, the components represents a linear reunion of the remarked variables and the components score allows to consider the relative importance of individual variables (Dima et al., 2013: 165).

The second direction of the paper was to estimate the impact of corporate governance dimensions on financial structure index and for this we are using the generalized linear model method, which is a model proposed for the first time by Nelder and Wedderburn (1972) as a flexible approach of ordinary least squares regression. In this case, we are using a Poisson distribution, we select a log link function and we assume that Newton-Raphson method is relevant to check the robustness of obtained results.

3. Findings

In Table 1 can be observed the results of principal components analysis in case of financial structure variables. The first section of this table shows some information about the number of retained components, while the second section resumes the eigenvalues. As it can be observed, the first principal component describes 55% of total variance, while the second component contributes with 19% of the variance. In this regard, the first two components explain 74% of the total variance and we are able to build a synthetic information index based on the considered explanatory variables. If we are looking at the second section of this table we can see the linear combination of coefficients in case of the first principal component (which is labeled as "PC1") and we can observe that all the values are positive, being able to consider an indicator which describes the financial structure of the companies.

Table 1. Principal Components Analysis of financial structure variables

Eigenvalues: (Sum = 8, Average = 1)				
Component number	**Value**	**Difference**	**Proportion**	**Cumulative proportion**
1	4.37	2.83	0.55	0,55
2	1.54	0.50	0.19	0,74
3	1.03	0.65	0.13	0,87
4	0.38	0.07	0.05	0.92
5	0.31	0.12	0.04	0.96
6	0.18	0.06	0.02	0.98
7	0.12	0.10	0.02	0.99
8	0.02	-	0.003	1.00

Eigenvectors (loadings):	
Variable	**PC 1**
Percent of firms with a bank loan/line of credit	0.42
Percent of firms using banks to finance investments	0.41
Proportion of investments financed by banks	0.43
Proportion of investments financed by supplier credit	0.14
Proportion of investments financed by equity or stock sales	0.05
Percent of firms using banks to finance working capital	0.45
Proportion of working capital financed by banks	0.43
Proportion of working capital financed by supplier credit	0.24

Notes: Included observations: 77; Computed using: Ordinary (un-centred) correlations; Extracting 8 of 8 possible components.

In the same manner, in case of variables related to corporate social responsibility we can observe that the first component describes 66% of the variance and together with the second component explain 83% from the total variance of the variables group. As well, PC1 represents a roughly-equal linear combination of these five variables, which allows the construction of a synthetic information index of corporate social responsibility.

Table 2. Principal Components Analysis of corporate social responsibility variables

Eigenvalues: (Sum = 5, Average = 1)				
Component number	**Value**	**Difference**	**Proportion**	**Cumulative proportion**
1	3.32	2.46	0.66	0.66
2	0.85	0.45	0.17	0.83
3	0.40	0.11	0.08	0.91
4	0.28	0.15	0.06	0.97
5	0.13	-	0.03	1.00
Eigenvectors (loadings):				
Variable				**PC 1**
Percent of firms with female participation in ownership				0.38
Percent of firms with a female top manager				0.45
Proportion of permanent full-time workers that are female				0.50
Proportion of permanent full-time production workers that are female				0.45
Proportion of permanent full-time non-production workers that are female				0.45

Notes: Included observations: 77; Computed using: Ordinary (un-centred) correlations; Extracting 5 of 5 possible components.

To construct an index for corruption we applied the same procedure and the results can be observed in Table 3. The first principal components accounts 67% of the variance and the second one contributes with 10% if the group variance, which allows to consider this output legitimate to build a synthetic information index about corruption. As well, the second section of the table is a roughly-equal linear combination of all eleven used variables.

Table 3. Principal Components Analysis of corruption (criminality) variables

Eigenvalues: (Sum = 11, Average = 1)				
Component number	**Value**	**Difference**	**Proportion**	**Cumulative proportion**
1	7.39	6.33	0.67	0,67
2	1.06	0.15	0.10	0,77
3	0.90	0.54	0.08	0,85
4	0.36	0.04	0.03	0.88
5	0.32	0.03	0.03	0.91
6	0.30	0.08	0.03	0.94
7	0.22	0.04	0.02	0.96
8	0.18	0.05	0.02	0.98
9	0.13	0.06	0.01	0.99
10	0.07	0.07	0.01	0.99
11	0.01	-	0.001	1.00
Eigenvectors (loadings):				
Variable				**PC 1**
Bribery incidence (percent of firms experiencing at least one bribe payment request)				0.36
Bribery depth (% of public transactions where a gift or informal payment was requested)				0.36
Percent of firms expected to give gifts in meetings with tax officials				0.32
Percent of firms expected to give gifts to secure government contract				0.27
Value of gift expected to secure a government contract (% of contract value)				0.21
Percent of firms expected to give gifts to get an operating license				0.31
Percent of firms expected to give gifts to get an import license				0.32
Percent of firms expected to give gifts to get a construction permit				0.32
Percent of firms expected to give gifts to get an electrical connection				0.33
Percent of firms expected to give gifts to public officials "to get things done"				0.31
If there were losses, average losses due to theft and vandalism (% of annual sales)				0.15

Notes: Included observations: 77; Computed using: Ordinary (un-centred) correlations; Extracting 11 of 11 possible components.

Another direction of corporate governance which was analyzed describes environment (Table 4). In this sense, can be observed that the first principal component explain 54% of the total variance, while the second one describe 11% from the group variance. With a total cumulative proportion of 65% for these two components, we are able to consider a information synthetic index in case of environment variables. Moreover, the second section of this table reveals that first component is a roughly-equal linear combination of these variables, all of the values being positive and most of them around 0.25.

Table 4. Principal Components Analysis of environment variables

Eigenvalues: (Sum = 14, Average = 1)				
Component number	**Value**	**Difference**	**Proportion**	**Cumulative proportion**
1	7.52	5.96	0.54	0,54
2	1.56	0.38	0.11	0,65
3	1.18	0.19	0.09	0,74
4	0.98	0.37	0.07	0.81
5	0.61	0.14	0.04	0.85
6	0.47	0.10	0.03	0.88
7	0.37	0.08	0.03	0.91
8	0.29	0.03	0.02	0.93
9	0.26	0.08	0.02	0.95
10	0.18	0.01	0.01	0.96
11	0.17	0.03	0.01	0.97
12	0.14	0.03	0.01	0.98
13	0.11	0.03	0.01	0.99
14	0.09	-	0.01	1.00
Eigenvectors (loadings):				
Variable				**PC 1**
Percent of firms identifying crime, theft and disorder as a major constraint				0.29
Percent of firms identifying access to finance as a major constraint				0.26
Percent of firms competing against unregistered or informal firms				0.22
Percent of firms identifying practices of competitors in the informal sector as a major constraint				0.28
Proportion of electricity from a generator				0.14
Percent of firms identifying electricity as a major constraint				0.26
Percent of firms identifying transportation as a major constraint				0.30
Percent of firms identifying tax administration as a major constraint				0.27
Percent of firms identifying business licensing and permits as a major constraint				0.28
Percent of firms identifying customs and trade regulations as a major constraint				0.27
Percent of firms identifying labor regulations as a major constraint				0.25
Percent of firms identifying an inadequately educated workforce as a major constraint				0.27
Percent of firms identifying corruption as a major constraint				0.32
Percent of firms identifying the courts system as a major constraint				0.28

Notes: Included observations: 77; Computed using: Ordinary (un-centred) correlations; Extracting 14 of 14 possible components.

Table 5 shows the result of principal component analysis in case of the variables related to ownership and management quality. As it can be seen, the first principal component express 49% of the variation and together with the second component they describe 78% from the total variance of the group. The second section of the quoted table shows that all of these three variables have values around 0.6. In this regard, we considered that we can construct an informational index which expresses ownership structure and management quality.

Table 5. Principal Components Analysis of ownership and management quality variables

Eigenvalues: (Sum = 3, Average = 1)				
Component number	**Value**	**Difference**	**Proportion**	**Cumulative proportion**
1	1.47	0.60	0.49	0.49
2	0.87	0.21	0.29	0.78
3	0.66	-	0.22	1.00
Eigenvectors (loadings):				
Variable				**PC 1**
Percent of firms with legal status of publicly listed company				0.50
Percent of firms with legal status of privately held Limited Liability Company				0.65
Years of the top manager's experience working in the firm's sector				0.58

Notes: Included observations: 77; Computed using: Ordinary (un-centred) correlations; Extracting 3 of 3 possible components.

The last corporate governance dimension which has been studied in this paper is represented by the informational transparency. The Table 6 shows that the first principal component accounts 67% of the total variance and the second one 29% of the variance. Thus, with a cumulative proportion of 96% in case of first two components we are able to construct an information index in order to describe transparency.

Table 6. Principal Components Analysis of transparency variables

Eigenvalues: (Sum = 3, Average = 1)				
Component number	**Value**	**Difference**	**Proportion**	**Cumulative proportion**
1	1.99	1.12	0.67	0.67
2	0.87	0.73	0.29	0.96
3	0.14	-	0.04	1.00
Eigenvectors (loadings):				
Variable				**PC 1**
Percent of firms having their own Web site				0.64
Percent of firms with an annual financial statement reviewed by external auditors				0.36
Percent of firms using e-mail to interact with clients/suppliers				0.68

Notes: Included observations: 77; Computed using: Ordinary (un-centred) correlations; Extracting 3 of 3 possible components.

In the same manner we can observe that in case of the variables related to bureaucracy the first component accounts 54% of the total variance of the variables groups, while the second component describe 39% of the variance. The PC1 offers positive and comparable values for the entire variable used and permits to use this component in order to construct a synthetic information index.

Table7. Principal Components Analysis of bureaucracy variables

Eigenvalues: (Sum = 4, Average = 1)				
Component number	**Value**	**Difference**	**Proportion**	**Cumulative proportion**
1	2.14	0.59	0.54	0.54
2	1.54	1.29	0.39	0.93
3	0.25	0.19	0.06	0.99
4	0.06	-	0.01	1.00
Eigenvectors (loadings):				
Variable				**PC 1**
Number of visits or required meetings with tax officials				0.60
If there were visits, average number of visits or required meetings with tax officials				0.60
Days to clear direct exports through customs				0.26
Days to clear imports from customs				0.45

Notes: Included observations: 77; Computed using: Ordinary (un-centred) correlations; Extracting 4 of 4 possible components.

The results of applying principal component analysis in case of workforce variables can be observed below. Thus, the first component describe over a half from the total variance of the variables related to this direction – 52%. Moreover, the cumulative proportion of first two components is 81%, which allows us to construct an index of workforce quality. In the second part of the table can be seen that is encountered a roughly-equal linear combination of these three variables.

Table 8. Principal Components Analysis of workforce variables

Eigenvalues: (Sum = 3, Average = 1)				
Component number	**Value**	**Difference**	**Proportion**	**Cumulative proportion**
1	1.55	0.69	0.52	0.52
2	0.87	0.30	0.29	0.81
3	0.57	-	0.19	1.00
Eigenvectors (loadings):				
Variable				**PC 1**
Inadequately educated workforce				0.50
Number of permanent full-time workers				0.57
Percent of firms offering formal training				0.66

Notes: Included observations: 77; Computed using: Ordinary (un-centred) correlations; Extracting 3 of 3 possible components.

In order to test the impact of corporate governance dimensions on financial structure index we used two financial control variables as proportion of loans requiring collateral and proportion of investments financed internally. As it can be seen in Table 9, the estimated coefficients are statistical significant at 1% in case of environment index and also for the financial control variable that were included in analyze. In the same time, another governance dimension with a statistical significance on financial structure is transparency, which is significant at 10%.

Table 9. GLM estimation of corporate governance dimensions impact on financial structure

	Dependent variable: financial structure indicator
Corruption	-0.198** (0.094)
Environment	0.216*** (0.076)

Ownership	0.271 (0.188)
Transparency	0.343* (0.220)
Bureaucracy	-0.052 (0.164)
CSR	0.018 (0.111)
Workforce	0.159 (0.198)
Proportion of loans requiring collateral (%)	0.041*** (0.011)
Proportion of investments financed internally (%)	-0.047*** (0.013)
Number of observations	77
Pearson SSR	141.39
Log likelihood	-132.66
Modified Akaike Information Criterion	3.68
Bayesian Information Criterion	-153.99
Pearson statistic	2.08

Notes: ***, **, and * represent statistical significance at 1%, 5%, and 10% level

Generalized Linear Model a) *Family*: Poisson; b) Link function: Log; c) Optimization algorithm: *Newton-Raphson*

As well, corruption has a negative coefficient and is statistical significant at 5%, this situation can be explained by the fact that a high level of corruption (criminality) affects negatively the company's governance and its financial structure.

4. Conclusions

In this paper was tested the possible impact of several corporate governance dimensions on the companies' financial structure. This study was carried out using a large specific dataset covering a number of 77 developing countries from Africa, Asia, Latin America and Central and Eastern Europe. Thus, the main findings of this paper are that the financial structure of the companies can be influenced by several dimensions of corporate governance like transparency, environment or corruption. In other words, the variables related to transparency and environment affects positively financial structure of the companies in analyzed countries, while corruption (criminality) have a negative impact in choosing the right financial structure for those companies.

In the final part of this study, we conclude that this work can be expanded and can support several developments in the future. Thus, further papers may consider also other dimensions of corporate governance or can enlarge the area of countries and variables included in analyze. As well, further studies can analyze this linkage in a specific area, for example by testing this impact in a single continent or in relation with another one.

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