A COMPARATIVE ASSESSMENT OF CORPORATE GOVERNANCE RATINGS WITH MULTIPLE-CRITERIA DECISION ANALYSIS: A CASE OF BIST XKURY

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Abstract

This paper aims at providing the comparative analysis of corporate governance rankings, generated by major multiple-criteria decision making tools, of fifty-six firms listed as of 2014 in Borsa Istanbul Corporate Governance Index (BIST XKURY). Normally, Capital Market Board requires each BIST XKURY company to have an annual corporate governance rating provided by a licensed rating company. The rating is essentially the weighted average of four components of "shareholder relations" (%25), "transparency and disclosure" (%25), "board of directors" (%35), and "stakeholder relations" (%15). What these ratings lack is the comparative positioning of each company based on their relative distance to the best and worst performing companies. For the purpose of comparatively assessing alternative corporate governance rankings, this study makes use of four major multiple-criteria decision tools, namely; Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS), Analytic Hierarchy Process (AHP), Vise Kriterijumska Optimizacija I Kompromisno Resenje (VIKOR), and Grey Relational Analysis (GRA). The study initially produced an overall average of annual corporate governance rating for each company over their lives in the index from the inception of the index in 2007 to 2014. The lists created by the selected methods exhibit conflicting rankings. The rankings produced by TOPSIS and AHP methods are rather similar to the ranking based on the raw, unprocessed ratings. The inconsistent rankings draw attention to the exercise of caution in generalizing the findings of any method, as other methods have the potential to generate contradicting lists.

Key words: *Borsa Istanbul, Corporate Governance Index, Corporate Governance Score, MCDM, TOPSIS, AHP, VIKOR, GRA.*

I. INTRODUCTION

Following the financial scandals of 2000s, assessment of corporate governance practices has increasingly been regarded as an important requirement shaping investment decisions. Cadbury Report (1993, p.124) defines corporate governance as "…the system by which companies are directed and controlled". According to Shleifer and Vishby (1997, p.737), corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment. There are other approaches, such as Millstein Report (1998, p.27), that widens the horizon of corporate governance to cover the interests of all stakeholders of companies.

The first global set of corporate governance principles was issued by OECD under the name of "OECD Corporate Governance Principles" in 1999, and then was overhauled in 2003. The principles are divided under five broad sections of rights of shareholders, fair treatment of shareholders, the role of direct interest holders in corporate governance, declaration to the public and transparency, and responsibilities of administrative body.

In Turkey, attempts to establish corporate governance principles were initially made by the Banks Association of Turkey in 1999, and TUSIAD in 2002. Eventually, Capital Market Board (CMB) Corporate Governance Principles were issued in 2003 by Capital Market Board, and then updated in 2005, 2010 and 2014 in line with international developments. Another important step with respect to Corporate Governance is the establishment of BIST Corporate Governance Index (XKURY) in 2005, which became effective in 2007. The purpose of BIST XKURY is to calculate price and yield performances of BIST-listed companies with the minimum 7/10 compliance grade of Corporate Governance Principles. Corporate governance compliance grade is given by assessment bodies authorized by CMB. While there were just five companies in the XKURY in 2007, the number of listed companies in the index increased to 50 companies in 2016. As of the end of 2014, the number of the BIST XKURY companies was fifty-six.

The literature reveals no study using multiple-criteria decision techniques to comparatively assess the rating scores within the context of BIST XKURY. This paper addresses the gap in the literature by using mainstream econometric techniques and comprehensive data set.

II. LITERATURE REVIEW

The relationship between corporate governance index and financial performance of companies has been investigated by several studies such as Brown and Caylor, 2004; Drobetz et al., 2004; Klapper and Love, 2004; Black et al., 2006; Adjaoud et al., 2007; Al-Haddad et. Al., 2011; La Porta et. Al., 2002; Brown and Caylor, 2006. As for Turkey, however, there are just a limited number of studies in this respect. Some of those studies have found statistically significant relationship between corporate governance practices and financial performance of firms (Karamustafa et al., 2009; Gürbüz and Ergincan, 2004; Dalgar and Celik, 2011; Sakarya 2011). There are some studies such as Büyüksalvarcı and Abdioglu (2010) that establish no link between financial performance and corporate governance practices.

When the focus is limited to studies using the Corporate Governance Rating as an input variable, it appears that the number of studies is rather scarce. Danies et. al., (2010) underline that corporate governance rating is important for investors and that a company with corporate governance rating is considered more reliable and successful than a company without a corporate governance rating. Isiaka (2014) investigated the relationship between corporate governance ratings of the companies trading in Canada's Corporate Governance Index and their firm performances for the period of 2010-2012. The results of the study features that companies with high corporate governance rating have also high level of financial performance. Gomper et. al., (2003) had found out a similar result confirming that companies with high rating scores have higher market value, higher sales growth and higher profit margins than companies with low rating.

Alali et.al., (2012) investigated whether corporate governance rating has an effect on credit score of company or not. They found that companies with high corporate governance rating have also high credit scores. Accordingly, the enterprises which have high corporate governance rating as a result of corporate governance practices could turn these rating scores into an advantage and receive loans at a lower interest rate. Rani et.al., (2013) searched for the influence of corporate governance ratings on short-term performance of acquiring firms for a sample of companies. Their study concluded that companies with higher corporate governance scores have better short-term performance.

In the study by Su et. al., (2013) ratings of 50 companies trading in Taiwan's Corporate Governance Index were re-ranked using multi-criteria decision making models. The re-rankings were made based on SAW, TOPSIS and VIKOR models. The findings featured that the most accurate results could be obtained by VIKOR model. This study is an attempt to carry out a similar research for BIST XKURY companies.

III. DATA AND ECONOMETRIC METHODOLOGY

This study utilized and comparatively assessed Multi-Criteria Decision Making (MCDM) models for corporate governance ratings. Multi-Criteria Decision Making (MCDM) methods have evolved to accommodate various types of applications. Dozens of methods have been developed, with even small variations to existing methods causing the creation of new branches of research (Valasquez and Hester, 2013, p. 56).

The GRA, TOPSIS, AHP and VIKOR are the methods selected in this study to re-rank corporate governance ratings of BIST XKURY companies in Turkey. According to Su et. al., (2013) multi-criteria utility is based on the composite goals formed by different attributes and is judged according to utility maximization. Multiple attribute decision making methods determine the optimal solution through evaluating the relative importance of different attributes. Presenting a comprehensive analysis by means of alternative rankings of governance ratings provided by Turkey rating vendors could make a contribution by filling a gap in the existing literature.

The Corporate Governance Rating data set covers a 8-year period from 2007 to 2014, with a sample of fifty six firms listed in Borsa Istanbul Corporate Governance Index (BIST XKURY). The data were taken from the annual reports and financial statements of these companies. The list of those 56 companies covered by the study is provided in Table 1.

Table.1: Companies Listed in BIST XKURY as of 2014.

Albaraka	Otokar	Vestel Elektronik	Enka
Anadolu Efes	Park Elektrik	Y&Y Yatirim Ortakliği	Pinar Et ve Un
Arçelik	Petkim	Hürriyet	Boyner
Aygaz	Prysmain	Şekerbank	Aselsan
Bank Asya	TOFAŞ	TAV Airport	Tek Faktoring
Coca Cola	TSKB	Doğuş Otomotiv	İgdaş
Dentaş	TURKAS	Pinar Süt	Darüşşafaka

Doğan	Türk Telekom	Egeli & Co. Yatirim Holding	İş GYO
İhlas Ev Aletleri	Tupraş	Halkbank	Pinar Su
İhlas Holding	Türk Traktör	İş Yatirim	Akbank
İş Leasing	Vakif Menkul	Global Yatirim Holding	Pegasus
Lider	Yapi Kredi	Garanti Factoring	Işiklar Yatirim
Logo	Yazicilar	Garanti Yatirim Ortakliği	Çemaş Döküm
Optima	Doğan Yayin Holding	Creditwest Faktoring	Garanti Emeklilik

The Corporate Governance Rating is broken up into four sub-categories which measure the major components of corporate governance: (a) shareholders, (b) public disclosure and transparency, (c) stakeholders, and (d) board of directors. Each of the sub-indices is weighted to produce the final overall corporate governance rating. The weights are subjectively specified by the CMB as follows: 25% for shareholders, 25% for public disclosure and transparency, 15% for stakeholders and 35% for board of directors. The weights are used to indicate the importance of each of these components to the overall corporate governance rating (Kula and Baykut, 2014:104).

There are only five companies which are authorized to grant corporate governance rating licensed by Capital Markets Board (CMB) in Turkey. These companies are SAHA Rating, JCR, Eurasia Rating, Kobirate and ISS. Among these firms, SAHA Rating is the company that did the highest number of ratings. These rating firms analyze the listed or unlisted companies and rate them in a scale of 1 to 10 in 4 categories. The companies whose general weighted score is 6.5 or higher are accepted to trade in the Corporate Governance Index and they gain right to get a 50% discount on annual listing fee. The table below shows what corporate governance rating scores mean.

Table 2. Definitions of Corporate Governance Ratings

Rating	Definition
9 - 10	The company performs very well in terms of Capital Markets Board's corporate governance principles. It has, to varying degrees, identified and actively managed all significant corporate governance risks through comprehensive internal controls and management systems. The company's performance is considered to represent best practice, and it had almost no deficiencies in any of the areas rated.
7 - 8	The company performs well in terms of Capital Markets Board's corporate governance principles and has qualified to be included in the BIST's (Borsa Istanbul) Corporate Governance Index. It has, to varying degrees, identified all its material corporate governance risks and is actively managing the majority of them through internal controls and management systems. During the rating process, minor deficiencies were found in one or two of the areas rated.
6	The company performs fair in terms of Capital Markets Board's corporate governance principles. It has, to varying degrees, identified the majority of its material corporate governance risks and is beginning to actively manage them. Management accountability is considered in accordance with national standards but may be lagging behind international best practice. During the ratings process, minor deficiencies were identified in more than two of the areas rated.
4 - 5	The company performs weakly as a result of poor corporate governance policies and practices. The company has, to varying degrees, identified its minimum obligations but does not demonstrate an effective, integrated system of controls for managing related risks. Assurance mechanisms are weak. The rating has identified significant deficiencies in a number (but not the majority) of areas rated.
< 4	The company performs very weakly and its corporate governance policies and practices are overall very poor. The company shows limited awareness of corporate governance risks, and internal controls are almost non-existent. Significant deficiencies are apparent in the majority of areas rated and have led to significant material loss and investor concern.

Resource: Saha Corporate Governance Rating, http://www.saharating.com/~saharati/en/services/corporate-governance-rating/corporate-governance-rating-definitions/

For the purposes of this study, firstly the cumulative sum of corporate governance ratings for each company in the index provided by rating companies is taken. Then, this overall cumulative score is divided to number of years the company was listed in the index, resulting in a single figure. The ordering based on those raw ratings is presented in Table 3 under the name of "Normal Ranking".

IV. EMPIRICAL ANALYSIS

This study provided the comparative analysis of the rankings, offered by four models, of corporate governance ratings of 56 companies listed in BIST XKURY as of the end of 2014. The formal corporate governance scores regulated by CMB take values from one to ten. Based on those scores, the study firstly developed a measure of score by taking average of the annual scores for each company over their life in the index till 2014. In Table 3, the column called "Normal Ranking" reports the ranking of the companies based on those raw scores. The remaining columns report the rankings generated by decision methods of TOPSIS, AHP,

GRA and VIKOR.

Table. 3: Result of Analysis

List of Companies	Normal Ranking	TOPSİS Ranking	AHP Ranking	GRA Ranking	VIKOR Ranking
Albaraka	41	34	43	26	56
Anadolu Efes	21	30	23	25	14
Arçelik	18	27	25	46	26
Aygaz	13	17	12	17	12
Bank Asya	44	44	45	52	27
Coca Cola	26	33	33	51	43
Dentaş	49	51	48	5	18
Doğan	25	32	27	31	21
İhlas Ev Aletleri	54	52	55	4	10
İhlas Holding	50	47	52	9	7
İş Leasıng	27	31	21	33	38
Lider	52	54	53	18	17
Logo	39	37	44	28	39
Optima	56	56	56	21	32
Otokar	35	41	41	38	22
Park Elektrik	14	20	10	50	33
Petkim	42	46	46	34	25
Prysmaın	46	50	51	27	16
Tofaş	31	35	39	54	50
Tskb	7	9	5	45	30
Turkas	36	28	31	7	37
Türk Telekom	40	43	40	37	42
Tupraş	30	38	36	47	34
Türk Traktör	43	45	47	53	49
Vakıf Menkul	37	29	37	12	47
Yapı Kredi	20	23	16	49	36
Yazıcılar	34	39	38	48	41
Doğan Yayın Holding	19	18	22	42	13
Vestel Elektronik	28	22	35	15	44
Y&Y Yatırım Ortaklığı	38	26	32	10	46
Hürriyet	29	24	29	22	40
Şekerbank	12	15	19	56	51
Tav Aırport	6	8	7	30	29
Doğuş Otomotiv	32	25	42	11	45
Pınar Süt	11	13	13	39	35
Egeli & Co. Yatırım Holding	17	12	18	17	6
Halkbank	10	19	14	41	19
İş Yatırım	9	6	9	13	11
Global Yatırım Holding	16	16	19	23	28
Garanti Factoring	24	14	26	2	53
Garanti Yatırım Ortaklığı	4	4	4	6	48

Creditwest Faktorıng	48	42	50	1	1
Enka	3	3	3	36	9
Pınar Et Ve Un	5	5	6	24	4
Boyner	23	21	24	20	20
Aselsan	8	7	8	44	8
Tek Faktoring	55	55	54	18	24
İgdaş	33	40	30	32	15
Darüşşafaka	22	11	17	7	3
İş Gyo	15	10	11	3	2
Pınar Su	1	1	2	43	5
Akbank	2	2	1	55	23
Pegasus	45	36	15	14	31
Işıklar Yatırım	51	49	34	40	55
Çemaş Döküm	53	53	49	29	52
Garanti Emeklilik	47	48	28	35	54

As shown in Table 3, the rankings reported by four methods exhibit differences. In TOPSIS method, Pınar Su company has the highest corporate governance rating while Optima is placed a the end of the list. This corresponds to the findings by the normal ranking method.

According to AHP method Akbank is the most effective company within 56 listed companies, and Optima is positioned at the bottom. This method appears to produce ranking similar to normal ranking and TOPSIS methods. However, ranking by GRA method produced quite different results. For GRA method, Creditwest Faktoring company is the most effective while Sekerbank appears to be the least one.

Overall evaluation of the results point to the inconsistent rankings. Pinar Su, for example, ranks first according to two methods (Normal Ranking and TOPSIS) and ranks second and fifth in AHP and VIKOR methods, respectively. However, according to GRA method it ranks 43rd. Akbank, as another example, is the first company in AHP method, and ranks second according to two methods (Normal Ranking and TOPSIS). But, GRA and VIKOR has provided opposite rankings for Akbank. While Akbank company ranks 55th according to GRA method it ranks 23rd in VIKOR method. While Enka is placed within the upper positions in four methods (Normal Ranking, TOPSIS, AHP and VIKOR), GRA method exhibited different outcome by placing this company in 36th position. For IS GYO, all five methods produced consistent rankings. It is placed in the upper echelons in all methods (second in VIKOR method, third in GRA method, tenth according to TOPSIS method and ranks eleventh according to AHP).

V. CONCLUSION

BIST XKURY is rather new index in Borsa Istanbul, being effective since 2007. The number of the companies in the index has steadily increased from five at the inception year to 56 as of the end of 2014. This study attempted to provide comparative listing of corporate governance ratings of those 56 companies over their lives in the index till 2014. Initially, based on annual scores produced by rating companies, an average score is generated for each company covering the period from their listing year in the index to 2014. Then, these raw scores were ranked as "normal ranking". Consequently, four decision methods were employed to generate rankings of the companies based on the average corporate governance scores.

The comparative analysis of those alternative rankings indicate that the generated ranking lists are rather not consistent. As the empirical analysis part of the study provided relevant examples, it is possible to see a company in the upper positions in certain methods, while the same company finds a place in the bottom parts in other methods. But, based on the similarity of the results, the overall and rough grouping could put TOPSIS and AHP methods in the same group. The main implication of the study is that the exercise of caution is required in evaluating the performance of companies as each method might produce a ranking quite different from the other methods. In other words, listing generated by a method should not be approached as the one standing on unshakable grounds. It is apparent that other alternative methods have the potential to offer contradicting listings.

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