

HOW DOES THE QUALITY OF CORPORATE GOVERNANCE AFFECT THE MARKET VALUE OF BUSINESS FIRMS IN ISRAEL?¹

BENI LAUTERBACH* AND MENASHE SHAHMOON**

Abstract

In this study we construct, for the first time in Israel, an index for ranking the quality of corporate governance of Israeli firms. The index, based mainly on principles that are common in existing international indices, focuses on four main topics (the abilities of the board of directors, audit and control, ethics and honesty, and transparency), and it includes 19 variables. An empirical analysis of 173 public companies (included in the TASE 100 and YETER 150 at the end of 2005) finds the following: 1. Disperse ownership companies and companies with a higher return on equity have better quality corporate governance; 2. There is a significant positive correlation between our index ranking the quality of corporate governance and a firm's relative value (Tobin's Q); The causality of this relation is, however, unknown, i.e., we do not show or argue that better corporate governance increases firm valuation; 3. The existence of an ethical code, few transactions with interested parties, early publication of periodical reports and the inclusion of a small number of directors who are also employees of the corporation, are components of the index that are most strongly correlated with the value of the firm; 4. Dual companies have a higher level of corporate governance and higher Q values.

1. INTRODUCTION

One of the main targets of the regulation of capital market is to create 'proper corporate governance,' i.e., to define a series of principles, rules and regulations that will guarantee the responsible and fair behavior of a company and its directors vis-à-vis the small investors in that company. Proper corporate governance is expected to reduce the risk to small investors and prevent misbehavior of firm managers and controlling shareholders.

* Prof. Beni Lauterbach is Chairman of the Raymond Ackerman Family Chair in Israeli Corporate Governance at the Graduate School of Business Administration, Bar Ilan University, Ramat Gan 52900, Israel; Email: lauteb@mail.biu.ac.il.

** Dr. Menashe Shahmoon is a Lecturer at the School of Social Sciences & Management, Ruppin Academic Center, Israel; Email: menashes@ruppin.ac.il.

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with the US capital market with its disperse ownership structure, and is concerned primarily with the conflict of interests between shareholders and managers. Thus, the CGI constructed in the US is based on variables describing the balance of power between top managers and shareholders.

Beiner, Drobetz, Schmid and Zimmerman (2006) in Switzerland, Black, Love and Rachinsky (2006) in Russia, Drobetz, Schillhofer and Zimmerman (2004) in Germany, Black, Jang and Kim (2006 a, b) in Korea, Cheung, Connelly, Limpaphayom and Zhou (2007) in Hong Kong, and others, constructed indices of the quality of corporate governance that monitor the balancing mechanisms between 'simple' shareholders from among the public and the holders of a controlling interest in a company. In most countries other than the US, there are controlling shareholders in a company, whether an individual, a family, or a partnership, who control most of the voting power in a company and lead it. The controlling shareholders possess considerable power and can utilize it to exploit the company in ways that increase their own personal utility. Consequently, indices of corporate governance outside the US have included, in addition to parameters of shareholders' rights, parameters monitoring the structure, independence, and *modus operandi* of the board of directors, auditing quality of the company (both internal and external), and the company's public transparency.

b. Factors affecting the quality of corporate governance

After constructing the index of the quality of corporate governance, we go on to examine the factors that affect its level. This examination is not often employed by researchers, and in fact only a few, Black, Jang and Kim (2006b) for example, discuss it. They report that there is a significant positive correlation at the 1 percent level between their index, the natural log of total assets, and the weekly standard deviation of the company's stock return. They also find a significant negative correlation at the 5 percent level between their index and the ratio of fixed assets to sales.

In this study we propose adding another two factors to the list of factors potentially affecting CGI:

1. The company's profitability - more profitable companies (companies with a higher return on equity) can afford adopting higher quality and more costly corporate governance standards.

2. The ownership structure - in a disperse ownership company the quality of corporate governance will be higher because there is no controlling shareholder seeking private benefits.

c. The relation between company value and the quality of its corporate governance

Many studies, including La Porta, Lopez-de-Silanes, Shleifer and Vishny (2002) and Lombardo and Pagano (2006) present the hypothesis that high quality corporate governance increases the value of a company. They claim that investors are prepared to pay more for shares in a company with corporate governance of a higher quality for two main reasons. First, a firm with a relatively sophisticated system for protecting small investors distributes

a larger part of its real profits to investors (as dividends or interest). Second, corporate governance of a high quality reduces the cost of equity, i.e., the required rate of return. This is because investors from the public are more confident that they will receive their fair share, and because these investors save on supervision, audit, and control costs. An increase in the flow to the small investors (the first reason above) and a decline in their risk (the second reason) increase the market value of the company shares.

The effect of the quality of corporate governance on a company's value can be examined in two ways: a) by examining an event, i.e., assessing the response of the company's value to sharp changes in the quality of corporate governance; and b) by cross-sectional or panel regressions (that combine cross section data with time-series data). We begin with the event-analysis evidence.

Governance and accounting scandals in leading public companies led many countries to adopt legislation along the lines of the US Sarbanes-Oxley Act of 2002 (SOX). The objectives of that law were to create proper governance and control mechanisms, reduce the risk to investors, and increase transparency.

Aggarwal and Williamson (2006) examined the effect of the SOX regulation, and found that there was a substantial improvement in corporate governance in the period between 2001 and 2005. Aggarwal et al. (2006) also report a significant positive correlation between the quality of corporate governance and the value of corporations prior to the SOX legislation. However, in the period after the SOX legislation they find a correlation between the quality of corporate governance and the value of the firm only for attributes of good corporate governance that are not included in the law.

Chhaochharia and Grinstein (2007) also examined the effect of the legislation in the US. They find that large companies that were required to make more changes in the wake of the law yielded higher returns than large companies that were required to make fewer changes. On the other hand, the findings for small companies are the opposite. Small companies that were required to make more changes as a result of the law yielded a more negative return than those that had to make only a few changes. Like Linck, Netter and Yang (2009) and Holmstrom and Kaplan (2003), Chhaochharia and Grinstein (2007) argue that the expenditure associated with the implementation of the law constitutes a very heavy economic burden for small companies. Consequently, for small companies the costs of SOX outweigh the benefits.

The conclusion from the literature on the SOX legislation event is that higher quality corporate governance affects positively company's market value.

The strand of studies using cross-sectional regressions yields similar conclusions. Gompers, Ishii and Metrick (2003) examined the correlation between their CGI and the relative value of the company estimated by means of Tobin's Q. They reported that when the quality of a company's corporate governance is higher it attains a higher market value, greater profits and lower capital costs. The authors divided the sample into deciles by the quality of firm corporate governance, and suggested the following strategy: buy an investment portfolio in the top decile (highest quality) of corporate governance, and short the bottom decile of corporate governance. This investment strategy attained a significant excess annual return of 8.5 percent. Cremers and Nair (2005) also endorse this conclusion. They describe a similar investment strategy that yields an excess return of 10 percent.

Bebchuk, Cohen and Ferrell (2009) and Bebchuk and Cohen (2005) construct a parsimonious corporate governance index, and also document a positive correlation between company value and the quality of its corporate governance. Brown and Caylor (2006) also endorse these findings.

Outside the US, Beiner, Drobetz, Schmid and Zimmermann (2006) found a positive correlation between their CGIs and a company's relative value, Q, for a sample of 109 public companies in Switzerland. They claim that the correlation between the value of a company and the quality of its corporate governance is causal, namely, that high quality corporate governance is one of the factors explaining the higher market value.

Black, Love and Rachinsky (2006) focused on a ranking of the quality of corporate governance published by investment banks in Russia. They found a significant positive correlation between a company's value and the quality of its corporate governance in a sample of 99 public companies in Russia. However, in contrast to Beiner, Drobetz, Schmid and Zimmermann (2006), they contend that there is a reverse causal correlation, i.e., that high-value corporations adopt better standards of corporate governance.

Black, Jang and Kim (2006a) examined a sample of 453 public companies in Korea and found a significant positive correlation between their CGI indices and a company's relative value, Q.

Cheung, Connelly, Limpaphayom and Zhou (2007) argue that corporate governance is an important determinant of the value of public companies in Hong Kong. The authors found a significant positive correlation between their CGI and a company's value (measured by its market to book ratio) for 168 public companies.

Note that the literature also includes several articles that did not find a significant correlation between the quality of corporate governance and company value and performance - see Larcker et al. (2007), for example. Nonetheless, consistent with most of the previous studies of the subject, our research hypothesis is that in Israel, too, there is a significant positive correlation between a company's relative value, Tobin's Q, and the quality of its corporate governance.

d. The effect of a company's dual listing on a foreign stock exchange on the quality of its corporate governance and its value

Stulz (1999), Weisbach and William (2002), and Doidge, Karolyi and Stulz (2004) argue that listing in a country where corporate governance standards are higher, forces a company to be more transparent and to maintain better control and auditing. Klapper and Love (2004) study a sample of large companies from fourteen developing countries. They found that companies in countries with 'weak' corporate governance increased their value by listing on a U.S. stock exchange, where corporate governance regulation is relatively strong.

Our research hypotheses regarding the impact of dual listing are as follows:

1. The quality of corporate governance in dual-listed companies is higher than that of companies listed for trade only in Israel.
2. The relative value of dual-listed companies is higher on average than that of companies listed for trade only in Israel.

3. CONSTRUCTING AN INDEX OF CORPORATE GOVERNANCE

In this study we construct, for the first time in Israel, an index ranking the quality of corporate governance. This index is based on the principles and variables used in indices built abroad, with appropriate adjustments for Israel, and with some concessions due to the data limitations in Israel.

Gompers, Ishii and Metrick (2003) were the first to construct an index ranking the quality of corporate governance in the US. Their index included 24 variables describing high-quality corporate governance. Most of those variables emanate from US laws and regulations regarding hostile takeovers. The index was divided into the following five categories: 1. Company's control structure; 2. Shareholders' rights; 3. Protection and indemnity of directors and senior managers; 4. Other forms of protection against a hostile takeover included in the company's articles of association, such as 'fair price' and 'poison pill'; 5. Further protection against a hostile takeover anchored in the laws of the state in which the company was incorporated.

Additional versions of the index of the quality of corporate governance in the US may be found in Brown and Caylor (2006), Cremers and Nair (2005), and Bebchuk, Cohen and Ferrell (2009), among others. These versions are not relevant to Israel and many other countries because they are based on regarding the balance of power between shareholders and managers, i.e., they are intended to prevent problems that are predominant only on the US and perhaps the UK economies.

The agency problem that occurs in Israel and in most other world economies is the imbalance between the power of controlling shareholders and that of small shareholders. The controlling shareholders can extract private benefits for themselves at the expense of the general public. High-quality corporate governance standards guard against exploitations of the company, and reduce the level of private benefits that the controlling shareholders can extract. In many countries the index of the quality of corporate governance is based on the quality of supervision on controlholders and the protection level of the interests of the small shareholders.

Black, Jang and Kim (2006 a,b) used a questionnaire that the Korean Stock Exchange sent to all public companies. On the basis of this questionnaire, the authors constructed an index of the quality of corporate governance in Korea. Their index included 39 variables indicative of the quality of corporate governance. The index was divided into the following five categories: 1. Shareholders' rights; 2. The structure of the board of directors; 3. Procedures and the *modus operandi* of the board of directors; 4. Transparency; 5. The proportion of shares held by the public.

Beiner, Drobetz, Schmid and Zimmermann (2006) constructed an index of the quality of corporate governance in Switzerland. Their index included 38 variables indicative of high quality corporate governance. They constructed a questionnaire, based on the recommendations of the Swiss Code of Best Practice, and sent it to a sample of large public companies in Switzerland. Some of the replies they received were verified by comparing them with information on those companies that had been published publicly. The index was divided into the following five categories: 1. Directors' commitment to good quality

corporate governance; 2. Shareholders' rights; 3. Transparency; 4. The board of directors and senior management; and 5. Audit and reporting.

The Israeli index we construct is based only on information published by public companies in their annual reports. Inevitably, the published information we use is more limited than what could be obtained from a research questionnaire. However, our information is audited and is therefore likely to be slightly more reliable.

The index we build comprises four categories and 19 variables. The four categories are: 1. The board of directors; 2. Audit and control; 3. Ethics and fairness; and 4. Transparency. The variables included in our corporate governance index are presented in Table 1.

Table 1
The Composition of the Index for Ranking the Quality of Corporate Governance in Israeli Firms

Serial no.	Variable symbol	Category within the Index	Variable definition and its presumed impact	Binomial coding
1	NUM_MEET	Board of directors	No. of meetings of the board of directors called by the company. A higher no. of meetings improves corporate governance quality.	The variable takes the value of 1 if the company calls two or more meetings per year
2	CEO-IS_CHR	Board of directors	A dummy variable taking the value 1 if the company chairman is not the CEO, and 0 otherwise. When there is separation of roles at the top the quality of corporate governance improves.	The variable takes the value of 1 if the chairman is not the CEO.
3	BOARD_SIZE	Board of directors	No. of members of board of directors. A larger board of directors detracts from the quality of supervision and corporate governance.	The variable takes the value of 1 for a board of between 6 and 9 members.
4	CONTROL_DIR	Board of directors	The percentage of directors from among the controlling shareholders. The lower is this proportion the higher is the quality of corporate governance.	The variable of the percentage of directors who are holders of a controlling interest takes the value 1 if there is no director who holds a controlling interest.
5	EMPLOY_DIR	Board of directors	The percentage of directors who are employees of the company and are not controlling shareholders. The lower the proportion of company employees on the board of directors the better the quality of corporate governance.	The variable takes the value 1 if no member of the board of directors is a company employee.
6	EXPERT_DIR	Board of directors	The percentage of directors with expertise in accounting and finance. The higher the proportion of experts on the board of directors the higher the quality of corporate governance.	The variable takes the value of 1 if 37 percent (the median) or more of the members of the board of directors are experts.
7	INT_AUDIT_SUP	Audit and control	A dummy variable taking the value 1 if the organ in charge of the internal auditor is the audit committee, and 0 otherwise. The audit committee is (relatively) independent so that the quality of corporate governance improves.	The variable takes the value 1 if the organ in charge of the internal auditor is the audit committee.
8	INT_AUDIT_YRS	Audit and control	The seniority of the internal auditor (the number of years he/she has been in that position). A high turnover attests to independence and hence better quality corporate governance.	The variable takes the value of 1 if the internal auditor has been in that position for 7 years (the median) or less.
9	AUDIT_COM_EXT	Audit and control	The proportion of non-executive directors on the audit committee. A higher no. promotes independence and the quality of corporate governance.	The variable for the proportion of non-executive directors on the audit committee takes the value of 1 if this proportion is 75 percent or more.

(Continue) Table 1

Serial no.	Variable symbol	Category within the Index	Variable definition and its presumed impact	Binomial coding
10	AUDIT_COM_EXP	Audit and control	The percentage of directors with expertise in accounting and finance on the audit committee. A high proportion of experts improves the quality of corporate governance.	The variable takes the value of 1 if 51 percent (the median) or more of the members of the committee are experts.
11	CONSULT_AUDIT	Audit and control	The percentage of consultancy fees in the total fee paid to the company's external auditor. A low proportion attests to greater independence of the auditor and hence improved quality of corporate governance.	The variable for the proportion of consultancy fees in the fee paid to the company's external auditor takes the value 1 if this proportion is in below the median.
12	COMMUNITY	Ethics and fairness	A dummy variable which takes the value 1 if the company acts on behalf of the community (not by donating money), and 0 otherwise. Social responsibility is consistent with high quality corporate governance.	This variable takes the value 1 if the company works for the community via the volunteering activities of its employees on behalf of the community.
13	CONTROL_DEAL	Ethics and fairness	The number of transactions with controlling shareholders that require the approval of the general assembly. A low no. of transactions attests to high quality corporate governance.	This variable takes the value of 1 if there are no transactions with holders of a controlling interest.
14	INTRSTED_DEAL	Ethics and fairness	The no. of exceptional transactions with controlling shareholders that do not require the approval of the general assembly. A low no. of transactions attests to high quality corporate governance.	The variable takes the value of 1 if there are no such transactions.
15	MAALA	Ethics and fairness	A dummy variable coded as 1 if the company is included in the MAALA index of social responsibility, and 0 otherwise. Social responsibility is associated with high quality corporate governance.	This variable takes the value 1 if the company is included in the MAALA index for 2005.
16	ETHICAL_CODE	Ethics and fairness	A dummy variable that takes the value 1 if the company has an ethical code, and 0 otherwise. Behaving according to an ethical code promotes high quality corporate governance.	This variable takes the value of 1 if the company has an ethical code.
17	EARLY REPORT	Transparency	The number of days by which the company's annual report precedes the last date for publication set by law. Early publication increases transparency and improves the quality of corporate governance.	This variable takes the value of 1 if the company publishes its annual report at least 6 business days (the median) before the date set by the law.
18	PROXY	Transparency	A dummy variable that takes the value of 1 if a company enables voting by proxy, and 0 otherwise. Increasing the company's accessibility to all shareholders improves the quality of corporate governance.	This variable takes the value 1 if the company enables voting by proxy.
19	CONF_CALL	Transparency	A dummy variable that takes the value of 1 if the company holds a conference call prior to the publication of its reports, and 0 otherwise. Greater transparency is consistent with high quality corporate governance.	This variable takes the value 1 if the company holds a conference call prior to the publication of its reports.

The category "board of directors" in our index includes the following six variables:

NUM_MEET. The number of directors' meetings held by the company. A board of directors that meets several times a year is more active, has greater ability to monitor the controlling shareholders, and hence promotes better quality corporate governance. In 47 percent of the companies in our sample the board of directors met only once a year (and in some of those companies this appears to be insufficient).

BOARD_SIZE. The number of members on the board of directors. A board of directors that is too small or too large is ineffective, diminishing the quality of control and supervision that are essential for good corporate governance (Linck, Netter and Yang, 2008). In our sample, the median number of members of the board of directors is 8, and the inter-quartile range is 6 to 9. Thus, when we use a binomial dummy variable (0 or 1), a board of directors of a reasonable size (6 to 9 members) is coded as 1.

CEO_IS_CHR. A dummy variable taking the value of 1 if the company's CEO is not also its chairman, and 0 otherwise. When there is separation of authority at the top of the company there is mutual control and some balance of internal power, with an improvement in the quality of corporate governance (relative to a case where the CEO is also Chairman). Israel's Companies Law also regards undue concentration of power (a situation in which the CEO is also the chairman) unfavorably, permitting it only in special cases and for a limited period.

CONTROL_DIR. The proportion of directors who are also controlling shareholders. The lower is the proportion of controlling shareholders on a board of directors, the better are its independence and the quality of corporate governance.

EMPLOY_DIR. The proportion of members of the board of directors who are employees of the corporation but are not part of the control group. Directors who are employees of the corporation could be "influenced" by the controlling shareholders, hence, the lower is the proportion of employees who are on the board of directors, the better is the quality of corporate governance. The law also regards an unduly high proportion of internal directors (both holders of a controlling interest and employees of the company) unfavorably. According to Amendment no.8 of the Companies Law, in a public company with a controlling interest at least a third of the board of directors, including non-executive directors, should be independent; and in a public company without a controlling interest at least half the directors should be independent.

EXPERT_DIR. The proportion of directors with expertise in accounting and finance. The higher the proportion of experts on the board of directors, the better the quality of audit and control as well as of corporate governance.

The category "audit and control" in our index includes the following five variables:

INT_AUDIT_SUP. A dummy variable coded as 1 when the internal auditor is appointed and supervised by the audit committee, and 0 otherwise. The internal auditor is a company employee, and hence the body in charge of him/her is important. When the internal auditor reports to the audit committee his/her independence is greater, as is the quality of corporate governance.

INT_AUDIT_YRS. The seniority of the internal auditor (the number of years he/she has been in this position). An internal auditor who has held the position for too many years is suspect of experiencing 'fatigue' and of being too involved with the controlling

shareholders. A relatively fresh internal auditor is expected to be more vigorous and less bound by past conventions. Hence, a less veteran internal auditor (within the company) is expected to help improve the quality of corporate governance.

AUDIT_COM_EXT. The proportion of non-executive directors on the audit committee. A higher proportion of external directors increases independence and improves the quality of corporate governance.

AUDIT_COM_EXP. The proportion of non-executive directors with accounting and financial expertise on the audit committee. A higher proportion of expert directors improves the work of the committee, increases its independence and augments the quality of corporate governance.

CONSULT_AUDIT. The proportion of consultancy fees in the total fee paid to the company's external auditor. A lower proportion of consultancy fees in the total fee paid to the external auditor affords a higher level of independence on the part of the external auditor and contributes to the quality of corporate governance.

The category of "ethics and fairness" in our index includes the following five variables:

COMMUNITY. A dummy variable coded as 1 when the company is active on behalf of the community (not by means of a financial donation), and 0 otherwise. A company that encourages its employees to devote time to giving to the community is a more values-guided company that seeks to cultivate a culture of giving and fairness. Hence, it is reasonable to assume that its corporate governance will also be of a higher quality.

CONTROL_DEAL. The number of transactions with controlling shareholders that require the approval of the general assembly. Transactions with the company are suspect as a way to transfer wealth from the company to its controlling shareholder. Hence, a small number of transactions with controlling shareholders suggests a high quality of a company's corporate governance.

INTRSTED_DEAL. The number of transactions with controlling shareholders that do not require approval by the general assembly. As is the case with the preceding variable, a small number of transactions with controlling shareholders is consistent with a company with a relatively high quality of corporate governance.

MAALA. A dummy variable coded as 1 if the company is included in the MAALA index of corporate social responsibility, and 0 otherwise. The MAALA ranking includes those public companies that incorporate social responsibility into their business activity, and that also responded to the MAALA organization's questionnaire. Since only a few companies in Israel responded to that questionnaire, we regarded the response to it as an indication of excellence in the area of social responsibility. In our view, excellence in this area is associated with (and apparently attests to) excellence (in the relative sense) in the sphere of corporate governance.

ETHICAL CODE. A dummy variable that takes the value of 1 if the company has an ethical code, and 0 otherwise. The management's commitment to an ethical code reflects the honest spirit of the company, and suggests better corporate governance.

The category "transparency" in our index includes the following three variables:

EARLY_REPORT. The number of days by which a company's periodical report precedes the date set by law. Early publication of a report indicates that a company

cultivates transparency in its actions and reports to the public as quickly as possible. This concern for the public suggests a higher quality of corporate governance.

PROXY. A dummy variable coded as 1 if a company allows voting by proxy, and 0 otherwise. Voting by proxy improves corporate governance, as it makes vote accessible to all shareholders.

CONF_CALL. A dummy variable coded as 1 if a company holds a conference call prior to the publication of its reports, and 0 otherwise. The increased transparency vis-à-vis shareholders is consistent with a higher quality of corporate governance.

One of the main concerns regarding the variables included in the index is the fact that they overlap, so that at least some of them may be superfluous and may not contribute additional information. In order to examine this possibility, we calculated correlation coefficients between the 19 variables (a full correlation matrix can be obtained from the authors). We found a correlation of 0.49 between MAALA and COMMUNITY. Another three correlation coefficients (out of the 171 we calculated) were close to 0.3 and significant at the 1 percent level, while the rest were not significant. Consequently, we decided not to remove any variable from the index.

Our index for ranking the quality of corporate governance is based on two methods and is presented in four different versions. The first method is the binomial one, in which *each of the variables included in the index receives the value of 1 if it makes a positive contribution to the quality of corporate governance, and the value 0 otherwise*. In cases where the variable included in the index receives a wide range of values, the median is set as the cutoff for the binomial coding.

The index based on the binomial method is presented in two versions. The first gives the same weight to each of the 19 variables. In this version we add up the grades obtained for the various variables and divide them by 19.² We then multiply the result by 100. This index is called the 'General Binomial Index' (CGI_BIN_ALL). In the other version we divide the variables into the four categories presented above, giving each category equal weight. In this version we create a percentile grade within each category (add up all the variables, divide by the number of variables, and multiply by 100). We added up the grades in the categories and divided the result by 4 (i.e., the number of categories). We call this index the 'Group Binomial Index' (CGI_BIN_GRP).

Another way of constructing a CGI index includes all previous variables, but incorporates scalar data where possible. Six of the 19 variables included in the binomial index (MEET_NUM, CONTROL_DIR, EMPLOY_DIR, EXPRT_DIR, CONSULT_AUDIT and EARLY_REPORT) may be ranked by quintiles and accordingly given values between 1 and 5. We divide their scalar value by 5, and the result replaces the binomial value of that variable.

² In companies with missing data (MISSING) we add up the variables for which valid data are available (VALID) and divide by the number of VALID variables. For 11 companies (out of the 141 in our main sample - companies that are traded solely on the Tel Aviv Stock Exchange), valid data was missing for one of the variables: for 4 companies we did not find who was in charge of the internal auditor, and for 7 we did not have data on the fees of the external auditor.

The index constructed using the scalar method also has two versions: The first, CGI_SCL_ALL, gives equal weight to each of the 19 variables in the index, and is calculated analogously to CGI_BIN_ALL. The second, CGI_SCL_GRP, divides the variables into four categories with equal weight, and is calculated similarly to CGI_BIN_GRP.

4. THE METHOD

a. Factors affecting the level of the index of corporate governance quality

We examine which factors affect CGI, our index of corporate governance quality. The model we use is:

$$(1) \quad \text{CGI} = F\{ \text{PUBLIC, INSTITUTE, NO_CONTROL, FAMILY, LEV, ASSETS, STDV, ROE, DIV} \}$$

The model is based on the variables in Black, Jang and Kim (2006b) or on variables that are similar to them in essence.

PUBLIC is the natural log of the number of years the public company has been listed. Assuming that the minimum quality of corporate governance required for listing on the exchange has risen over time (and assuming that veteran companies alter the quality of their corporate governance slowly over time), younger companies should demonstrate a higher quality of corporate governance than older ones.

NO CONTROL is a dummy variable that takes the value of 1 if a company has disperse ownership (no control group), and 0 otherwise. It is customary to assume that the consumption of private benefits will be more limited in disperse ownership firms.

FAMILY is a dummy variable that takes the value of 1 if the company is controlled by a family, and 0 otherwise. Control by a family affords higher private benefits consumption (Barak and Lauterbach, 2008), namely, weaker corporate governance.

LEV is the ratio of long-term debt to total assets (balance-sheet data). Companies with a high level of financial leverage are subject to tight supervision and control (e.g., by banks), and hence have a high quality of corporate governance.

ASSETS is the natural log of the company's total assets. We suggest that larger companies may be subject to greater oversight (e.g., by the authorities and the media), and hence must demonstrate a higher quality of corporate governance.

STDV is the daily standard deviation of the return on shares. We examine whether riskier companies adopt a better quality of corporate governance in order to ease the fears of their investors.

ROE is the return on equity. We examine whether more profitable companies have a better quality of corporate governance. An adequate corporate governance may require expensive resources, so that only more profitable companies can afford it.