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FIRM-SPECIFIC FACTORS AFFECTING THE DECISION TO OBTAIN A CORPORATE GOVERNANCE RATING: EVIDENCE FROM BORSA ISTANBUL*

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Abstract

Many studies have focused on the voluntary disclosure of corporate governance practices. However, the factors affecting the decision to voluntarily obtain a corporate governance rating have not attracted much attention. This study aims to determine the firm-specific factors that influence the decision to obtain a corporate governance rating by public firms listed on Borsa Istanbul. Our findings suggest sources of financing, ownership structure, firm size, and firm age are influential in the decision to obtain a corporate governance rating. Thus, considering these firm-specific factors when designing corporate governance policies may motivate more firms to obtain corporate governance rating. Moreover investors and portfolio managers, being aware of these differences, should not evaluate the firms only based on whether they have a rating but should also have a detailed analysis of their comp-liance reports.

Keywords: Corporate governance, corporate governance index, emerging markets, voluntary corporate governance rating

JEL Classification: G300, G320, C330

GÖNÜLLÜ KURUMSAL YÖNETİM DERECELENDİRMESİ KARARINI ETKİLEYEN FİRMAYA ÖZGÜ FAKTÖRLER: BORSA İSTANBUL'DAN KANITLAR

Öz

Literatürde firmaların kurumsal yönetim uygulamalarının gönüllü olarak raporlanmasına ilişkin birçok çalışma mevcut olsa da, gönüllü olarak kurumsal yönetim derecelendirmesi yaptırma kararlarını etkileyen faktörlere ilişkin araştırmalara pek rastlanmamaktadır. Bu çalışma, Borsa İstanbul'a kote firmaların kurumsal yönetim derecelendirmesi yaptırma kararlarını etkileyen firmaya özgü faktörleri ortaya koymayı amaçlamaktadır. Araştırmanın bulguları finansman kaynakları, sahiplik yapısı, firma büyüklüğü ve yaşının kurumsal yönetim derecelendirmesi yaptırma kararında etkili olduğunu göstermiştir. Bu faktörlerin derecelendirme yaptırma kararına etkisi, kurumsal yönetim derecelendirme notunun kendisi üzerine olan etkilerinden farklı olabilmektedir. Bu nedenle, kanun koyucu ve düzenleyici kurumlar politika tasarımı aşamasında bu farkı göz önüne almalıdırlar. Ayrıca, yatırımcılar ve portföy yöneticileri de firmaları sadece kurumsal yönetim notuna sahip olup olmamalarına göre değil, uyum raporlarının detaylı analizini de yaparak değerlendirmelidirler.

Anahtar Kelimeler: Kurumsal yönetim, kurumsal yönetim endeksi, gelişmekte olan piyasalar, gönüllü kurumsal yönetim derecelendirmesi

JEL Sınıflaması:G300, G320, C330

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1. Introduction

A variety of users ranging from shareholders to creditors need the information to gain an understanding of firms. Corporate disclosure is an important tool for improving the flow of information from firms to these users. With the help of effective corporate disclosure, management can communicate the performance and governance of the firm to outside investors, and as a result, economic decision-making becomes more rigorous. Thus, meaningful and adequate corporate disclosure improves the corporate governance quality (Bhasin, 2010). Annual reports are the basic disclosure tool for firms all around the world but the scope of these reports may change according to the regulatory framework of the countries. Together with the increasing importance of corporate governance, disclosures showing the firms' compliance level to the relevant corporate governance codes have also become important. Therefore, many firms started to provide non-financial information including a significant section on corporate governance practices, attached to their annual reports. As a result, investors had an opportunity to evaluate the quality of each firm's corporate governance system (Othman and Zeghal, 2008).

Firms have been disclosing their corporate governance practices voluntarily until the OECD Corporate Governance Principles were adopted by many countries such as EU member states, Canada, Turkey, etc. in 2005. In some countries like the UK, Canada, and Australia, all of the corporate governance codes are not mandatory, but listed firms are required to disclose their compliance to these codes, based on the "comply or explain" approach. This type of disclosure was not mandatory earlier when corporate governance codes were initially introduced. However, as a result of several firm-specific scandals and financial crises, corporate governance disclosure has become mandatory in many countries, even if compliance to most of the codes were voluntary.

Although corporate governance disclosure has become mandatory in many countries, obtaining a corporate governance rating is mostly voluntary. Some of the stock exchanges around the world encourage public firms to obtain a governance rating, by constructing Corporate Governance Indices consisting of the firms with ratings. To be included in these indices most of the jurisdictions require the firms to be rated over a pre-determined rating level. Eight stock exchanges have a corporate governance index in the world. Brazil and Italy are the first two countries that pioneered the calculation of a corporate governance index. Later in 2003 and 2004, South Korea and South Africa followed Brazil & Italy, respectively. Turkey is the fifth country that started to calculate a corporate governance index in Borsa Istanbul.

According to Grimminger and Benedetta (2013), corporate governance indices play an

important role in enhancing legal and regulatory frameworks and they offer firms an incentive to adopt better governance practices. Two types of approaches are used to construct the indices. In some indices stock exchanges set up a listing tier, and in some they have a rating threshold. Grimminger and Benedetta (2013) also categorized the indices in four different ways:

- *Degree of commitment of listed firms to being part of the index:* As a result of the mandatory special listing rules, listing tiers require a higher degree of commitment.
- *Automatic or voluntary evaluation:* Automatic evaluation of the firms appears to create more credible indices because the listed firms have no other choice than to be evaluated. Mexico, South Africa, and South Korea have an automatic evaluation, however, China, Peru, and Turkey rely on the voluntary application of firms for corporate governance evaluation.
- *Whether there is a cap that limits entry:* If the stock exchange aims to give an impression to the investors that it is difficult to be a part of the index, then they put a cap that limits entry.
- *Whether only governance or broader sustainability criteria are evaluated:* This decision is based upon the primary objective of creating such an index. Some countries, like Turkey, have a separate index for sustainability, but some countries have a broader index that accounts for both corporate governance and sustainability such as in South Africa.

One of the categorization criteria listed above is whether the firm evaluation occurs automatically or voluntarily. Even though some countries require an automatic assessment of the firms' compliance level in their main index, others rely on voluntary evaluations. As a result, a question arises about the driving factors affecting the firms to apply for voluntary corporate governance evaluation. The motivation of the study arises from academic interest to find an answer to this question. In the literature, there are numerous studies, which were conducted to find out the factors affecting the voluntary corporate governance disclosure (during the times when governance disclosure was voluntary and/or for countries where governance disclosure was voluntary), but to our knowledge, there is not any study exploring the factors affecting the voluntary application of listed firms for corporate governance rating.

In line with the above explanations, the objective of this study is to find out the firm-specific factors that affect the decision to obtain a corporate governance rating in Turkey, for the period from 2007 to 2019. Borsa Istanbul offers a unique setting for this study be-

cause Borsa Istanbul Corporate Governance Index (XKURY) is being calculated since 2007. XKURY is composed of the firms that voluntarily go through the corporate governance rating process and that have a minimum aggregate corporate governance rating of 7 out of 10 (70 out of 100). Since these firms discretionarily go through the rating process, it can be assumed that they place more importance on corporate governance aiming for higher quality.

The study aims to contribute to the voluntary corporate governance disclosure literature by trying to answer the question of "What determines the voluntary application for corporate governance rating?" To the best of our knowledge, there is no study exploring the factors affecting the voluntary application of listed firms for corporate governance rating. The second contribution of the study is to the voluntary disclosure literature, in the broader sense, by proposing a new proxy for corporate governance quality which takes the value of 1 if a firm has a corporate governance rating and 0 otherwise. The rationale behind this proxy stems from the availability of a unique sample of firms that take the extra step in their corporate governance practices by obtaining a corporate governance rating. This study assumes that the firms listed on the Borsa Istanbul Corporate Governance Index (XKURY) have higher quality corporate governance practices since they have taken this extra step which can be assumed to be proof of the importance they attach to corporate governance. This assumption enables us to use a different proxy for corporate governance quality than the most commonly used measures which have limitations (Bozec and Bozec, 2012).

The remainder of the study is structured as follows: The first part of the study presents a literature review about voluntary corporate governance disclosure and ratings. Subsequently, we provide explanations on the corporate governance in Turkey. The data and methodology of the study are presented in the third part which is followed by empirical findings in the fourth part. The last part concludes with a discussion.

2. Literature Review

The corporate governance literature, being an interdisciplinary area, approaches the issue from different angles. Many researchers have investigated the relationship between corporate governance practices and the performance of the firms or market values extensively using single country or multi-country settings as well as different methodologies providing

mixed international evidence (Bozec and Bozec, 2012; Zengul et al., 2019). There are also studies with a more comprehensive approach, and they use an index or the corporate governance ratings of firms to proxy for the quality of their corporate governance practices. These studies aim to determine the factors that affect corporate governance quality.

Another line of researchers, however, focuses on the voluntary disclosure of corporate governance practices by the firms. Firms aiming to reduce agency costs, minimize information asymmetry to increase investor confidence and increase access to financing sources, voluntarily disclose their corporate governance practices to prove their compliance with good practices (Gurarda et al., 2016; Mallin and Ow-Yong, 2012; Winter, 2002). The voluntary disclosure studies proxy for the compliance level by using a corporate governance rating or an index constructed by using different methods (Bozec and Bozec, 2012; Elfeky, 2017; Gompers et al., 2003; Luo and Salterio, 2014). That is, the literature on voluntary disclosure of corporate governance practices uses a corporate governance index following the GIM Index proposed by Gompers et al. (2003). The corporate governance index is found by coding each corporate governance provision followed by 1 and 0 if not followed. However, as Bozec and Bozec (2012) discusses, this methodology has some shortcomings such as giving equal weights to each provision as well as considering all of them as complements, as being open to measurement errors, and they argue that this methodology ignores the adoption of corporate governance practices based on the conditions. Using the GIM index as a proxy for corporate governance quality may lead to errors in measuring the quality of corporate governance practices. Additionally, as Luo and Salterio (2014) argue when these indexes are constructed, the alternative action to the regulator endorsed codes taken by the firm should also be considered as part of good governance since firms can choose practices that fit them best (Bozec and Bozec, 2012). The alternative measure, the corporate governance rating, also has its limitations (Bozec and Bozec, 2012). In conclusion, corporate governance ratings as well as the indexes, which are constructed by the researchers to proxy for voluntary disclosure of compliance may have limitations.

Literature on the factors affecting corporate governance disclosure is not new. Studies date back to the 1990s (Carson, 1996; Ramsay and Hoad, 1997). One of the important studies about the subject belongs to Healy and Palepu (2001), in which they represent a framework for analysing reporting and disclosure decisions of managers in a capital markets setting. According to them, factors that influence managers' disclosure decisions are capital market transactions, corporate control contests, stock compensation, litigation, proprietary costs, and management talent signalling. Bujaki and McConomy (2002) evaluated the corporate governance disclosures made by the largest publicly traded firms on the Toronto Stock Exchange and found that the scope of the disclosure is wider for more highly

leveraged firms, firms with a majority of unrelated directors, and larger firms. Moreover, they determined that the extent of disclosure is affected by the disclosure medium and revenue growth.

In another study, Collett and Hrasky (2005) examined possible motivations for the voluntary corporate governance disclosure of Australian firms. According to their findings, no significant relationship was found between borrowing intentions and voluntary corporate governance disclosure, but their findings reveal an important relationship between the disclosure decision and industry classification and stock exchange listing status. In Spain, corporate governance information disclosed by Spanish-listed firms via the internet was analysed to assess the effects of several firm-specific factors on the level of information voluntarily disclosed. The results of this study found a positive relationship between disclosure levels and the degree to which firms are followed by analysts. Moreover, according to the findings of the study disclosure levels were also affected positively by the listing age and visibility of the firms (Gandia, 2008). Nerantzidis and Tsamis (2017) explored the main factors that influence the level of corporate governance disclosure in Greece by constructing two different disclosure indices. A positive relationship was found between these governance indices and particular factors such as the firm's performance, size, number of independent directors, number of board meetings, and gender diversity on the board.

Not only the large listed firms but also the small and medium-sized firms listed on alternative investment markets were also investigated for the drivers of voluntary corporate governance disclosure. A study on the U.K. alternative investment market found that having independent non-executive directors on the board, firm size, financial leverage level, and board size affect the extent of voluntary governance disclosure. They argue that smaller firms have relatively less disclosure, and suggest regulators consider the disclosure costs for these firms for reducing information asymmetry (Mallin and Ow-Yong, 2012). Scholtz and Smit (2015) also investigated the firms in alternative markets in terms of factors affecting voluntary governance disclosure. Their sample included firms listed on Alternative Exchange in South Africa. By developing a corporate governance disclosure index, they showed that duality, firm size, independent audit committees, and high debt levels affect the voluntary corporate governance disclosure positively.

Some studies focused on developing and/or emerging markets. For example, Sharma (2014) assessed the scope of mandatory corporate governance disclosure in Nepal and investigated the relationship between the extent of disclosures and several firm-specific characteristics. Profitability and listing age were found as factors that did not affect the level of corporate governance disclosure. However, a positive significant correlation was found

between the extent of the disclosure and firm-specific factors such as corporate size, leverage, and foreign association. Elfeky (2017) examined the extent of voluntary corporate governance disclosure in Egypt. The findings of the study showed a positive significant relationship between voluntary disclosure extent and leverage, size, profitability, auditor type, and independent directors on board.

Studies conducted in Turkey usually focus on the relationship between corporate governance and firm performance measured either by profitability or market values. One of the earliest studies investigating this relationship compared the financial performance of firms before and after the inclusion into the corporate governance index (Karamustafa, Varıcı, & Er, 2009). According to the findings of the study, Total Asset Turnover, Return on Assets, and Return on Equity ratios of sample firms were significantly different between the two periods (before and after inclusion into the XKURY Index) (Karamustafa, Varıcı, & Er, 2009). Sakarya (2011) used an event study to analyse the relationship between the Corporate Governance Rating announcements and stock returns. A positive correlation was found between the announcement of a favourable corporate governance rating and the associated stock returns. Later, event study methodology was also used by Sakarya et al. (2017) and Kavcar and Gumrah (2017). Contrary to Sakarya (2011), Kavcar and Gumrah (2017) concluded that there was no positive relationship between the announcement of the corporate governance rating scores and the stock returns. Ege et al. (2013) evaluated the financial performance of corporate governance index (XKURY) firms by using the TOPSIS method and then compared the rankings according to the TOPSIS scores and rating scores. They found that these two rankings did not move in the same direction, indicating that the quality of corporate governance of the firms did not have an effect on financial performance.

Kula and Baykut (2014) conducted a cross-sectional regression analysis to investigate the effect of corporate governance ratings on market values of corporate governance index (XKURY) firms. The findings of their study revealed that corporate governance ratings had a positive effect on market values. Kara et al. (2015) used panel data analysis to analyse the effect of Corporate Governance Rating scores of XKURY firms on various performance measures. They found a positive relationship between corporate governance rating score and market-to-book ratio, and no significant relationship between corporate governance ratings and Return on Equity, Return on Assets, Return on Sales, and Net Profit.

Not only the firms included in BIST Corporate Governance Index (XKURY) but also the other firms listed on Borsa Istanbul were investigated for the relationship between financial performance and corporate governance. Acaravci et al. (2015) used the share of the

biggest stockholder, the share of the three biggest stockholders, the proportion of publicly traded shares, size of the board of directors, the proportion of institutionally owned shares, and the dual role of the CEO as a member of the board of directors as proxies for corporate governance quality and examined the effect of these variables on the financial performance of 126 manufacturing companies listed on Borsa Istanbul. Their findings revealed a negative effect of the proportion of institutionally owned shares and a positive effect of the size of the board of directors on firm performance. Komecoglu and Vuran (2018) investigated 72 non-financial firms listed in the BIST-100 Index to find out the impact of corporate governance practices on their performance. Independence of board of directors and institutional ownership were found to have a significantly positive relationship with the market value of sample firms. Firms listed on BIST Emerging Companies Market were examined by Saglam and Karan (2019), by using the size of the board of directors, the duration and duality of the CEO, the ratio of independent directors in the board of directors, and the ratio of women managers as proxies for corporate governance practices. According to their findings, only the CEO's duration had a positive effect on the financial performance of SMEs listed on the BIST Emerging Companies Market. A more comprehensive study including 234 non-financial firms listed in Borsa Istanbul found significant and positive relations between ownership concentration, foreign ownership, the board size, and firm performance. The corporate governance index variable, taking the value of 1 if the firm is included in XKURY, was found to have a positive effect on Tobin's Q but no effect on Return on Assets (Ciftci et al., 2019).

Apart from the above-mentioned studies, some studies approach corporate governance from different viewpoints. Gurarda et al. (2016) investigated the determinants of corporate governance ratings in Turkey with a focus on ownership structure. They determined that earnings, financial risk, and firm size have a positive impact on Corporate Governance Ratings. Saygili et al. (2020) examined the effect of ownership structure on corporate governance practices of Turkish companies listed in XKURY by using fixed effects panel regression. Their findings revealed that state ownership had a negative impact on weighted and non-weighted average corporate governance scores of firms listed in XKURY. More recently, Pirgaip and Akyuz (2020) analysed the reaction of investors to the joint announcement of inclusion into the XKURY Index and first-ever Corporate Governance Rating and examined whether they attribute more importance to individually announced subsequent Corporate Governance Ratings or not. According to the findings of their event study, stronger positive abnormal returns and volumes in the pre-event period were observed in joint announcements. However, for the post-event period, subsequent Corporate Governance Rating announcements were found to create positive abnormal returns. Thus,

this study revealed that the first Corporate Governance rating announcement together with the announcement of inclusion into the XKURY had a different impact on investors than the announcement of subsequent Corporate Governance ratings.

3. Corporate Governance in Turkey

Corporate governance has been brought to the agenda of Turkey's business world at the beginning of the 2000s by The Turkish Industry and Business Association (TUSIAD)[3]. TUSIAD has formed a Corporate Governance Working Group and this working group has published a report named the "Corporate Governance Code of Best Practice: Composition and the Functioning of the Board of Directors" in December 2002. The focus of this report was the composition, independence, and agenda of the board of directors which was believed to have a significant effect on the formation of corporate governance principles. In 2003, the members of this working group have led to the foundation of the "Corporate Governance Association of Turkey (TKYD)", which is a not-for-profit organization aimed to develop and promote adherence to corporate governance standards and guidelines in Turkey.

In the same year, the Capital Markets Board (CMB) of Turkey introduced the Corporate Governance Principles for public firms within the "comply or explain" scope. These principles were developed parallel to OECD Principles and they were regarded as advisory in nature. They were revised in accordance with the OECD revision in 2005, and some of them have become mandatory for listed firms in 2012. Later in 2014, the scope of the mandatory principles was enlarged by the CMB of Turkey. At the same time, Turkish Trade Law (Law No.6102), which was updated in 2011, authorized CMB as the legal body responsible for determining corporate governance principles for public firms. According to this Law, government organizations have to take the permission of CMB when introducing their own corporate governance principles valid in their respective area.

Corporate Governance Principles published by the CMB of Turkey include 97 principles and 24 of those principles are mandatory for listed firms. Listed firms are mandated to report their compliances with all the principles in their annual reports. These principles include four main categories which are a combination of both international regulations and

[3] TUSIAD is an independent, non-governmental organization which has the aim of developing a unity of thought and action on behalf of the Turkish business world (https://tusiad.org/en/tusiad/about).

particular domestic considerations. The name of these main categories, the number of principles included in each category, and the number of mandatory principles are provided in Table 1. There are no mandatory principles in Public Disclosure & Transparency and Stakeholders categories. Most of the mandatory principles (83%) are under the Board of Directors category. Thus we can argue that the most strictly designed mechanism of corporate governance within these principles is the "Board of Directors".

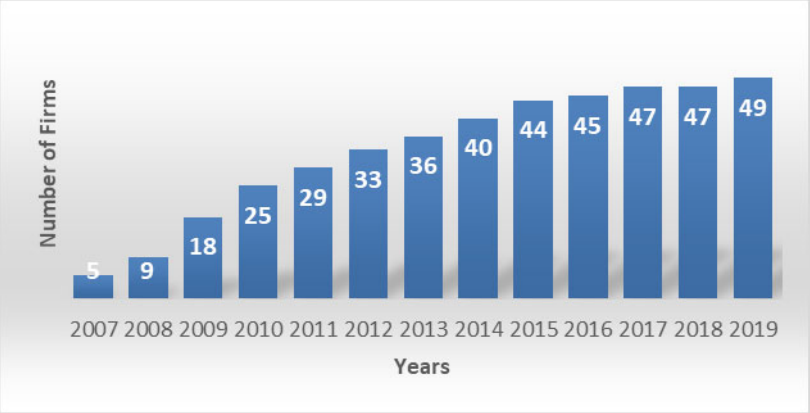
Table 1: Main Categories and Number of Mandatory Principles in Corporate Governance Principles of CMB of Turkey

Name of Category	Number of Principles	Number of Mandatory Principles
Shareholders	24	4
Public Disclosure and Transparency	6	0
Stakeholders	22	0
Board of Directors	45	20
Total	**97**	**24**

Source: Authors' calculations based on CMB Corporate Governance Principles (2014)

Although the history of corporate governance practices is not as long as developed countries, Turkey has made great progress in this area during the last two decades. Borsa Istanbul is one of the few stock markets that has a Corporate Governance Index. Borsa Istanbul Corporate Governance Index (XKURY) is being calculated since August 2007, and firms that have a Corporate Governance Rating of a minimum of 70 out of 100 are selected to be included in this Index. Initially, in 2007, five firms fulfilled the conditions to be selected to the XKURY. As of February 2020, the number of firms has reached forty-nine. The increase in the number of firms included in XKURY over the years is presented in Figure 1.

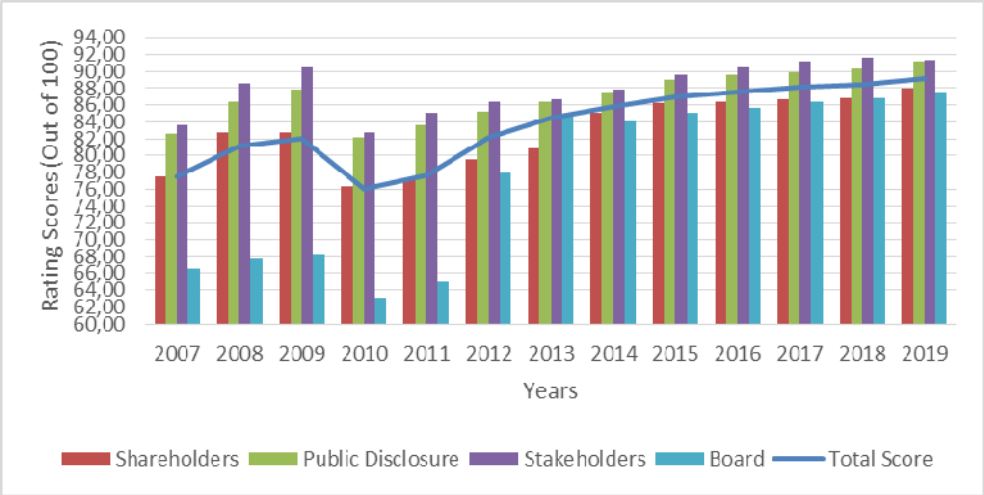
Figure 1: Number of Firms Included in XKURY



Source: Authors' calculations based on Capital Markets Board Statistics

14 of the 49 firms of the XKURY are financial firms such as factoring firms, investment trusts, and banks. The remaining 35 firms are non-financial firms, most of which operate in the manufacturing industry. The corporate governance ratings should be carried out by rating agencies authorized by the CMB and the rating process is based on CMB Corporate Governance Principles. Currently, the weighting scheme, determined by the CMB, to be applied to four main sub-categories to calculate the rating score are 25% for Shareholders sub-category, 25% for Public Disclosure and Transparency sub-category, 15% for Stakeholders sub-category, and 35% for Board of Directors sub-category. As mentioned before aggregate corporate governance rating of a firm should be 70 out of 100, to be included in XKURY. At the same time, the firm should have a score of at least 65 out of 100 for each sub-category. Corporate Governance Rating methodology used by rating agencies features around 330 sub-criteria. Agencies evaluate each criterion based on information provided by the firm officials and publicly disclosed information. Firms, which satisfy the minimum criteria to be included in XKURY after the rating process, are included in the index a business day after the rating is published on the Public Disclosure Platform. Figure 2 shows the annual average corporate governance ratings of firms included in XKURY. Total scores and sub-scores can be observed in the figure.

Figure 2: Average Corporate Governance Rating Scores per year



Source: Authors' calculations based on Corporate Governance Rating Reports of the Firms

Both the increase in the number of listed firms in XKURY and average corporate governance ratings show that Turkey has made great progress in corporate governance practices at least for listed firms on Borsa Istanbul. The availability of this index also attracted the attention of a limited number of researchers, who aimed to investigate mainly the role of ownership structure on the corporate governance ratings (Gurarda et al., 2016; Saygili et al., 2020).

4. Data and Methodology

The objective of this study is to investigate the factors affecting the firms' decision to obtain a corporate governance rating in Turkey. Based on this objective, Borsa Istanbul Corporate Governance Index (XKURY) and Borsa Istanbul-100 (BIST-100) Index[4] firms were selected as the sample group. Financial sector firms are excluded from the sample because of their distinct operational and financial characteristics. As mentioned before, there are 49 firms in XKURY as of December 2019 and the total number of non-financial firms is 35. The total number of non-financial firms included in the BIST-100 Index as of the same date is 69. Some firms are included both in BIST-100 and XKURY. As a result, the final sample includes 75 non-financial firms with and without corporate governance ratings. We used 1 year lag of independent variables so firm-year observations used in panel logistic regression was 795.

The analysis period covers the years between 2007 and 2019. It begins with 2007 because XKURY has been initiated in 2007. Some of the firms in the sample had their initial public offerings after 2007, and there were missing data of a few firms[5] for some years, therefore we used unbalanced panel data. The financial data was retrieved from the "Finnet[6] Financial Analysis Database" and the others were collected from the firm websites and the Public Disclosure Platform[7].

Panel logistic regression is used as a method to investigate the firm-specific factors affecting voluntary corporate governance rating since our dependent variable is discrete. In logistic regression models, the dependent variable is usually represented by a binary choice variable $y_{it} = 1$ if the event happens and 0 if it does not for subject i at time t. If p_{it} is the probability that an event happened for subject i at time t, then the expected value of y_{it} can be written as $E(y_{it}) = 1 \cdot p_{it} + 0 \cdot (1 - p_{it}) = p_{it}$, and this is usually modelled as a function of some explanatory variables as follows (Baltagi, 2005):

$$p_{it} = Pr[y_{it} = 1] = E(y_{it}/x_{it}) = F(x'_{it}\beta)$$

If we use a single index w for $x'_{it}\beta$, then the logit model can be written as (Hsiao, 2003):

[4] BIST-100 is used as the main index for Borsa Istanbul Equity Market

[5] All the firms publish their annual reports, corporate governance compliance reports and financial statements via their web sites, however few firms publish them only for the last ten years, and it was not possible to find these reports for 2007 and 2008 for these firms.

[6] Finnet is a software developer company, which offers products for financial research. Financial Analysis Database product is used in this study to collect data from financial statements of public firms.

[7] Public Disclosure Platform is an electronic system, where public firms disclose all information and documents required by Capital Markets Board of Turkey.

$F(w)= e^{w} / (1+e^{w})$

Logit models can be interpreted based on an underlying linear model for the notion to experience a certain situation:

$y_{it} = x'_{it}\beta + \varepsilon_{it}$

To fit the logit models the most used method is the maximum likelihood method, which is based on the maximization of the loglikelihood (Bartolucci, 2009):

$$L(\beta) = \sum_{i}\sum_{t} y_{it}\, log[\pi(x_{it})] + (1 - y_{it}) log[1 - \pi(x_{it})]$$

Since the logit model is nonlinear, the coefficients of explanatory variables after estimating the model show only the direction of the relationship between the explanatory variable and the probability. Odd ratios should be used to interpret the logit model estimates.

The dependent variable used in the model of the study represents whether the firm in the sample has a voluntary corporate governance rating. It equals 1 if the firm has a voluntary corporate governance rating and 0 if it does not:

$y_{it} =$ { 1 if the firm i has a voluntary corporate governance rating in year t,
0 if the firm i does not have a voluntary corporate governance rating in year t

Thus, we checked whether the company had a corporate governance rating for each year in the analysis period and gave the value of 1 or 0 to the dummy variable accordingly.

Independent variables of the study include firm-specific characteristics representing financial condition and ownership structure of the firms as well as control variables such as the age and size of the firm. At the same time, year dummies are used to control for the effects of important economic events in specific years.

Firm-specific factors related to the financial condition of the firm:

Leverage: Financing decisions of the firm may be affected by the quality of the corporate governance because senior managers usually make these decisions with the board of directors (Boateng et al., 2017). Therefore, several studies were conducted in the literature to investigate the relationship between debt level and corporate governance. They were found to have a significant relationship in some of the empirical studies, even though the direction of this relationship is unclear (Aldamen and Duncan, 2012). In some studies, firms with higher levels of leverage tended to have a higher quality of corporate governance practices (Boateng et al., 2017; Bokpin and Arko 2009; Elfeky, 2017; Funchall et al., 2008; Scholtz and Smit, 2015), but in others, a negative relationship was found between them

(Atanasova et al., 2016; Wen et al., 2002). Assuming that firms, which prefer to finance themselves more with equity, tend to give more information to potential stockholders by showing the extent of their corporate governance practices, we expect a negative relationship between leverage level and voluntary corporate governance rating. Hence the first hypothesis is formulated as:

$H_{1:}$ The relationship between leverage and voluntary corporate governance rating is negative.

Profitability: According to the signalling theory, managers of highly profitable firms use corporate governance disclosure to affect investors' confidence positively (Nerantzidis and Tsamis, 2017). At the same time, there are numerous studies in the literature investigating the relationship between profitability and corporate governance practices. Waweru (2014) argues that firms that have a higher level of resources tend to develop more advanced corporate governance systems, so firms with higher profitability should have more opportunities to find resources for improving their corporate governance systems. However, the results of the empirical literature on the relationship between profitability and corporate governance are mixed (Waweru, 2014). We assume that profitability impacts the decisions of the firms about voluntary corporate governance rating positively. Hence the second hypothesis is formulated as:

$H_{2:}$ The relationship between profitability and voluntary corporate governance rating is positive.

Market Performance: Good corporate governance and high firm valuation should be related to each other in theory. Poor governance may cause additional agency costs and if these costs are estimated by the market, the stock price may decrease. Alternatively, strong governance may be considered as a signal of low agency costs by investors leading to higher valuation (Khanchel, 2007). Hence the third hypothesis of the study is formulated as:

$H_{3:}$ The relationship between market performance and voluntary corporate governance rating is positive.

Firm-specific factors related to the ownership structure:

Family Ownership: Corporate governance in family firms has been a popular research topic for the last two decades. If a sufficiently large share of risk capital, which enables to make strategic decisions, is owned by one or more families linked by kinship, close affinity, or solid alliances, that firm is considered as a family firm (Gubitta and Gianecchini, 2002). Ownership and management by a single founding family have advantages and disadvantages in terms of corporate governance practices. Factors such as altruism, nepotism,

and weak risk-bearing attributes may have a negative effect on corporate governance practices, but their dynamism and versatility are among the factors which may give them a competitive advantage (Carney, 2005). Family firms have a significant share in the Turkish economy similar to other emerging economies, and most of the successful large firms of today are owned largely by families. Therefore, family ownership is included in the analysis as an independent variable to be able to observe the effect of family ownership on voluntary corporate governance rating. We assign 1 to this dummy variable if family members account for the majority of the board or have an ownership stake of 50% or above in equity, and 0 otherwise, following Gurarda et al. (2016) and Saygili et al. (2020). Data about the members of the board is obtained by reviewing annual reports of the sample firms. Thus the fourth hypothesis of the study is formulated as:

$H_{4:}$ The relationship between family ownership and voluntary corporate governance rating is negative.

Foreign Ownership: Compared to domestic owners, foreign owners need more effective mechanisms to monitor the actions of management, because they are exposed to a higher level of information asymmetry. Extensive corporate governance disclosure is one of the useful means that fulfils the need of these owners. In fact, in the study of Barako et al. (2006), foreign ownership was found to be a significant predictor of the extent of voluntary disclosure. According to Leuz et al. (2006), foreign investors invest significantly less in firms that have poor corporate governance. Moreover, Gurarda et al. (2016) found that foreign ownership had a positive impact on firms' corporate governance scores in Turkey. Thus we expect a positive relationship between voluntary corporate governance rating and foreign ownership variable. This dummy variable takes the value of 1 if there are foreign investors among controlling shareholders and 0 if otherwise. Information about controlling shareholders is collected from annual reports of sample firms. Hence the fifth hypothesis of the study is formulated as:

$H_{5:}$ The relationship between foreign ownership and voluntary corporate governance rating is positive.

Control Variables:

Firm Size: The size of the firm is one of the variables studied in corporate governance and disclosure research (Madhani, 2016). As Jensen and Meckling (1976) stated, large firms have higher levels of agency costs, so they rely more on governance mechanisms to decrease them (Indarti et al., 2018). Thus, we expect that firm size is positively related to voluntary corporate governance rating.

Firm Age: Even though Loderer and Waelchli (2011) argue that corporate governance of firms gets poorer with age, Dipendra (2016) found that age was not associated with corporate governance. Differently, the findings of Di Miceli da Silveira et al. (2009) revealed that age has a positive influence on the quality of corporate governance practices. Although studies showed a relationship between firm age and corporate governance, the direction of the relationship is unclear. Empirical studies in finance literature use both listing age and the number of years since the foundation of the firm to represent the firm age variable. In this study, we used the number of years since the incorporation of listed firms following Nandia & Ghosh (2012), Arora & Sharma (2016), Ciftci et al.(2019).

Year Dummies: To control the effects of the financial crisis in 2008, and the financial instability situation in Turkey during 2018, we included year dummies for 2008, 2009, and 2018.

We used the following model to run the logistic panel regression:

$$VCGR_{it}=\beta_0 + \beta_1 LEV_{it-1} + \beta_2 PROF_{it-1} + \beta_3 M\text{-}B_{it-1} + \beta_4 FAM_{it-1} + \beta_5 FORG_{it-1} + \beta_6 SIZE_{it-1} + \beta_7 AGE_{it-1} + \beta_8 YEAR08 + \beta_9 YEAR09 + \beta_{10} YEAR18 + \delta_t + \alpha_i + \mu_{it}$$

Variables of the model are summarized in Table 2[8]. One year lagged values of the independent variables are used in the model because we expect that the effect of the particular variable will be reflected in the subsequent year's decision for voluntary corporate rating.

[8] Return on equity as an alternative to return on assets as a proxy for profitability, natural logarithm of total sales as an alternative to natural logarithm of total assets as a proxy for size are also included in the model. Similar results were found so the findings of the models with these variables are not included in the study.

Table 2: Summary of Variables in the Model

Type of the Variable	Variable Name	Abbreviation	Explanation
Dependent Variable	Voluntary Corporate Governance Rating	$VCGR_{it}$	Dummy variable that equals - 1 if firm i has voluntary corporate governance rating for year t - 0 if firm i has voluntary corporate governance rating for year t
Independent Variables			
	Leverage	LEV_{it-1}	Total Liabilities/Total Assets of firm i at year t-1
	Profitability	$PROF_{it-1}$	Return on Assets (Net Income/Total Assets) of firm i at year t-1
	Market Performance	$M\text{-}B_{it-1}$	Market-to-Book Ratio of firm i at year t-1
	Family Ownership	FAM_{it-1}	Dummy variable that equals - 1 if there are family members in the ownership structure of firm i at year t-1 - 0 if there are no family members in the ownership structure of firm i at year t-1
	Foreign Ownership	$FORG_{it-1}$	Dummy variable that equals - 1 if there are foreign equity partners of firm i at year t-1 - 0 if there are no foreign equity partners of the firm i at year t-1
	Firm Size	$SIZE_{it-1}$	Natural Logarithm of Total Assets for firm i at year t-1
	Firm Age	AGE_{it-1}	Age of firm i at year t-1
	Year Dummies	YEAR08 YEAR09 YEAR18	Year dummies for 2008, 2009 and 2018

5. Empirical Findings

Descriptive statistics about independent variables (except dummies) are summarized in Table 3. The mean leverage ratio of our sample is 0.49, but maximum and minimum values show that there are also firms with very high or very low leverage ratios in the sample. The average ROA of the firms in the sample is about 7%, and the average age is about 44 years. The M-B of the firms was 1.74 on average.

Table 3: Descriptive Statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max	Skewness
LEV(TD/TA)	795	0.49	0.23	0.02	1.29	0.06
SIZE(LnTA)	795	21.25	1.53	17.43	25.71	0.13
PROF (ROA)	795	0.07	0.11	-0.31	1.80	5.46
M-B	795	1.74	5.98	-155.02	25.12	-20.95
AGE	795	43.93	16.75	3.00	88.00	0.11

The table summarizes descriptive statistics of our independent variables. LEV represents the ratio of Total Liabilities to Total Assets; PROF represents Return on Assets; M-B represents Market-to-Book Ratio; SIZE stands for the logarithm of Total Assets; AGE represents firm age.

Table 4 summarizes the correlation between the independent variables. The highest correlation is between leverage and profitability, but there are no correlation coefficients above the critical value of 0.7. We can conclude that there is no problem of correlation between independent variables, which may affect the model negatively.

Table 4: Pearson Correlation Matrix of Independent Variables

	LEV	SIZE	PROF	M-B	AGE	FORG	FAM	Y08	Y09	Y18
LEV	1.000									
SIZE	0.282***	1.000								
PROF	-0.338***	-0.083**	1.000							
M-B	-0.010	0.027	0.099***	1.000						
AGE	-0.062	0.235***	0.003	-0.007	1.000					
FORG	0.293***	0.138***	-0.071**	0.018	-0.024	1.000				
FAM	0.087***	-0.101***	-0.007	0.015	-0.156***	-0.048	1.000			
YEAR08	-0.025	-0.106***	-0.069**	-0.021	-0.059*	0.004	0.013	1.000		
YEAR09	-0.077**	-0.100***	-0.018	-0.002	-0.038	-0.005	0.001	-0.073**	1.000	
YEAR18	0.082**	0.178***	0.022	-0.100***	0.063	-0.006	-0.008	-0.081**	-0.085****	1.000

Table 4 reports the Pearson correlation matrix of the independent variables. LEV represents the ratio of Total Liabilities to Total Assets; PROF represents Return on Assets; M-B represents Market-to-Book Ratio; FAM is a dummy variable representing family ownership; FORG is a dummy variable representing foreign ownership; SIZE stands for the logarithm of Total Assets; AGE represents firm age; YEAR08, YEAR09, and YEAR18 are year dummies for 2008, 2009 and 2018 respectively. * represents significance at 10% level; ** represents significance at 5% level; *** represents significance at 1% level.

The logistic regression model was analysed by using the "xtlogit" command in STATA. Random effects Logistic Regression with Maximum Likelihood Optimization is used. The findings are exhibited in Table 5. According to the Wald test, the model is statistically significant and according to the Likelihood Ratio test, random effects logistic regression should be used instead of pooled logistic regression. Hausman test statistic is also calculated to choose between fixed effects and random effects models, and since the p-value of the Hausman test is insignificant at 5% level, the random effects logistic regression model was chosen.

Table 5: Results of Panel Logistic Regression

Dependent Variable: $VCGR_{it}$				
	Coefficients	**Odd Ratios**	**Z statistics**	**P>z**
LEV_{it-1}	-7.410*	0.001	-1.850	0.064
$PROF_{it-1}$	-16.586**	0.000	-2.530	0.012
$M\text{-}B_{it-1}$	0.245	1.278	0.520	0.601
$SIZE_{it-1}$	6.993***	1088.518	9.550	0.000
AGE_{it-1}	0.692***	1.997	9.080	0.000
FAM_{it-1}	10.692***	44016.030	4.910	0.000
$FORG_{it-1}$	4.839***	126.403	2.570	0.010
YEAR08	-2.609*	0.074	-1.770	0.077
YEAR09	-1.425	0.241	-1.130	0.261
YEAR18	-2.496	0.082	-1.430	0.153
CONS.	-202.586***		-14.050	0.000
N =795				
Wald χ^2= 367.42; Prob> χ^2=0.000				
LR(χ^2)= 179.33; Prob> χ^2=0.000				
Hausman(χ^2)=0.01; Prob> χ2=1.000				

Table 5 reports the output of panel logistic regression. Our dependent variable is VGCR. discrete variable taking the value of 1 if firm i had a rating at year t. LEV_{it-1} represents the ratio of Total Liabilities to Total Assets of firm i at year t-1; PROF represents Return on Assets of firm i at year t-1; $M\text{-}B_{it-1}$ represents Market-to-Book Ratio of firm i at year t-1; FAM_{it-1} is a dummy variable representing family ownership of firm i at year t-1; $FORG_{it-1}$ is a dummy variable representing foreign ownership of firm i at year t-1; $SIZE_{it-1}$ stands for the logarithm of Total Assets of firm i at year t-1; AGE_{it-1} represents firm age of firm i at year t-1; YEAR08, YEAR09, and YEAR18 are year dummies for 2008, 2009 and 2018 respectively. * represents significance at 10% level; ** represents significance at 5% level; *** represents significance at 1% level.

According to the results of the panel logistic regression model, Leverage and Profitability were found to be statistically significant at 10% and 1% level, respectively. Both of the variables have negative coefficients but since the odd ratios are very small, their negative effects are not so strong. Our first hypothesis is supported but the second one is not supported. Firm size, firm age, family ownership, and foreign ownership variables were also found statistically significant at 1% level and their coefficients are all positive in line with expectations for firm size and age as well as supporting the fifth hypothesis but contrary to the fourth one. Moreover, the dummy variable used to control the effect of the 2008 financial crisis is also found to be statistically significant at 10% level with a negative coefficient. At the same time, the findings reveal that the market-to-book ratio is not a statisti-

cally significant variable affecting voluntary corporate governance rating. Hence the third hypothesis is rejected.

Odd ratios show that profitability (ROA) and leverage (TD/TA) have the weakest effects on the decision to obtain a corporate governance rating. As mentioned before, previous empirical findings of the relationship between profitability (ROA) and corporate governance are mixed. The negative relationship found by the study may be interpreted as that firms with lower profitability decide to have corporate governance rating voluntarily to overcome the negative perceptions of the investors due to low profitability. Findings of leverage are consistent with Atanasova et al. (2016), Collett and Hrasky (2005), Mallin and Ow-Yong (2012), and Wen et al. (2002). Firms with higher leverage prefer not to have voluntary corporate governance rating, therefore we can assume that firms that prefer equity financing tend to have corporate governance rating to disclose more information for their potential stockholders.

According to the odd ratios, family ownership has the strongest positive effect on the voluntary corporate governance rating. Family firms have both advantages and disadvantages in terms of corporate governance. In the context of the Turkish business world, most of the oldest and most successful firms are founded as family firms and founding families still hold significant shares. Thus, it is not surprising for Turkey that family firms have a higher tendency to voluntarily have a corporate governance rating. However, the findings of Gurarda et al. (2016) revealed a negative relationship between family ownership and corporate governance ratings, despite it being a weak effect. Moreover, Saygili et al. (2020) determined that family ownership in Turkey did not have a significant effect on corporate governance rating scores. Collectively, based on our findings and these two studies, it can be argued that family ownership affects the decision to obtain a corporate governance rating positively but its effect on the corporate governance score is not clear.

Following the family ownership variable, firm size also has a considerable effect on voluntary corporate governance rating. Larger firms are found to be more willing to have corporate governance rating, and this finding is consistent with our expectations and previous studies (Mallin and Ow-Yong, 2012). As Hussainey and Al-Najjar (2012) stated, large-scaled firms are more likely to afford the cost of providing information to stakeholders, and small firms might not have sufficient funds to provide more information about their corporate governance practices. Likewise, our findings may be interpreted as that large firms are more apt to spend funds on corporate governance rating.

Foreign ownership is also found as a significant variable affecting the decision of voluntary corporate governance rating positively, as expected. The presence of foreign share-

holders in the ownership structure of the firms in our sample affects the decision of voluntary corporate governance rating. Our finding of foreign ownership is in line with the findings of Gurarda et al. (2016). As a control variable firm age is another statistically significant variable affecting the voluntary corporate governance rating positively. Our results provide support to the argument that older firms are more willing to have voluntary corporate governance rating. Among year dummies that were used to control for the effects of the financial crisis and economic instabilities, the dummy variable for the year 2008 is found statistically significant, affecting voluntary corporate governance rating negatively. Since the rating process itself has a cost, we can argue that firms do not prefer to be rated during the financial crisis because of its costs.

6. Discussion and Conclusion

Compliance with corporate governance codes leads to deeper and more liquid financial markets which are crucial for financial stability. Hence, many countries have adopted the OECD Corporate Governance Principles as their code for listed firms. This adoption comes in two forms mandatory compliance or "comply or explain". Moreover, some countries have started constructing Corporate Governance Indices to encourage the firms to obtain corporate governance ratings by going through a voluntary evaluation of their compliance, or some other countries required an automatic assessment of the firms in their main index.

The present study aimed to determine the driving factors affecting the firms to apply for voluntary corporate governance evaluation in Borsa Istanbul, which is one of the few stock markets that has a Corporate Governance Index (XKURY) since August 2007. The index started with five firms in 2007 and has reached forty-nine firms in 2020. The inclusion in the index depends on the discretionary decision of the firm to obtain a corporate governance rating. Hence, Borsa Istanbul provides a unique setting where the firms voluntarily apply to obtain a corporate governance rating. Since these firms voluntarily go through the rating process, it can be assumed that they place more importance on corporate governance aiming for reducing agency costs, minimizing information asymmetry so that investors have more confidence and they have increased access to financing sources.

To investigate the determinants of voluntary application for the corporate governance rating, the nonfinancial firms included in the main index of Borsa Istanbul (BIST-100) and the Borsa Istanbul Corporate Governance Index (XKURY) were included in the analysis. A panel logistic regression model was used to determine the factors driving the firms to have a corporate governance rating. The dependent variable took the value 1 if the firm had a rating in a certain year and 0 otherwise.

The findings revealed that firms with lower debt levels have a higher tendency to apply for a rating. Since these firms prefer the equity market as a source of financing, having a corporate governance rating may signal the importance these firms give to reducing information asymmetries by disclosing more information to potential stockholders to create more investor confidence in their firm. The same line of reasoning may follow for the negative relationship between profitability and the probability of obtaining a corporate governance rating. The firms may want to signal to their existing and potential stockholders that the necessary corporate governance mechanisms are in place and the low profitability levels are not due to mismanagement. The firms decide to voluntarily obtain a corporate governance rating irrespective of how the investors value their stocks as supported by the insignificant relationship between the M-B ratio and the probability of voluntary corporate governance rating.

The positive relationship between age and size of the firms and the tendency to have a rating can be explained by the sufficient resources these firms possess to cover the costs of the process of obtaining a rating. It may be perceived as a factor contributing to the reputation and sustainability of the firm.

The firms in Turkey have pyramidal ownership structures and family firms play an important role. Many founding families are still in control of the firms in Borsa Istanbul. Hence, family ownership was found to have a strong positive relationship with the tendency to have a corporate governance rating. This can be interpreted as the firms' as well as the founding families' will to signal that all stockholders are important and their efforts to reduce the information asymmetries. However, as Gurarda et al. (2016) found, this does not translate into a higher rating nor has any significant effect on the rating as put forth by Saygili et al. (2020).

Another important factor that strongly affects the tendency to have a rating was foreign ownership. As expected, firms with foreign ownership may be urged by their foreign owners to go through this process which may be considered as an endorsement of their compliance efforts. Gurarda et al. (2016) provide evidence that these firms also have higher compliance levels.

Our findings suggest that firm-specific factors, namely sources of financing for the firms, ownership structure, firm size, and firm age are influential in the decision to obtain a corporate governance rating. Thus, considering these firm-specific factors when designing corporate governance policies may motivate more firms to obtain a corporate governance rating. For example, the positive effect of firm size on voluntary governance rating reveals that smaller firms have more hesitation about obtaining a rating. Assuming this hesitation

stems from their doubt about satisfying high-quality standards of corporate governance, authorities may introduce a different set of governance principles for small and medium-sized enterprises. This type of distinction may motivate smaller firms to apply not only the mandatory corporate governance principles but also the voluntary ones. Thereby more firms would take steps towards voluntary corporate governance rating and improve their corporate governance. Current legislation in Turkey categorizes the firms in terms of their size according to their market values, but other scale criteria may be taken into account in this categorization.

Another firm-specific factor having a positive impact on rating decisions is "firm age", revealing that younger firms are more doubtful about obtaining a governance rating. Some incentives may be offered for young firms to encourage them for obtaining a rating. Taking firm-specific factors into consideration during the design of corporate governance policies will require regulators to give up the "one-size-fits-all" approach, which may also have drawbacks. Therefore, the costs and the benefits associated with such a policy change should be analysed carefully. Moreover, as more firms apply for a corporate governance rating, the corporate governance mechanisms put in place by the firms will be more effective, making the markets as well as firms more efficient. The investors will be more confident in their investments and their rights and interests will be better protected.

Even though the findings of this study show that the firm-specific factors are influential on the decision to obtain a corporate governance rating, it should also be noted that the rating scores themselves may be affected by these factors differently. Hence, when regulators design policies to encourage firms to pursue good corporate governance practices, they should consider this distinction. Moreover, investors and portfolio managers, being aware of these differences, should not evaluate the firms only based on whether they have a rating but should also have a detailed analysis of their compliance reports.

The study contributes to the literature by determining firm-specific factors affecting voluntary corporate governance rating, but it has some limitations. The sample covers only non-financial BIST-100 and BIST-XKURY firms. The number of firms in the sample may be increased by including other firms in Borsa Istanbul or firms in other emerging countries may also be included in the sample, which may provide an opportunity to make cross-country comparisons. Industry-specific and country-specific variables may also be investigated in further studies, to offer more comprehensive policy implications.

Moreover, first-time rating decisions and subsequent rating decisions may also be considered separately in further studies. We did not make a distinction between the first rating decision and subsequent ones, because if the firms do not go under the rating process after

inclusion into the XKURY, they are excluded from the index. Thus, we regarded having a rating score in each year as a voluntary decision to be rated, and also to be included in the index. However, Pirgaip&Akyuz (2020) determined that first corporate governance rating announcements have more significance when compared to subsequent rating announcements in the pre-event period, even though the impact of subsequent rating announcements in the post-event period was found to be more profound. The findings of their study argue that stock market reaction to the first rating and subsequent ratings were different. Hence, further studies investigating whether the factors affecting the firms' first decision to be rated and subsequent decisions to be rated are different or not may provide further evidence on how the market reaction affects the decisions of the firms.

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