CORPORATE GOVERNANCE AND ECONOMIC PERFORMANCE IN ITALIAN LISTED FIRMS

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ABSTRACT

The goal of the research is about the possibility to find a relationship between corporate governance and economic performances through the analysis of the impact of some governance elements (like directors gender, dependent/independent and executive/non-executive directors, number of other offices, etc) over the economic performance and financial structure of the firms. Through the use and the analysis of a simple instrument like the Pearson Correlation Coefficient we tried to find out any possible assessment of correlation among the examined variables.

The research analyses data from 148 Italian Companies (i.e. listed on the Italian Stock Exchange) for five years (2006-2010). In order to dig deeper in the analysis, we divided the firms of the sample in sectors of activity. Inside each sector we analysed the economic performance and we compared the single firm with the average values of the sector. Inside each sector we expect to find a higher level of homogeneity, with positive effect over the correlation between the variables considered.

The first conclusion is that if the sample as a whole present too high levels of variability that do not present clear correlation evidence, considering sectors some evidence may appear. At least we could say which are the variables that requires more attention.

Keywords: Corporate governance, Economic Performance, Ownership Structure.

THEORETICAL BACKGROUND

The role attributed to corporate governance in recent decades has undergone significant evolution that is effectively summed up in the following definitions: [Governance is] "the process of supervision and control intended to ensure that the company's management acts in accordance with the interests of shareholders" ("Cadbury Report. The Financial Aspects of Corporate Governance", Financial Reporting Council, United Kingdon, 1992); "the governance role is not concerned with the running of the business of the company per se, but with giving overall direction to the enterprise, with overseeing and controlling, the executive actions of management and with satisfying legitimate expectations of accountability and regulation by interests beyond the corporate boundaries" (Tricker 1984).

Subsequently, with specific reference to the last ten years, the theme of corporate governance has been the subject of great interest by management studies and a great deal of research on the characteristics of boards of directors (Daily, Dalton e Cannella, 2003) and of the control bodies and the ways in which they function.

The Board of Directors is the highest management level in a company; the Board should run the company according to the decisions and the objectives decided by the

assembly of the stockholder, facing the problems of the activity of the firm that take place day by day, considering also the different opinions of all the stakeholder[1].

The function of control is not the only thing the Board of Directors is accountable for. The board in fact also represents a source for the company's legitimisation towards the outside (Hillman et al. 2000), which might benefit from greater ease of access to the resources through the network activated by the individual board members. Other studies (Judge and Zeithaml, 1992; Stiles, 2001) underline the contribution of the board of directors to the strategic management of the company, i.e. its function of support and consultancy, that takes its form in the participation in the strategic decision making process and in active co-operation in the definition of company strategies.

In particular the instruments are influenced by the guidelines that mainly go through the corporate lines of governance defined by the organs, by the people involved and by the procedures that codify the guidelines into concrete managerial actions.

Many empirical studies tried to analyse the relationship between corporate governance and firm performance. Some of them (Black 2001, Black 2005, Durnev and Kim 2005) focused their attention on the positive relation between corporate governance and firm value. Black showed that unsatisfying economic performances are usually linked with an increase in the number of independent members of the Board of Directors.

According to Hambrick and Mason (2005) there is a link between the board and the organizational structure as they consider the Board as the "top management team" that have a social and organizational impact on the structure of the company[2].

Some studies derived from the first work of Yermak (1996) showed some evidence about a negative correlation between profitability and Board of Directors dimension, but, considering that this dimension could be considered an endogenous variable, there is no clear and strong evidence about this correlation. It is not clear if the dimension of the Board is the cause or the effect of the connected level of profitability.

RESEARCH DESIGN ANF METHODOLOGY

The research analyses data from 148 Italian Companies (i.e. listed on the Italian Stock Exchange) for five years, between 2006 and 2010 (as we will explain later, for the analysis inside some specific sectors we considered six years: from 2005 to 2010). The analysis is focused on the most important corporate governance data and information of the sample, considering mainly:

- corporate governance models (control and ownership structure)
- Directors gender
- dependent/independent and executive/non-executive members of the Board
- number of other offices for each Director of the Board
- attendance at the meeting

The research question is about the possibility to asses that there is a relationship between corporate governance and economic performances. In other words we tried to analyse the impact of some governance elements and datas over the economic performance and financial structure of the firms. With a simple regression model and the analysis of the Pearson Coefficient we tried to find out any possible assessment of correlation among the examined variables. And also, the possible development of the research could be carried on by analysing the same relationship between corporate governance and economic performance under an international perspective, considering samples of companies listed in different Countries, trying to analyse whether is possible to determine a corporate governance model "best in class".

RESULTS AND DISCUSSION

The primary objective is to find out the relationship between different topics and items of corporate governance and the economic and financial performance of the company of the sample.

For the analysis of the corporate governance aspects of the firms considered in the sample the following aspects had been deeply examined:

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[1] Cfr. Ferrero G. (1980), Impresa e Management, Giuffrè, Milano

[2] Hambrick D., Mason A., (2005), Institutional Governance Systems and Variations in National Competitive Advantage: an integrative frame work, in Academy of Management Journal, Vol. 30, n. 4, pag. 823-842
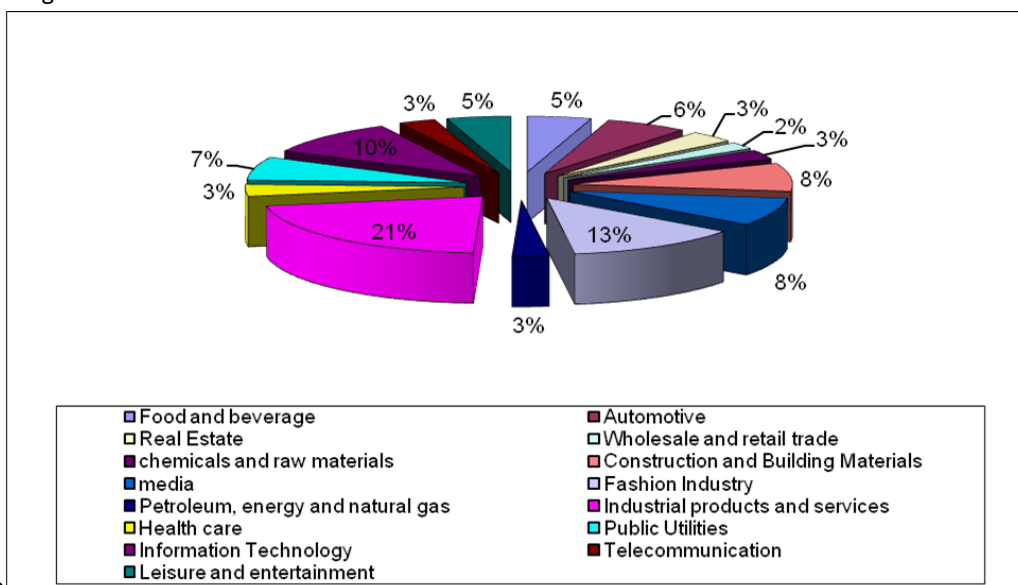
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- corporate governance models (control and ownership structure)
- Directors gender
- size (number of members) of the Board
- dependent/independent members of the Board
- executive/non-executive members of the Board
- number of other offices for each Director of the Board
- attendance at the meeting
- number of meeting

In order to dig deeper in the analysis, we divided the firms of the sample in groups (sectors) according to their activity. Inside each sector we analysed the economic performance of each firm and we compared the single firm performance and characteristics with the average value of the sector. Inside each sector we expect to find a higher level of homogeneity, with positive effect over the regression model.

The sectors used to group the firms of the sample are the 15 sectors suggested by Borsa Italiana. In detail, those are:

1) petroleum, energy and natural gas;
2) chemicals and raw materials
3) Construction and Building Materials
4) Industrial Products, Technologies and services
5) Food and Beverage
6) Fashion Industry
7) Health Care
8) Wholesale and retail trade
9) Media
10) Leisure, Arts, Entertainment, and Recreation
11) Telecommunication
12) Public Utilities
13) Technologies
14) Real Estate

15) Automotive
16)

our sample, we do not consider the financial and insurance activities for many reasons. First of all this area had specific rules and laws, both from managerial and from accounting point of view. Also the financial statements of financial and insurance companies have a different scheme and different accounting principles, according to the Law, the local GAAP and the IAS/IFRS.

On the other hand, this sector has such specific characteristic and such a high level of complexity that deserve a more specific and deeper analysis on its own.

The firms have been divided in sectors in the following way:

- petroleum, energy and natural gas: 3% of the sample
- chemicals and raw materials: 3% of the sample
- Construction and Building Materials: 8% of the sample

[17]

- Industrial Products, Technologies and services: 22% of the sample
- Food and Beverage: 5% of the sample
- Fashion Industry: 13% of the sample
- Health Care: 3% of the sample
-
- Wholesale and retail trade: 2% of the sample
- Media: 8% of the sample
- Leisure, Arts, Entertainment, and Recreation: 5% of the sample
- Telecommunication: 3% of the sample
- Public Utilities: 7% of the sample
- Technologies: 10% of the sample
- Real Estate: 3% of the sample
- Automobiles: 6% of the sample

For each firm of the sample we analysed information and datas from the AIDA database, from the database of Borsa Italiana and from the disclosure (mainly financial statements, explanatory notes, websites and press release) of each firm. The AIDA database of the Bureau van Dijk provides mainly the detailed accounts (scheme of the 4th Directive CEE), company financials and financial strength indicators and ratios.

For each firm we considered all the needed information and datas for five years: from 2006 to 2010.

Other sources of information used to build our worksheet are:

- CONSOB
- ASSONIME
- Borsa Italiana (Italian Stock Exchange)
- Osiris

At first we develop an analysis of the sample as a whole, while in a second step a deeper analysis of the five most important (as

	Number	%
Food and beverage	7	5%
Automotive	9	6%
Real Estate	5	3%
Wholesale and retail trade	3	2%
chemicals and raw materials	4	3%
Construction and Building Materials	12	8%
media	12	8%
Fashion Industry	19	13%
Petroleum, energy and natural gas	4	3%
Industrial products and services	32	22%
Health care	5	3%
Public Utilities	10	7%
Technologies	15	10%
Telecommunication	4	3%
Leisure and entertainment	7	5%
TOTAL	**148**	**100%**

number of firm) sectors have been carried on. These five sectors are: Construction and Building Materials, Media, Fashion Industry, Industrial products and services and Technology.

In this paper and in our regression model we analysed the following topics:

1. corporate governance model: in Italy three different corporate governance systems are permitted by law. In the one-tier system – or "monistic" – there is a single board, the board of directors, among whose members is appointed a specific control committee. In the two-tier system – or "dualistic" – there are two different bodies: the management board and the supervisory board. In the ordinary system - that is

applied in the absence of a different explicit selection – there is an administrative body (a Sole Director or a Board of Directors whose members are appointed by the shareholders' meeting) and a Control Body (the Board of Statutory Auditors). We tried also to analyse how many firms chose for a one-tier or a two-tier system instead of the ordinary system.

2. Members of the Board of Directors: we computed the number of the members for each Board of each company of the sample, in order to find out if there is a correlation between the "size" of the Board and economic and financial performance of the firm.

3. Gender of the Board of Directors: since there is a new law regarding the minimum percentage of female members, we computed the number of male and female members of the Board, in order to find out if an higher (lower) percentage of female/male members have some statistical impact on the economic performances.

4. executive/non-executive members of the Board: executive member are manager of the company as well, while non-executive members are not. A certain amount of non-executive members usually is desirable in order to avoid specific conflict of interest among the managers. We wander if this presence in the Board have some effect over the economic performance of the firm.

5. Number of independent Members of the Board: among non-executive members there are some *indipendent directors*, in order to guarantee that the Board will decide and operate according to the firm own interest and sake. For this particular reason is also considered in a positive way as a "best practice" the distinction between the Chairman, that should be a non-executive member of the board, and the CEO, that is the "head" of the management. Many times the Chairman of the Board and the Chief Executive are the same person, that is the so-called CEO duality. We wander if this situation and the number of independent Member have some impact over the economic performance of the firm.

6. Members in more than one Board: we analysed and checked if some members of the Board are Member of the Board in other companies as well. We computed in how many Board the same person is a Member and tried to analyse if this situation has an impact (positive or negative) on the economic performance of the firm.

7. Number of meeting of the Board. We computed the number of meeting of the Board and checked whether an higher number of meeting session has an effect over the economic performance or not.

8. Attendance of the members of the board at the meeting. We computed the number of attendance of the members at the meeting in order to find out if there is a correlation between the attendance (or the absence) of the members and the performance of the firm.

The following step was the definition of the economic performance indicators. Using mainly AIDA database, we analysed both qualitative and quantitative information and datas. For example the age of the firm: we consider the foundation year for each company in order to find out if older company have better or worse economic performance or have specific corporate governance attitude.

Quantitative information should be divided in financial and non-financial. The first ones (financial) are then divided in economic performance indicators (profitability) and financial structure indicators.

Financial structure information considered are:

- Total Assets, that represents the "dimension" of all the resources invested in the company activity, without considering where they come from (equity or liabilities);
- Net Equity, that represent the amount of the capital invested in the company activity by its owner as "full risk".

The economic performance indicators considered are:

- Sales: total amount of sales represents the "dimension" of the business of the company
- Net Income, that is one of the many possible ways to measure the managerial and economic performance of the company
- ROE and ROI: those very well known and widespread ratios presents a measure of the profitability of the company.

In the following table the descriptive statistics and quartiles values for each variable are reported.

Variables	N.	25th	Median	75th	Mean	St. Dev.
ROE	740	0,04699	0,05648	0,12415	0,01792	0,16515
ROI	740	0,01177	0,06019	0,11302	0,05852	0,08775
Total Assets ('000)	740	175,6902	378,9372	1.705,516	4322,317	16.489,09
Net Equity ('000)	740	61,55662	138,1732	573,1391	1.402,1972	5.394,17
Sales ('000)	740	100,0072	276,3764	1.017,114	2.595,239	10.073,71
Net Income ('000)	740	-3,30305	5,443159	50,38465	166,6628	849,9823
Number of Board Member	740	8	9	12	9,872	3
Female Member of the Board	740	0	0	1	0,716	1
Male Member of the Board	740	7	9	11	9,155	3
Executive	740	2	2	3	2,426	1
Non executive	740	5	7	9	7,446	3
Independent	740	3	4	4	3,73	2
Dependent	740	4	6	8	6,142	3
Members in more of one Board	740	1	3	5	3,412	3

As you can easily see from the above table, in the whole sample, the average value of the ROE is 1,79%, while the mean for the ROI is 5,85%. The average number of Board Member is near 10, with less than 1 average woman for each Board (the first woman in a Board appears only in the third quartile). We will develop this analysis considering the evolution and the time-series of some of the most important variables in a period of 5 years (2006-2010). Some more and deeper comments will be reported in the sector analysis.

After this analysis we computed the correlation coefficient for each variable considered, in order to find out if there are any correlations among the variables. In this first part we considered all the companies of the sample for all the years. Only in a second step (described later) we divided the companies in different group according to their activity (as described before).

In **table 1** (correlation matrix) we report the results of the correlation considering all the companies of the sample.

In this first analysis of correlation, we find a positive relationship between the dimension of the Board (number of members) and the number of members that belong to more than one Board at the same time. This relationship appears both in absolute numbers and in percentage. This will suggest that in wider Board there are more members that belongs to more than one Board at the same time.

Considering the sample as a whole, with all the companies of the analysis, there is not a clear and strong correlation between performance indicators and the corporate governance values and indexes.

Also the gender of the members of the Boards does not seem to have any effect over the economic performance of the entire sample. The analysis however points out that the percentage of female members in the Boards is very low, but it should increase very soon, according to new Laws that impose quotas, called "quote-rosa", that will reserve a certain percentage of the Board to female members. According to the European Corporate Governance Report 2011, the "gender diversity" is not the same all over Europe. Only in some Countries there are quotas imposed by Laws. For instance, in France, by 2017 the percentage of women on the Board should be at least 40%.

Although there is not, at this level, any strong evidence of correlation, it is clear that a high level of attention should be paid mainly at the Board dimension, that should be adequate also to the number of independent and female members.

This first level of analysis, as previously explained, considered the whole sample for five years. In this wide sample there is a very high level of variability and changeableness. This could be

one of the many possible explanations for the weak correlations among the variables considered.

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According to this statement, a second step of analysis had been carried on, grouping the companies in different sectors (as previously explained).

In this way, we reduced a lot the level of variability and computed average values that could be compared with the specific performance of each firm of the sector.

In the attached **table 2** are reported the average values for each sector for both the governance and the economic financial indicators.

"Trade" and "Technologies" are the two sectors with the lowest average number of Members in the Board, while "Petroleum" has the highest average value.

In "Media" and in "Automotive", six is the average number of Members that belong to more than one Board at the same time, while in "Technologies" only one Member in each Board attend more than one Board (average value).

Considering the number of female members in the Board, five sectors have an average close to zero, while the highest average value is recorded in "Telecommunication" with two women (average) in each Board.

The average number of meeting of the Board every year runs from eight to eleven ("Health Care").

The participation of the Members at the Meeting Sessions is quite high. It runs from 82% (the average members attendance to the meetings in "Leisure" Sector) to 92% (in "Petroleum", "Chemical" and "Media").

Focusing our analysis only on a group of sectors, we considered the time evolution of some of the considered variables. The results are reported in the attached **table 3**.
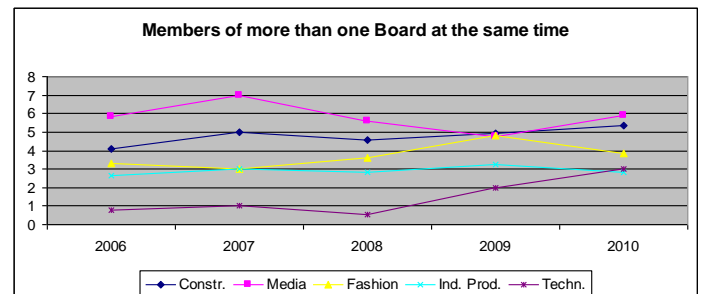
Members of more than one Board at the same time

The graph above shows the evolution in the last five years (2006-2010) of the average number of Members that belong to more than one Board at the same time, for five Sectors.

Female Board members
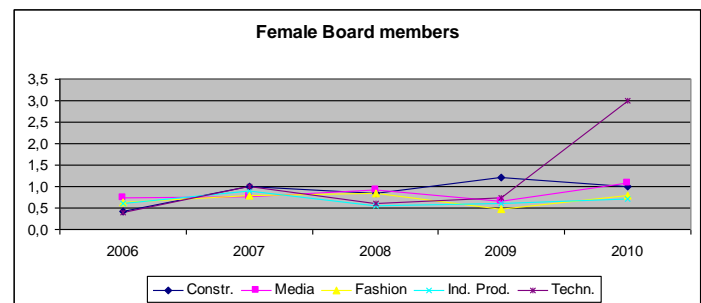
In the graph above is reported the evolution in the last five years (2006-2010) of the average number of women on the Board of five Sectors.

SALES ('000 €)
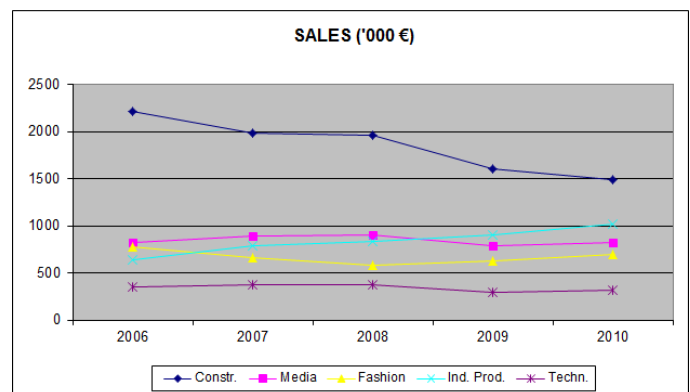
In the graph above is shown the evolution of the average level of sales (in '000 of Euro) in the last five years for the five sectors selected. A certain reduction from 2008 could be easily connected with the negative economic cycle and the international crisis and economic slowdown.

Average number of Board Members (time series)
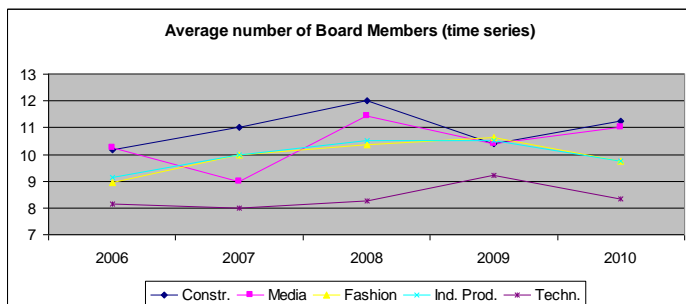
The graph above shows the evolution in the last five years (from 2006 to 2010) of the average dimension of the Board for five Sectors.
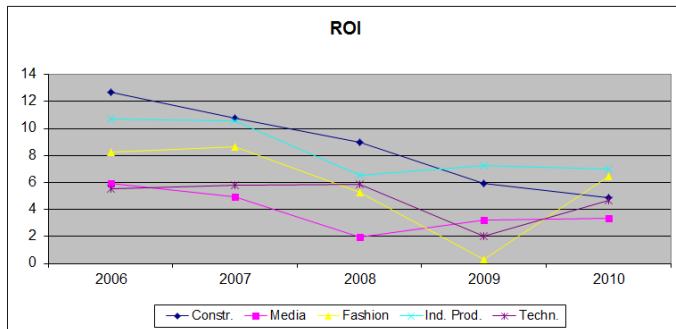
In the graph above is reported the trend of ROI (average for each sector). From 2006 the five considered sectors reported a reduction of the average level of their Return on Investment.

After this time-series analysis, for the five sectors considered (Construction, Media, Fashion, Technology and Industrial Product) we computed the correlation coefficient among the variables in order to find out if there could be any possible relationship between the corporate governance structure and the firms performance.

In **table 4** the descriptive statistics for the four considered sectors are reported, considering only the governance variables. Numbers reported in table 4 refer to the observation of the firms in each sector for five years. As we can see, there is quite a difference among the sectors, for example considering the percentage of members that belong at the same time to more than one Board, the value runs from 19,6% of the Construction to 33,65% of Industrial Product.

Also the percentage of women on the Board runs from 3% in the Media Sector to 9% in the Industrial Product. This data is compatible with the results of the European Corporate Governance Report 2011 that computed for Italy an average percentage of women on the board close to 3%.
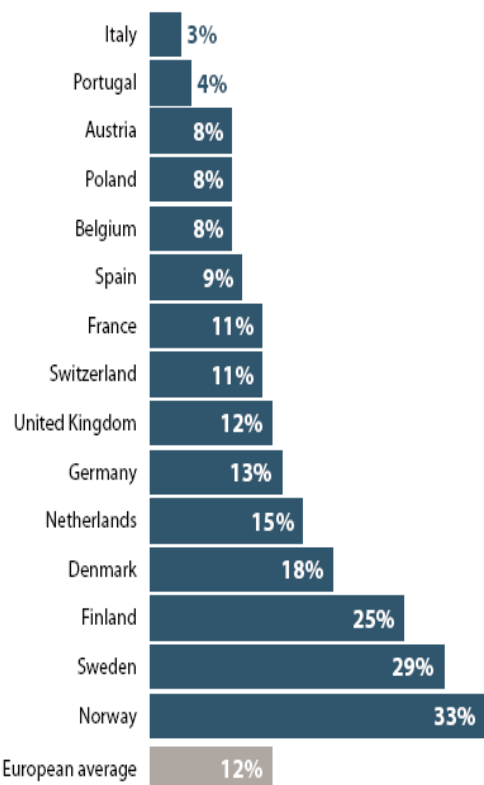
Source: Heidrick & Struggles -Challenging board performance – European Corporate Governance Report 2011

The following step is the analysis of the correlation matrix, computed for each of the five considered sectors. In **table 5** are reported the correlation matrixes with the correlation coefficients for the five selected sectors for the variables considered.

In this analysis we find a certain correlation between some corporate governance variables and performance variables.

Almost in every sector there is a certain positive correlation between the dimension of the Board and performance indicators (sales and total assets).

The results may confirm that the executive control is more effective in an wider board, that can positively influence the independent level of work. In other words, it seems more difficult, in board with a high number of members, for the executives to influence the work of the board itself.

There isn't any correlation between the number of independent and the dimension of the Board. So we could not

asses that the choice of a certain governance model and of the dimension of the Board may offer a better economic performance, as it is impossible to define an "absolute best governance model". Probably, for each situation, contest, dimension and organization there could be a governance model that better fit the specific situation of the considered entity, but it is absolutely impossible to assess that a specific governance model is "the best" for everyone.

A very weak but positive correlation between performance and the percentage of members on more than one board appears in Fashion sector.

In Construction there is also a certain level of (negative) correlation between the "age" of the firm and performance indicators (sales, net equity and total assets). This seems to suggest that in Construction, younger firms are more successful, maybe because they are more dynamic.

The conclusion is that if the sample as a whole present too high levels of variability and changeability that do not present clear evidence of correlation among variables, considering on the other hand only small groups (sectors) of firms that have more similar features, some evidence may appear. At least we could say which are the variables that requires more attention.

Considering all the correlation, we can assess that high attention should always be paid, if we want to describe some "best practices", also among the dimension of the Board and the percentage of independent or executive members.

Long-term and further possible development

Here there are some more possible further development of this kind of studies on the effect and the relationship among different corporate governance aspects and economic performance:

- "bonding procedure", prepare different and more complex models such as:
    - <u>Within Model</u>: considering each variable as the difference from the sector mean (average)
    - <u>GMM Model</u>: it's useful mainly in dealing with problems connected with endogenous variables. Each variable is not considered as "level", but as a difference;
    - <u>GMM-sys</u>: it's like the previous one, but in addition it consider the equations as levels as well.

For instance:

$$Y = betag\ G + Betax\ X + lambda + ni + u$$

Where:

Y profitability index
G vector of governance variables
X vector of control variables
Lambda: dummy or proxy
ni individual effect
u error term

Another possible further development may be the analysis of the banks and insurances. They surely deserve a deeper analysis both because of their characteristics and for their growing importance in modern economies. They probably need a specific analysis not only because it's a very complex system, but also because they have completely different characteristics, rules, Laws and financial reports scheme. Recently the Italian Government ("Governo Monti") has changed some rules, for example about Members on more than one Board of the same "area" or "sector" at the same time. It may be very interesting to find out what can be the impact (positive, negative or "no-effect") of these changes in the next couple of years.

A third possible development of the research could be carried on by analysing the same relationship between corporate governance and economic performance under an international perspective, considering samples of companies listed in different Countries, trying to analyse whether is possible to determine a corporate governance model "best in class".

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Table 2

PERFORMANCE INDICATORS - Average Values	Food	Automotive	Real Estate	Chemical	Trade	Construction	Media	Fashion	Petroleum	Industrial products	Health care	Public Utilities	Technologies	Telecommunication	Leisure
Total Assets ('000)	924	4870	1076	746	283	2483	1093	1111	22826	874	480	13564	239	13544	719
Net Equity ('000)	470	1965	437	334	96	1523	578	510	5847	460	245	4219	76	4119	157
Sales ('000)	833	4585	92	958	256	1854	848	672	17495	838	442	4699	344	4275	682
Net Income ('000)	84	90	-24	3	9	123	36	39	1033	45	20	684	-6	343	12
ROI	7,55	5,79	0,61	2,07	2,67	8,76	3,92	5,8	11,71	8,43	7,23	9,08	5,54	4,78	3,95
ROE	2,31	1,89	-3,18	-3,87	-3,8	8,94	-3,52	-3,32	17,55	6,5	-3,25	8,98	-1,31	3,65	-0,73

Table 3:

Average Board Dimension

	2006	2007	2008	2009	2010
Constr.	10	11	12	10	11
Media	10	9	11	10	11
Fashion	9	10	10	11	10
Ind. Prod.	9	10	11	11	10
Techn.	8	8	8	9	8

Members of more than one Board

	2006	2007	2008	2009	2010
Constr.	4	5	5	5	5
Media	6	7	6	5	6
Fashion	3	3	4	5	4
Ind. Prod.	3	3	3	3	3
Techn.	1	1	1	2	3

Female Members in each Board

	2006	2007	2008	2009	2010
Constr.	0	1	1	1	1
Media	1	1	1	1	1
Fashion	1	1	1	0	1
Ind. Prod.	1	1	1	1	1
Techn.	0	1	1	1	3

Sales

	2006	2007	2008	2009	2010
Constr.	2215	1990	1967	1606	1490
Media	827	898	902	788	823
Fashion	778	670	580	634	696
Ind. Prod.	638	792	841	901	1017
Techn.	350	375	379	301	317

ROI

	2006	2007	2008	2009	2010
Constr.	13	11	9	6	5
Media	6	5	2	3	3
Fashion	8	9	5	0	6
Ind. Prod.	11	11	7	7	7
Techn.	6	6	6	2	5

Table 4

INDUSTRIAL PRODUCTS

	Board_N	%Memb_+Brd	Memb_+Brd	%F	F	Gov_mod	Ex	Indip	%Ex	%Indip
Total	1278	33,65	365	8,81	75,0	0	412	477	41	48
25th	8	0,11	1	0,00	0,0	0	3	3	0,30	0,33
Median	10	0,22	2	0,00	0,0	0	3	4	0,33	0,38
75th	12	0,38	4	0,11	1,0	0	4	4	0,33	0,40
Mean	10	0,26	3	0,07	0,6	0	2	4	0,32	0,38
St. Dev.	3	0,22	3	0,10	0,8	0	1	1	0,04	0,04

MEDIA

	Board_N	%Memb_+Brd	Memb_+Brd	%F	F	Gov_mod	Ex	Indip	%Ex	%Indip
Total	517	21,85	245	3,02	31,0	0	170	193	16	18
25th	8	0,28	2	0,00	0,0	0	3	3	0,3	0,4
Median	10	0,46	5	0,03	0,5	0	3	4	0,3	0,4
75th	13	0,64	7	0,10	1,0	0	4	5	0,4	0,4
Mean	11	0,46	6	0,06	0,6	0	3	4	0,3	0,4
St. Dev.	4	0,24	4	0,08	0,7	0	1	1	0,0	0,0

FASHION

	Board_N	%Memb_+Brd	Memb_+Brd	%F	F	Gov_mod	Ex	Indip	%Ex	%Indip
Total	754	25,07	275	3,87	35,0	0	247	280	25	28
25th	8	0,15	2	0,00	0,0	0	3	3	0,3	0,3
Median	9	0,32	3	0,00	0,0	0	3	4	0,3	0,4
75th	12	0,50	6	0,10	1,0	0	4	4	0,4	0,4
Mean	10	0,33	4	0,05	0,5	0	2	3	0,3	0,4
St. Dev.	3	0,22	3	0,07	0,7	0	1	1	0,0	0,0

CONSTRUCTION

	Board_N	%Memb_+Brd	Memb_+Brd	%F	F	Gov_mod	Ex	Indip	%Ex	%Indip
Total	526	19,61	223	4,62	46,0	0	170	197	15	18
25th	9	0,10	1	0,00	0,0	0	3	3	0,3	0,4
Median	11	0,47	4	0,07	1,0	0	4	4	0,3	0,4
75th	13	0,64	8	0,18	2,0	0	4	5	0,4	0,4
Mean	11	0,41	5	0,10	1,0	0	3	5	0,3	0,4
St. Dev.	3	0,30	4	0,09	0,9	0	1	1	0,0	0,0

TECHNOLOGIES

	Board_N	%Memb_+Brd	Memb_+Brd	%F	F	Gov_mod	Ex	Indip	%Ex	%Indip
Total	441	61,59	170	8,35	31,0	4	140	163	18	21
25th	6	0,00	0	0,00	0,0	0	2	2	0,3	0,3
Median	8	0,20	2	0,00	0,0	0	2	3	0,3	0,4
75th	9	0,50	4	0,13	1,0	0	3	3	0,3	0,4
Mean	8	1,03	1	0,14	0,5	0	2	3	0,3	0,3
St. Dev.	3	2,40	4	0,37	0,7	0	1	1	0,1	0,1

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Table 5

TECHNOLOGIES

	Board_N	%Memb_+	Memb_+B	%F	F	Ass	NE	Sales	NI	ROI	ROE	Age	Gov_mod	Ex	Indp	%Ex	%Indp
Board_N	1	-0,605494	-0,287389	-0,425884	-0,211986	0,066115	0,165979	0,066049	0,115464	0,202695	0,110941	0,009584	0,216913	0,965764	0,971578	0,365799	0,449977
%Memb_+Brd		1	0,724610	0,482922	0,102325	-0,005612	0,014806	-0,001700	0,036051	-0,141440	-0,069314	-0,008525	-0,026074	-0,608986	-0,620192	-0,605032	-0,697599
Memb_+Brd			1,000000	0,234724	-0,012989	0,230502	0,279193	0,173759	0,149296	0,075946	0,047342	-0,091373	0,317449	-0,291156	-0,267797	-0,256060	-0,298395
%F				1	-0,106310	-0,117067	-0,143448	-0,063881	-0,241401	-0,099058	-0,185695	-0,102194	-0,433440	-0,450857	-0,497486	-0,558050	
F					1	-0,291023	-0,260488	-0,239875	-0,468977	-0,391029	-0,222569	-0,205908	-0,184832	-0,234967	-0,124694	-0,202644	
Ass						1	0,657895	0,804108	-0,147512	0,204855	0,094060	-0,207893	0,431264	0,004976	0,119846	0,038531	0,172939
NE							1	0,511489	0,391669	0,358421	0,256428	-0,200487	0,570885	0,085373	0,226110	-0,076653	0,125641
Sales								1	0,080666	0,320617	0,193470	-0,317655	0,147327	0,020608	0,113745	0,043849	0,140694
NI									1	0,324911	0,303207	-0,201713	0,187841	0,087825	0,153034	-0,037516	0,075308
ROI										1	0,668597	0,362228	0,196218	0,052811	0,248282	0,186783	0,245707
ROE											1	0,029888	0,159141	0,101075	0,133653	0,062858	0,129349
Age												1	-0,344638	0,066026	0,001625	0,151762	0,054660
Gov_mod													1	0,159011	0,265432	-0,009745	0,139653
Ex														1	0,928545	0,521069	0,476458
Indp															1	0,398385	0,578343
%Ex																1	0,8054795
%Indp																	1

INDUSTRIAL PRODUCTS

	Board_N	%Memb_+	Memb_+B	%F	F	Ass	NE	Sales	NI	ROI	ROE	Age	Ex	Indp	%Ex	%Indp
Board_N	1	0,371525	1	-0,359088	-0,133086	0,144373	0,187963	0,096221	0,158664	0,261258	0,225027	0,156844	0,946392	0,947383	0,125095	-0,249124
%Memb_+Brd		1		-0,192961	-0,091024	0,041211	0,081196	0,010391	0,081718	-0,007996	0,079937	0,103782	0,340716	0,317466	0,004292	-0,182300
%F				1	0	-0,066229	-0,054900	-0,093694	-0,373046	-0,402503	-0,376609	-0,348592	-0,330824	-0,086691	0,116716	
Ass						1	0,985682	0,914198	0,103008	0,103758		-0,313671	0,125839	0,129862	0,021469	-0,059302
NE							1	0,947925	0,898469	0,104763	0,105436	-0,312452	0,170002	0,166078	0,034546	-0,079537
Sales								1	0,890583	0,112138	0,112502	-0,296389	0,083754	0,080229	0,025865	-0,065113
NI									1	0,198164	0,224704	-0,267445	0,111929	0,159343	-0,041215	-0,025885
ROI										1	0,753669	0,224929	0,226739	0,223101	-0,027292	-0,149305
ROE											1	0,273909	0,155286	0,217406	-0,137494	-0,051375
Age												1	0,117893	0,148577	-0,091999	-0,061762
Ex													1	0,847519	0,423183	-0,376588
Indp														1	-0,013198	0,058140
%Ex															1	-0,459890
%Indp																1

MEDIA

	Board_N	%Memb_+Brd	Memb_+Brd	%F	F	Ass	NE	Sales	NI	ROI	ROE	Age	Ex	Indp	%Ex	%Indp
Board_N	1	0,20506	0,721100	-0,098835	0,100372	0,460887	0,422789	0,478838	0,183334	0,059117	0,059059	0,257428	0,962633	0,982185	-0,161362	-0,281636336
%Memb_+Brd		1		0,124587	0,229889	0,067456	0,195423	0,103149	0,154253	-0,056610	0,039602	-0,119732	0,192062	0,251636	-0,066775	0,207554658
%F				1	-0,180493	-0,040886	-0,198078	0,039792	0,190424	0,071893	0,173917	-0,048663	-0,080770	0,232590		0,134382152
Ass						1	0,918154	0,928192	0,452053	0,419804	0,292828	0,275286	0,469490	0,424638	0,037020	-0,200386349
NE							1	0,944574	0,685153	0,465212	0,372374	0,233163	0,419295	0,393733	0,014660	-0,147953263
Sales								1	0,623176	0,485452	0,376088	0,150372	0,468306	0,451500	0,004988	-0,158767821
NI									1	0,577009	0,449579	-0,069852	0,139138	0,170604	-0,076249	-0,045167104
ROI										1	0,806352	-0,150632	0,058957	0,063639	0,128625	0,067981727
ROE											1	-0,152095	0,024145	0,091247	-0,010983	0,143696186
Age												1	0,2461294	0,265155	-0,059859	0,014896325
Ex													1	0,9195634	0,0919421	-0,392451494
Indp														1	-0,230556	-0,105453033
%Ex															1	-0,311211666
%Indip																1

FASHION

	Board_N	%Memb_+Brd	Memb_+Brd	%F	F	Ass	NE	Sales	NI	ROI	ROE	Age	Ex	Indp	%Ex	%Indp
Board_N	1	0,52544	0,76660	-0,20594	-0,01475	0,38285	0,34956	0,40744	0,38096	0,16338	0,11026	-0,16311	0,94783	0,96004	0,08662	-0,11653
%Memb_+Brd		1		-0,19650	-0,10453	0,36687	0,34161	0,37662	0,28581	-0,02405	-0,07866	0,05593	0,43765	0,49501	-0,14563	-0,08312
%F				1		-0,20579	-0,14696	-0,22946	-0,08068	0,12203	0,08067	0,11255	-0,22022	-0,22279	-0,15487	-0,14056
Ass						1	0,97083	0,96799	0,79936	0,25326	0,23143	-0,01276	0,36912	0,34823	0,05149	-0,07359
NE							1	0,91607	0,82214	0,30877	0,27350	0,00014	0,32108	0,32984	0,01821	-0,02885
Sales								1	0,79034	0,31539	0,27336	-0,00143	0,38990	0,38394	0,05538	-0,05184
NI									1	0,51257	0,45343	-0,07630	0,30732	0,38389	-0,10187	0,01326
ROI										1	0,84598	0,02187	0,08360	0,20864	-0,12012	0,14951
ROE											1	0,00004	0,02791	0,14978	-0,21200	0,15188
Age												1	-0,20851	-0,13035	-0,15426	0,15227
Ex													1	0,87475	0,37977	-0,20627
Indp														1	0,00762	0,14955
%Ex															1	-0,21371
%Indip																1

CONSTRUCTION

	Board_N	%Memb_+Brd	Memb_+Brd	%F	F	Ass	NE	Sales	NI	ROI	ROE	Age	Ex	Indp	%Ex	%Indp
Board_N	1	0,164511	0,5381858	-0,305427	-0,0145615	0,5277933	0,4091827	0,57235	0,365701	0,387245	0,243304	-0,42907	0,9537276	0,9703155	0,148950329	-0,29223
%Memb_+Brd		1		0,1666207	0,2830832	0,266434	0,31075269	0,21256	0,133775	-0,29907	-0,1338	-0,21293	0,1591919	0,1607945	-0,01342168	0,008193
%F				1		0,1393997	0,22466105	0,049344	0,00518	-0,3811	-0,40991	0,017733	-0,248042	-0,354277	0,070952548	-0,15124
Ass						1	0,97094572	0,976544	0,710756	0,163142	0,036195	-0,51914	0,5287826	0,5186387	0,160917246	-0,15032
NE							1	0,939042	0,705401	0,070054	-0,0705	-0,54769	0,4327436	0,3970614	0,18346258	-0,13693
Sales								1	0,763813	0,237651	0,106608	-0,51703	0,5608352	0,5684512	0,135803247	-0,13403
NI									1	0,42458	0,314282	-0,32854	0,3261549	0,389896	0,000773502	0,009555
ROI										1	0,786276	-0,08684	0,3062939	0,4773633	-0,072046615	0,226517
ROE											1	0,098729	0,113192	0,3317719	-0,338052948	0,25434
Age												1	-0,420688	-0,462467	-0,111146251	-0,03601
Ex													1	0,8904987	0,413201077	-0,39274
Indp														1	0,061535496	-0,06108
%Ex															1	-0,34443
%Indip																1