

EFFECTIVENESS OF THE TURKISH CORPORATE GOVERNANCE SYSTEM: CEO CHANGES AND PERFORMANCE MEASURES*

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The aim of the current study is to investigate the effectiveness of the Turkish corporate governance system. To reach this aim, the paper first discusses the corporate governance system of Turkey briefly. The measures of effectiveness of a corporate governance system are formulated and CEO turnover is used as a measure. The effectiveness of the Turkish corporate governance system is analyzed by utilizing data from the Istanbul Stock Exchange (ISE) companies. CEO turnover and corporate performance measures are used as dependent and independent variables, respectively, in the logit regressions. Size included in the analysis as a control variable. The evidence suggests that the Turkish corporate governance is not ineffective, but it should immediately be noted that this evidence can not be interpreted as it being effective. The CEOs in Turkey are evaluated based on the pretax income which may be a reflection of a corporate governance system that can be characterized by being bank based, having concentrated ownership structures and low investor protection.

Keywords: corporate governance systems, effectiveness, Turkey

Introduction

The research on corporate governance has its roots in the landmark paper of Jensen and Meckling (1976), who demonstrate that the existence of the agency relationship in the firm leads to conflicts of interest between the shareholders and the managers². Thus, corporate governance stems from the problems associated with the separation of ownership and control of the modern firm. Corporate governance comprises the set of institutional and market based mechanisms that induce self interested managers (controllers) to maximize the value of the firm on behalf of its shareholders (owners) (Denis, 2001; Denis and McConnell, 2003). Since the managers are the ones who make decisions regarding the usage of capital supplied by the owners, there are certain control mechanisms, both internal and external to the firm, to ensure that the managers act in line with the interests of the owners. In sum, corporate governance broadly refers to the mechanisms by which companies are controlled, directed, made accountable, and governed (Macey, 1997; Peck and Ruigrok, 2000). All these mechanisms have become the focus of many studies and attracted considerable amount of research attention³.

In order to align the interest of managers, who, as Fama (1980) states, invest their human capital as well as some fraction of their wealth, and shareholders, who invest their

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2 For a discussion of sources of conflict, see Denis (2001).

3 See for example, Shleifer and Vishny (1997), Denis (2001) on general corporate governance; Denis and McConnell (2003) on international corporate governance; Yafeh (2000) on Japanese corporate governance, Lee (1998) on Korean corporate governance, Claessens and Fan (2002) on Asian corporate governance, Estrin and Wright (1999) on former Soviet Union corporate governance.

financial capital in the firm, different corporate governance systems that utilize the corporate governance mechanisms differently have emerged. These systems continue to evolve as optimal responses to different legal origin, cultures, history and corporate missions (Puffer and McCarthy, 2003).

As La Porta et al. (1998, 2000) discuss in detail and put forth clearly, the legal system of a country plays the major role in shaping the way investors exercise their power over management. The legal system affects mainly the role of the capital markets as a source of funds and ownership structures of firms⁴. Thus, in return the corporate governance system in a country evolves based on the laws that protect investors and the enforcement of these laws. In other words, if there is poor investor protection in a country, then this country develops substitute mechanisms such as concentrated ownership structures, legal reserve requirements, and mandatory dividends (Shleifer and Vishny, 1997; La Porta et al, 2000). It should also be emphasized that an ideal corporate governance system requires congruence among institutions (Yafeh, 2000; Hoskisson, Yiu and Kim, 2004).

The studies on corporate governance systems point out both the weaknesses and the strengths of these systems. Thus, as Shleifer and Vishny (1997) states no theory or evidence tells which corporate governance system is the best. In compliance with this point, it is also well documented that due to forces such as globalization, integration of capital markets, increase in product market competition, these systems are in convergence (Perotti and von Thadden, 2003; Miller 2003; Carati and Tourani-Rad, 2000). As Rubach and Seborá (1998) states “convergence can be viewed as the adoption of the best practices of the existing systems” and as much as countries “firms can adopt structures and mechanisms from different systems to gain competitive advantage.” This process should take into account the legal system, the culture, history and institutional environment which are the main obstacles to convergence and the basis for corporate governance systems (Yafeh, 2000; Macey and Miller, 1995; McCarthy and Puffer, 2002; Hoskisson, Yiu and Kim, 2004). Nevertheless, there is no consensus on the factors that determine the optimal corporate governance structure and there is no “one-size-fits all” structure (Rubach and Seborá, 1998; Denis, 2001; Denis and McConnell, 2003; Yoshikawa and Phan, 2003). It can be concluded that every system should be evaluated and improved separately. Therefore, the focus of attention should be diverted to the measurement of the effectiveness of the corporate governance systems.

In light of the above explanations, the present paper aims to investigate the effectiveness (ineffectiveness) of the Turkish corporate governance system. To reach this aim, the first section will be devoted to a brief discussion of the Turkish corporate governance system. In the second section, the framework for measuring the effectiveness of a corporate governance system will be formulated based on the corporate governance literature on this issue. The third part will provide the data and summary statistics of the sample of the study which will be followed by the fourth part which will exhibit the empirical findings of the analysis of the effectiveness (ineffectiveness) of the Turkish corporate governance system using data from the Istanbul Stock Exchange (ISE) companies. The fifth part will summarize the findings and discuss their implications.

4 La Porta et al. (1999) investigates the corporate ownership structure in 27 countries and points out to the conflicts between controlling shareholders and minority shareholders.

I. Turkish Corporate Governance System

The studies that investigate the Turkish corporate governance system focus mainly on the ownership structure. Since Turkey is a civil law country, as La Porta (1998) states the emphasis is on the controlling shareholders rather than capital markets. As Ararat and Uğur (2003) states low liquidity, high volatility, high cost of capital and limited new capital formation can be listed as the characteristics of the Turkish capital market. That is, the capital market is not perceived as a source of funds and one of the key corporate governance issues is developing an equity culture (IIF, 2005).

Ararat and Uğur (2003) also conclude that the shortcomings in the legal and regulatory framework increase the risk of investing in the Turkish capital market. Their argument supports La Porta et al (1998) which rates Turkey two out of six in a 40 country assessment with respect to shareholder rights. Moreover, as the OECD (2003) points out the changes in corporate organizations have led to changes in the Turkish corporate law. Turkey is still in the process of reforming its institutional and legal structures. Capital Markets Board has built a committee including experts from ISE and Turkish Corporate Governance Forum and in June 2003 has issued the “Corporate Governance Principles of Turkey”.

Shleifer and Vishny (1997) argue that if there is poor investor protection in a market, to avoid the negative outcomes of such circumstances the country develops substitute corporate governance mechanisms such as concentrated ownership, mandatory dividends and legal reserve requirements. All of these substitute mechanisms exist in Turkey. Demirağ and Serter (2003) and Yurtoğlu (2000), who investigate the ownership structure as an alternative corporate governance mechanism in Turkey, state that the ownership structure is pyramidal and concentrated. Demirağ and Serter (2003) further provide a thorough analysis of the ownership structures of 100 Turkish firms and conclude that family ownership is common and the firms acquire a bank in the further stages of their development. In contrast to La Porta (1998)’s argument that concentrated ownership structures act as substitutes for markets for corporate control, this structure affects the corporate performance negatively and its expected role as an alternative disciplinary corporate mechanism does not translate into increased firm value as expected in Turkey (Yurtoğlu, 2000; Gönenç, 2004). Kula (2005), on the other hand, taking a different stand investigates small and not listed companies. He concludes that the separation of chairman and general manager positions in these firms is reflected positively on the firm performance.

In sum, the characteristics of the Turkish corporate governance system can be listed as concentrated ownership, pyramidal structures, family owned companies, bank-based, and low investor protection.

II. Effectiveness of Corporate Governance Systems

Shareholders in emerging markets as well as in developed markets are willing to pay a premium for good governance standards (Campos et al., 2002). Thus, the establishment of an effective corporate governance system is essential. To assess the performance or effectiveness of a corporate governance system, instead of investigating the corporate governance mechanisms, the focus should be on corporate governance outcomes (Macey 1997 and 1998; Gibson, 2003). It is well documented that even though the corporate governance mechanisms vary across countries the outcomes are similar (Kaplan, 1994;

Gibson, 2003). Hence, all corporate governance systems no matter how they are structured, aim to reduce the agency conflicts inherent in the modern corporation.

Before proceeding with the approaches to measuring the performance of a corporate governance system, it should be noteworthy to determine the characteristics of a poor system. A poor governance system is characterized as one that comprises closely held corporations often by the founding family, weak enforcement of shareholders' legal rights and the need to improve accountability and transparency (Gibson, 2003). Macey (1997, 1998) states that there are no formalized and generally accepted criteria for determining if a particular system of corporate governance system is working. It should be noted that the OECD Principles of Corporate Governance (2004) and various corporate governance indexes (i.e., Standard & Poor's Corporate Governance Index) focus on the characteristics of corporate governance mechanisms rather than outcomes.

Macey (1997, 1998) suggests three ways to measure empirically the performance of corporate governance systems; i) to determine the level of private benefits of control measured by the voting premium paid by investors, ii) willingness of entrepreneurs to make initial public offerings of stock, and iii) analyzing the functioning of internal and external markets for corporate control⁵. That is, i) the premium paid by investors for voting stock can be used as a signal of poor governance since it proves that the investors receive private benefits of control; ii) the investors will be more willing to purchase the stock of companies that go public if the governance system is perceived to be good; iii) if the market for corporate control functions efficiently the poor performing managers will be replaced (Macey, 1997, 1998).

Even though, all three measures should be considered together to determine the performance of a corporate governance system, the focus of many studies and the present study has been the functioning of internal and external markets for corporate control. Manne (1965) and Macey (1997) argue that it is more advantageous to replace inefficient management in case of a poor performing corporate governance system through a takeover scheme or through appointments of new management (by blockholders, institutional investors) rather than costly bankruptcy proceedings. Within this context, the performance of a corporate governance system can be evaluated by investigating the link between corporate performance and CEO turnover (Kaplan, 1994; Abe 1997; Gibson, 2003). Thus, an effective governance system requires poor performing managers to be replaced.

The studies that examine the relationship between corporate performance and CEO turnover test this relationship by utilizing different measures of performance. Some focus only on market based measures, whereas many others choose to test the relationship by utilizing both market based and accounting based measures⁶. Huson et al. (2004) also investigate the post-CEO turnover corporate performance arguing that it should improve

5 See Macey (1997, 1998) for a detailed discussion of these measures, see Zingales (1994) and Chung and Kim (1999) for the analysis of the relationship between voting premium and the performance of corporate governance systems in Italy and Korea, respectively.

6 See for market based measures Warner et al. (1988) for the U.S.; Kang and Shivdasani (1996) for Japan and market-based and accounting based measures Kaplan (1994) for the U.S. and Japan; Abe (1997) for Japan; Denis et al. (1997) and Parrino (1997) for the U.S.; Campbell and Keys (2002) for South Korea; Volpin (2002) and Brunello et al. (2003) for Italy; Gibson (2003) for 8 emerging markets; Aviazian et al. (2004) for China.

following the CEO turnover in a well functioning corporate governance system. Thus, they provide supporting evidence to their argument.

The findings of the studies suggest that successful or efficient governance systems penalize CEOs of firms with poor performance. That is, as Kaplan (1994) suggests the reward – performance relations are generally similar with some differences. Abe (1997) also emphasizes that different measures of firm performance affect CEO turnover differently. In other words, contemporaneous sales growth, employment growth, negative income significantly affect CEO turnover probability while stock returns and income growth are significant in the long term. Campbell and Keys (2002), Gibson (2003) and Aviazian (2004) provide evidence supporting the above arguments that poor performance is associated to a higher likelihood of CEO turnover in emerging markets as well as developed markets. The findings of these studies imply that the corporate governance systems in emerging markets are not ineffective. However, accounting based measures of corporate performance point to a stronger relationship between CEO turnover and financial performance, and only extreme levels of change in stock price affect the probability of CEO turnover in both developed and emerging markets as argued by Warnet et al. (1988) and Gibson (2003).

Denis et al. (1997), Parrino (1997) and Volpin (2002) suggest that the ownership structure plays an important role in the relationship of CEO turnover and corporate performance. They argue that when the managers also hold shares of a company, they retain their positions longer, that is the higher managerial ownership insulates managers from internal monitoring efforts. On the other hand, outside blockholders or non-CEO controlling shareholders act as a substitute for outside members on board reducing agency costs. Volpin (2002) and Brunello et al. (2003) argue that poor governance is implied by low sensitivity of turnover performance when controlling shareholders are also top executives. On the contrary, Denis et al. (1997) states high managerial ownership should not be interpreted as being inefficient but efficient because it better aligns the interest of managers and those of shareholders. Gibson (2003), on the other hand, provides evidence that when the firm has a domestic private large shareholder, the relationship between CEO turnover and corporate performance weakens in emerging markets.

Kang and Shivdasani (1996) and Huson et al. (2004) takes the ownership structure effect analysis one step further and investigate outside succession of a CEO. They suggest that outside succession increases with ownership by corporate blockholders and outside directors on the board. They argue that the negative relationship between CEO turnover and corporate performance is statistically significant when turnover is forced and the successor is an outsider. The outside succession effect is also related with firm size and industry. Thus, smaller firms appoint outsiders but outside succession varies across industries based on the homogeneity of the industry (Parrino, 1997).

In sum, the existence of different corporate governance systems is well documented. However, the outcomes of these systems are found to be similar. The negative relationship between CEO turnover and corporate performance weakens when there is managerial ownership and strengthens when there is outside succession. Accounting based corporate performance measures come out to be more significant in this relationship compared to the market based measures.

In light of the above studies, the present study aims to investigate the effectiveness (ineffectiveness) of the Turkish corporate governance system by analyzing the relationship

between CEO turnover and corporate performance. It should be kept in mind that a significant negative relationship only points to not being ineffective and such a relationship on its own, can not prove the contrary, that corporate governance is effective (Macey, 1997, 1998; Gibson, 2003).

III. Data and Summary Statistics

The study used the data on the nonfinancial manufacturing firms listed in Istanbul Stock Exchange (ISE) which had a change in their CEOs during the period 1996-2003. The firms with missing data were excluded from the sample. The final sample comprised of 1010 firm year observations. The yearbook of companies is used to determine the CEO changes. To investigate the link between CEO turnover and corporate performance, the information on the CEO change are matched with the financial performance variables. The financial performance variables are calculated based on the firms' financial statements at the ISE website. Since the dependent variable is a binary variable, following the studies discussed in the previous section, to test whether a negative relationship between probability of turnover and firm performance exists, the following logit regression is estimated.

$$\text{Prob \{CEO turnover\}} = f(\beta \text{ firm performance} + \gamma \text{ control variable})$$

where β denotes the relationship tested. Size is included in the equations as a control variable.

CEO Turnover Data

The CEO change years are collected from the yearbook of companies and ISE weekly bulletins. The reason of the change is stated very briefly in many of the cases in the ISE weekly bulletins which made it not possible to distinguish forced departures. Majority of the cases were stated as "resignation" but the reasons were not provided. Moreover, it was not possible to get detailed information on CEO characteristics such as age, tenure and if the successor is an outsider. Thus, all CEO changes are included in the sample without distinction.

Table 2 presents the number of firms which had a change of a CEO in each year of the study period. The CEO variable used in the analysis is a dummy variable which takes the value of 1 if there is a change in the CEO in a year and 0 otherwise.

Table 2: Distribution of Firms with CEO Changes on a Yearly Basis

Year	Number of Firms	Number of Firms with CEO Changes	% of Firms with CEO Changes
1996	101	0	0
1997	118	14	11.86
1998	126	22	17.46
1999	139	25	17.99
2000	142	31	21.83
2001	143	25	17.48
2002	144	28	19.44
2003	97	17	17.53

Corporate Performance Data

Studies in the literature mainly use return on assets, sales growth, stock return, change in return on assets and negative pretax income as corporate performance variables. However, the way these variables are computed varies across studies. These variables and their definitions as used in this study are presented in Table 3. It should be noted that these performance variables are not adjusted for industry means since they were not available for the whole sample period. Only the stock return is market adjusted.

As can be seen from Table 3, four different definitions of earnings is used in the study to compute return on assets and the change in earnings to total assets ratio. These are i) earnings before tax including extraordinary items (EBT 1), ii) earnings before tax excluding extraordinary items (EBT 2), iii) earnings before interest and taxes including extraordinary items (EBIT 1), iv) earnings before interest and taxes excluding extraordinary items (EBIT 2). The variables are put into the analysis individually and all together. The earnings definition is matched for the return on assets and change in earnings to total assets ratio variables and the same definition is used in the estimation of the logit regressions.

The longitudinal evaluation of corporate performance of Abe (1997) is not followed in the present study due to data constraints. However, the relationship between CEO turnover and corporate performance is tested by using contemporaneous values of corporate performance.

Table 3: Corporate Performance Variables

Market Based Variable	
Stock Return (RET)	Annual stock return – Annual return on ISE 100 Index
Accounting Based Variables	
Negative Pretax Income Dummy (PreInc)	
	1 if pretax income is negative, 0 otherwise
Sales Growth (SaleGro)	
	Ln difference in sales
Return on Assets	
(ROA1)	Earnings Before Tax (incl. extraordinary items) / Total Assets
(ROA2)	Earnings Before Tax (excl. extraordinary items) / Total Assets
(ROA3)	Earnings Before Interest and Taxes (incl. extraordinary income) / Total Assets
(ROA4)	Earnings Before Interest and Taxes (excl. extraordinary income) / Total Assets
Change in Earnings / Total Assets	
(CEBT1TA)	Change in Earnings Before Tax (incl. extraordinary items) / Total Assets
(CEBT2TA)	Change in Earnings Before Tax (excl. extraordinary items) / Total Assets
(CEBIT1TA)	Change in Earnings Before Interest and Taxes (incl. extraordinary income) / Total Assets
(CEBIT2TA)	Change in Earnings Before Interest and Taxes (excl. extraordinary income) / Total Assets

Table 4 provides information on the minimum, maximum and mean values of all the corporate performance variables of the whole sample. Table 5 presents the means and

standard deviations of the variables for each subsample of CEO variable used in the analysis. It also provides the F statistic for the comparison of the means of each subsample. As can be seen from the table, means of sales growth and return on assets are statistically different between the subsamples formed based on the existence of a CEO change. The expected negative relationship can be observed by examining the means of the no change in CEO and change in CEO subsamples for each performance variable except sales growth.

Table 4: Descriptive Statistics of Performance Variables

Variable	N	Minimum	Maximum	Mean	Std Dev.
Stock Return	953	-5.71	9.31	-0.8355	1.45365
Sales Growth	916	10.66	21.61	16.0874	1.57488
ROA1	1010	-2.27	0.62	0.0672	0.21626
ROA2	1010	-3.50	0.60	0.0709	0.22187
ROA3	1008	-0.95	4.22	0.1933	0.22198
ROA4	1009	-6.35	0.57	-0.0552	0.40843
CEBT1TA	976	-1.80	3.44	0.0211	0.21335
CEBT2TA	976	-2.03	2.64	0.0213	0.20427
CEBIT1TA	974	-1.76	3.26	0.0536	0.18775
CEBIT2TA	976	-4.56	3.23	-0.0108	0.35118

Table 5: Means and Standard Deviations of the Variables Grouped on CEO Variable

Variable	No Change in CEO		Change in CEO		F Statistic
	Mean	Std. Dev.	Mean	Std. Dev.	
Stock Return	-0.8418	1.4669	-0.8038	1.3883	0.089
Sales Growth	16.0191	1.5463	16.4513	1.6785	9,277**
ROA1	0.0748	0.2149	0.0275	0.2196	6.545**
ROA2	0.0802	0.2186	0.0222	0.2329	9.379**
ROA3	0.1970	0.1978	0.1740	0.3201	1.457
ROA4	-0.0420	0.3956	-0.1241	0.4653	5.519*
CEBT1/TA	0.0220	0.1847	0.0166	0.3229	0.084
CEBT2/TA	0.0237	0.1887	0.0091	0.2708	0.677
CEBIT1/TA	0.0547	0.1584	0.0480	0.2958	0.173
CEBIT2/TA	-0.0086	0.3487	-0.0220	0.3646	0.195

* Significant at the 5% level.

** Significant at the 1% level.

Control Variables

The literature reviewed in the previous section determines industry, year and size as control variables. In the present study, size is used as a control variable. Three different measures of size are used in the analysis. These are the number of employees, the natural logarithm of sales and the natural logarithm of total assets. Each equation is estimated using three size measures separately.

Table 6 presents the means and standard deviations of the size variable for each subsample of CEO variable used in the analysis. It also provides the F statistic for the comparison of the means of each sample. The mean size is statistically different between the

subsamples. Moreover, the firms with a CEO change are bigger with respect to all size measures compared to the ones without a CEO change.

Table 6: Means and Standard Deviations of the Size Variable Grouped on CEO Variable

Size Variable	No Change in CEO		Change in CEO		F Statistic
	Mean	Std. Dev.	Mean	Std. Dev.	
Number of Employees	810	1044	1289	1707	22.362**
Ln Sales	17.0926	1.4997	17.6127	1.5077	16.336**
Ln TA	16.9848	1.4755	17.5558	1.4742	20.337**

* Significant at the 5% level.

** Significant at the 1% level.

IV. Empirical Findings

The logit regression stated above for each of the performance measures are estimated separately. Each contemporaneous measure of corporate performance and size as a control variable are used to estimate logit equations on a single performance variable. The logit regression is also estimated for the five performance measures together to estimate multivariate equations. Size is again included as a control variable.

Table 7, 8 and 9 present the findings of the estimation of the logit regression for the individual performance variables using the three different measures of size. In all logit regressions, the size control variable is found to be significant at 1% level and with a positive sign. These results even though omitted from the tables, confirm expectations. That is, the positive relationship may be explained as companies getting larger put in place better corporate governance systems.

As can be seen from the Tables 7 through 9 market based performance measure, market adjusted stock return has the expected negative sign, however it is not statistically significant. On the other hand, except the negative pretax income dummy variable all the other accounting based measures have the expected negative signs implying that as the performance of the company based on accounting measures declines, the likelihood that there is a CEO change increases. The coefficients of pretax income, ROA1, ROA2, ROA4 are statistically significant in all tables.

The sales growth variable has a positive sign in Table 7 contrary to expectations whereas in Tables 8 and 9 where the size variables are ln total assets and ln sales respectively, its sign is negative as expected. It is not statistically significant in any of the equations. The pretax income dummy has a positive sign pointing to a positive relationship between CEO turnover and negative pretax income as expected. This implies that if the company incurs a negative pretax income, the probability of a change in the CEO increases. None of the performance measures that take into consideration change in earnings was found statistically significant even though they have negative coefficients as expected in all equations.

**Table 7: Logit Regressions of CEO Change on a Single Performance Variable
(SIZE = Number of EMPLOYEES)**

Variable	Logit Coefficient (t-value)	Pseudo R²	Goodness of Fit Statistic (p value)
Stock Return	0.033260 (0.537727)	0.022415	9.6899 (0.4963)
Sales Growth	0.049139 (0.715253)	0.025502	6.2821 (0.4862)
PreIncome	0.732212 ^{***} (3.897738)	0.037006	6.4129 (0.7234)
ROA1	-0.925547 ^{**} (2.542007)	0.012876	9.2733 (0.0366)
ROA2	-1.085468 ^{***} (2.883621)	0.031144	10.2714 (0.0528)
ROA3	-0.668388 (1.221459)	0.022456	4.9882 (0.8540)
ROA4	-0.432908 ^{**} (2.438788)	0.027157	3.6197 (0.9219)
CEBIT1/TA	-0.241042 (0.475444)	0.020691	8.3786 (0.5613)
CEBIT2/TA	-0.116786 (0.468145)	0.020745	5.9862 (0.7308)
CEBT1/TA	-0.151577 (0.346256)	0.020638	3.2290 (0.9741)
CEBT2/TA	-0.399569 (0.897967)	0.021431	4.8952 (0.9081)

* statistically significant at 10% level

** statistically significant at 5% level

*** statistically significant at 1% level

In addition to a single performance variable, all logit regressions include a constant and a size variable which is the number of employees. The pseudo R² is defined as $1 - L/L_0$, where L is the logit regression's log likelihood and L₀ is the log likelihood of a logit regression with constant only. The logit regression goodness of fit test is the Hosmer-Lemeshow test, with the data divided into 10 groups with a χ^2 distribution

**Table 8: Logit Regressions of CEO Change on a Single Performance Variable
(SIZE = Ln TA)**

Variable	Logit Coefficient (t-value)	Pseudo R ²	Goodness of Fit Statistic (p value)
Stock Return	-0.045615 (-0.716356)	0.022730	14.2775 (0.1270)
SalesGrowth	-0.130019 (1.232856)	0.024307	3.6889 (0.9540)
PreIncome	0.672442*** (3.602740)	0.036325	3.3559 (0.7631)
ROA1	-0.805064** (2.218465)	0.027985	8.2887 (0.3509)
ROA2	-0.916612** (2.503508)	0.029982	7.1410 (0.2782)
ROA3	-0.452518 (0.822858)	0.023019	10.1358 (0.4292)
ROA4	-0.425484** (2.321870)	0.028208	10.5743 (0.2090)
CEBIT1/TA	-0.085917 (0.174787)	0.021650	10.7666 (0.2482)
CEBIT2/TA	-0.161568 (0.651982)	0.022291	2.8682 (0.9743)
CEBT1/TA	-0.150012 (0.345676)	0.021954	4.6331 (0.8915)
CEBT2/TA	-0.406207 (0.909814)	0.022768	6.6887 (0.4039)

* statistically significant at 10% level

** statistically significant at 5% level

*** statistically significant at 1% level

In addition to a single performance variable, all logit regressions include a constant and a size variable which is the natural logarithm of total assets. The pseudo R² is defined as $1 - L/L_0$, where L is the logit regression's log likelihood and L₀ is the log likelihood of a logit regression with constant only. The logit regression goodness of fit test is the Hosmer-Lemeshow test, with the data divided into 10 groups with a χ^2 distribution

**Table 9: Logit Regressions of CEO Change on a Single Performance Variable
(SIZE = Ln SA)**

Variable	Logit Coefficient (t-value)	Pseudo R ²	Goodness of Fit Statistic (p value)
Stock Return	-0.043543 (0.681616)	0.017904	6.5181 (0.5643)
SalesGrowth	-0.194933 (1.430372)	0.020682	13.6053 (0.1838)
PreIncome	0.708816*** (3.800958)	0.033276	24.2768 (0.0002)
ROA1	-0.863692** (2.411508)	0.024396	12.0748 (0.0719)
ROA2	-1.008545*** (2.740289)	0.027029	8.9346 (0.1416)
ROA3	-0.664884 (1.211513)	0.019611	7.5075 (0.2528)
ROA4	-0.394626** (2.269285)	0.023281	11.7097 (0.1956)
CEBIT1/TA	-0.174462 (0.352842)	0.016872	7.3701 (0.6770)
CEBIT2/TA	-0.155943 (0.646189)	0.017298	8.1752 (0.6808)
CEBT1/TA	-0.185816 (0.429451)	0.017048	7.9193 (0.6127)
CEBT2/TA	-0.430995 (0.982892)	0.017941	8.2216 (0.4220)

* statistically significant at 10% level

** statistically significant at 5% level

*** statistically significant at 1% level

In addition to a single performance variable, all logit regressions include a constant and a size variable which is natural logarithm of total sales. The pseudo R² is defined as $1 - L/L_0$, where L is the logit regression's log likelihood and L₀ is the log likelihood of a logit regression with constant only. The logit regression goodness of fit test is the Hosmer-Lemeshow test, with the data divided into 10 groups with a χ^2 distribution

As well as testing each performance measure separately, the performance measures are also tested together. That is, the logit regressions are run by using multiple performance measures in the analysis. The earnings definition used for return on asset variable is matched with the same earnings definition for change in assets to total assets variable. Table 10, 11 and 12 provide the results of the logit regressions for the multiple performance measures. Three types of logit regressions are run each using a different measure of size.

In these regressions, all the stock return coefficients are insignificant with expected negative coefficients except in Table 10. On the other hand, ROA1, ROA2, ROA3, CEBT1/TA, CEBT2/TA, and CEBIT2/TA have negative coefficients whereas all the other accounting based measures have positive coefficients. Sales growth on the other hand has both negative and positive coefficients. Neither of the coefficients of these performance measures is statistically significant. One reason may be the correlation between the accounting measures which reduces their values even though they were found to be significant

in the equations when included separately. Abe (1997) documented a similar result in his study for Japan.

Table 10: Logit Regressions of CEO Change on a Multiple Performance Variable (SIZE = Number of EMPLOYEES)

Variable	Earnings = EBT1	Earnings = EBT2	Earnings = EBIT1	Earnings = EBIT2
Stock Return	0.0252 (0.3697)	0.0237 (0.3476)	0.0221 (0.3241)	0.0265 (0.3899)
Sales Growth	0.0509 (0.6962)	0.0524 (0.7153)	0.0581 (0.7904)	0.0502 (0.6887)
PreIncome	0.5751** (2.0945)	0.4759* (1.6627)	0.5261** (2.2342)	0.6738*** (2.6470)
ROA1	-0.2942 (0.4031)			
ROA2		-0.5709 (0.7963)		
ROA3			-0.9556 (0.9752)	
ROA4				0.03373 (0.0854)
CEBT1/TA	-0.0901 (0.1369)			
CEBT2/TA		-0.1917 (0.3102)		
CEBIT1/TA			0.0649 (0.0683)	
CEBIT2/TA				-0.0478 (0.1315)
<i>Pseudo R²</i>	0.0401	0.0410	0.0419	0.0397
<i>Goodness of Fit (p value)</i>	5.3827 (0.7928)	3.8563 (0.7678)	9.1715 (0.1249)	17.5114 (0.0714)

* statistically significant at 10% level

** statistically significant at 5% level

*** statistically significant at 1% level

The t-values for the coefficients are in the parentheses. In addition to the multiple performance variables, all logit regressions include a constant and a size variable (number of employees). The pseudo R^2 is defined as $1 - L/L_0$, where L is the logit regression's log likelihood and L_0 is the log likelihood of a logit regression with constant only. The logit regression goodness of fit test is the Hosmer-Lemeshow test, with the data divided into 10 groups with a χ^2 distribution.

The market adjusted stock return has positive coefficients when the size measure is number of employees whereas it is negative confirming expectations when other size measures are used in the equations. However, they are not found to be statistically significant in either of the equations. This may suggest that even though the sample firms are listed at Istanbul Stock Exchange, stock return is not considered to be a major determinant of corporate performance hence it has no relation to CEO performance.

**Table 11: Logit Regressions of CEO Change on a Multiple Performance Variable
(SIZE = Ln TA)**

Variable	Earnings = EBT1	Earnings = EBT2	Earnings = EBIT1	Earnings = EBIT2
Stock Return	-0.0349 (0.5166)	-0.0348 (0.5162)	-0.0385 (0.5747)	-0.0330 (0.4904)
Sales Growth	-0.0591 (0.5332)	-0.0522 (0.4695)	-0.0377 (0.3252)	-0.0631 (0.5760)
PreIncome	0.5453** (1.9654)	0.4799* (1.6862)	0.4722** (2.0313)	0.5956** (2.1935)
ROA1	-0.0015 (0.0019)			
ROA2		-0.1794 (0.2355)		
ROA3			-0.8119 (0.8065)	
ROA4				0.1347 (0.2967)
CEBT1/TA	-0.1753 (0.2563)			
CEBT2/TA		-0.2984 (0.4439)		
CEBIT1/TA			0.2425 (0.2522)	
CEBIT2/TA				-0.1385 (0.3616)
Pseudo R²	0.0334	0.0338	0.0342	0.0336
Goodness of Fit (p value)	4.9368 (0.8868)	2.7087 (0.9224)	6.7520 (0.5209)	8.4574 (0.5772)

* statistically significant at 10% level

** statistically significant at 5% level

The t-values for the coefficients are in the parentheses. In addition to the multiple performance variables, all logit regressions include a constant and a size variable (natural logarithm of total assets). The pseudo R² is defined as $1 - L/L_0$, where L is the logit regression's log likelihood and L₀ is the log likelihood of a logit regression with constant only. The logit regression goodness of fit test is the Hosmer-Lemeshow test, with the data divided into 10 groups with a χ^2 distribution.

In sum, the findings show that mainly the negative pretax income has more explanatory power of CEO turnover and influence the probability of a CEO change. That is, as a company's performance declines in terms of pretax income as a measure of performance, the probability of a change in the CEO increases. In other words, negative pretax income variable stands out to be a major determinant. The market based measure, namely the stock return is not a determinant of the probability of a CEO turnover.

**Table 12: Logit Regressions of CEO Change on a Multiple Performance Variable
(SIZE = Ln SA)**

Variable	Earnings = EBT1	Earnings = EBT2	Earnings = EBIT1	Earnings = EBIT2
Stock Return	-0.0398 (0.5864)	-0.0409 (0.6044)	-0.0449 (0.6681)	-0.0369 (0.5469)
Sales Growth	-0.1124 (0.7909)	-0.1042 (0.7310)	-0.0969 (0.6503)	-0.1206 (0.8540)
PreIncome	0.5528** (2.0246)	0.4606* (1.6509)	0.4575** (1.9619)	0.6339** (2.4663)
ROA1	-0.0668 (0.0891)			
ROA2		-0.3522 (0.4828)		
ROA3			-1.1359 (1.1225)	
ROA4				0.1829 (0.4385)
CEBT1/TA	-0.1666 (0.2488)			
CEBT2/TA		-0.2450 (0.3952)		
CEBIT1/TA			0.4720 (0.4609)	
CEBIT2/TA				-0.1668 (0.4307)
<i>Pseudo R²</i>	0.0312	0.0318	0.0331	0.0314
<i>Goodness of Fit (p value)</i>	15.2867 (0.0264)	12.1430 (0.1697)	23.7016 (0.0206)	9.0757 (0.3539)

* statistically significant at 10% level

** statistically significant at 5% level

The t-values for the coefficients are in the parentheses. In addition to the multiple performance variables, all logit regressions include a constant and a size variable (natural logarithm of total sales). The pseudo R² is defined as $1 - L/L_0$, where L is the logit regression's log likelihood and L₀ is the log likelihood of a logit regression with constant only. The logit regression goodness of fit test is the Hosmer-Lemeshow test, with the data divided into 10 groups with a χ^2 distribution.

V. Concluding Comments

The corporate governance systems vary across countries based on the legal system, protection of investor rights, history and culture. Even though some convergence in these systems is observed and OECD corporate governance principles around the world are being enforced, it is argued by many researchers that different governance systems will evolve. Thus, there is no "one-size-fits-all" structure.

Besides the investigation of corporate governance systems, it is also crucial to examine the effectiveness of corporate governance systems. To test the effectiveness (ineffectiveness) of a system, the focus should be on the outcomes. One major outcome of an effectively working governance system is the CEO turnover when the corporate performance is poor. The present paper has investigated the effectiveness (ineffectiveness) of the Turkish corporate governance system by testing the relationship between CEO turnover and

performance measures using logit regressions. Thus, it is worth noting that only one dimension of effectiveness is not sufficient to state whether a system is effective.

The findings of the study provide evidence that the stock market return is not a significant measure and a determinant of CEO turnover. However, it should be noted that this can be a reflection of Turkey being a civil law country and having concentrated ownership structures. That is, as a developing market, the capital market of Turkey has not been a major source of funds for companies and the percentage of shares traded is relatively low. As a result, the concentrated ownership structure is developed as a substitute of the discipline provided by the investors in the capital markets. The stock price performance may also have an effect on the probability of CEO turnover in the long run or if it is at extreme levels as documented by Warnet et al. (1988), Abe (1997) and Gibson (2003).

The present study used four different measures of earnings in the analysis. However, earnings before tax come out to be the major measure. If the pretax income is negative, then the CEO turnover probability is high. In the logit regression estimates, the negative pretax income variable has greater influence compared to measures of the changes in earnings to assets or return on assets variables. The evidence on the sales growth variables in all estimates is also inconclusive.

The findings should be evaluated by taking into account the limitations of the study. In the analysis, only size as a control variable is included. The ownership structures of companies were not considered in the analysis. Due to the lack of detailed information on the CEOs, CEO characteristics had to be excluded from the analysis. The inclusion of industry adjusted accounting based measures may have strengthened the relationship between these measures and the probability of CEO turnover.

In sum, the present study has provided evidence that the Turkish corporate governance system is not ineffective, but this evidence on its own can not be interpreted as it being effective. The CEOs in Turkey are evaluated based on the accounting based measures mainly the pretax income figure which may be the reflection of a corporate governance system that can be characterized by being bank based, having concentrated ownership structures and low investor protection.

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