

# Investigation of the Relationship between Corporate Governance and Capital Structure in Insurance Companies with Panel Regression Analysis

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## Abstract

Corporate governance principles in a company consist of fairness, transparency, accountability and responsibility. Companies with fully implemented corporate governance principles are expected to reduce costs and increase corporate value. It is believed that increasing corporate value can be achieved by minimizing the cost of capital. When examined from these aspects, the value of the enterprise can be increased by reducing capital costs with corporate governance principles in this study, the relationship between the corporate governance of insurance companies and their capital structures has been examined. Financial indicators of insurance companies traded in Borsa Istanbul from 2014 to 2021 are used as data. The financial leverage ratio (total debt/total assets) is considered as the dependent variable and the proportion of foreign members, the proportion of female members, and the proportion of independent members as dependent variables are considered as independent variables in the study. Panel regression analysis was applied as the evaluation method, and it was seen that the ratios of foreign members, independent members and female members positively affected the capital structure. It has also been observed that the variable that most influences the capital structure is the proportion of foreign members.

**Keywords:** Corporate Governance, Capital Structure, Panel Regression Analysis.

**JEL Classification:** C33, D24, G34.

## Öz - Sigorta Şirketlerinde Kurumsal Yönetim ile Sermaye Yapısı İlişkisinin Panel Regresyon Analizi ile İncelenmesi

İşletmelerde kurumsal yönetim ilkeleri adillik, şeffaflık, hesap verilebilirlik ve sorumluluktan oluşmaktadır. Kurumsal yönetim ilkelerinin tam uygulandığı işletmelerde maliyetlerin düşeceği ve bu sayede de işletme değerlerinin artacağı düşünülmektedir. İşletmelerde değer artışının ise sermaye maliyetinin minimize edilmesiyle sağlanabildiği düşünülmektedir. Bu açılardan incelendiğinde kurumsal yönetim ilkeleri ile sermaye maliyetleri düşürülerek işletme değeri arttırılabilecektir. Bu çalışmada sigorta şirketlerinin kurumsal yönetimleri ile sermaye yapıları arasındaki ilişki incelenmiştir. Borsa İstanbul'da işlem gören sigorta şirketlerinin 2014-2021 yıllarına ait finansal oranları veri olarak alınmıştır. Çalışmada bağımlı değişken olarak finansal kaldıraç oranı (toplam borç/toplam aktifler) bağımsız değişkenler olarak ise, yabancı üye oranı, kadın üye oranı ve bağımsız üye oranı dikkate alınmıştır. Değerlendirme yöntemi olarak panel regresyon analizi uygulanmış, yabancı üye, bağımsız üye ve kadın üye oranlarının sermaye yapısını pozitif yönde etkilediği görülmüştür. Sermaye yapısını en fazla etkileyen değişkenin yabancı üye oranı olduğu da gözlemlenmiştir.

**Anahtar Kelimeler:** Kurumsal Yönetim, Sermaye Yapısı, Panel Regresyon Analizi.

**JEL Sınıflandırması:** C33, D24, G34.

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## 1. Introduction

In a highly competitive environment, companies must maximize value for sustainable growth. Value maximization is considered in the finance literature as the most fundamental goal of a company. To achieve these goals in a highly competitive environment, companies invest and seek to realize their investments at the lowest possible cost.

According to a review of the financial literature, even though no clear capital structure theory that minimizes a company's cost of capital has yet to be established, based on the current situation and circumstances, it is possible to design a capital structure that is as efficient as possible. It is considered that there are many studies and theories on this subject. Liabilities and equity can be identified as external resources within the composition of a company's capital structure. Although a company with a significant amount of debt in its capital structure is regarded as financially risky, this is not always seen as a bad situation due to the two-way nature of risk. High cash inflows can be achieved by taking calculated risks and making wise investments, which in this case can boost corporate value. The composition of the capital structure necessary for a company to make such prudent decisions is also shaped by the decisions made by management correctly. In this respect, corporate governance prevents conflicts of interest within the company and ensures the formation of an appropriate capital structure.

The concept of corporate governance in companies has been the subject of many studies, just like capital structure. Conflicts of interest between managers and shareholders and between shareholders and lenders can be reduced when corporate governance principles are fully and correctly implemented in companies. By reducing information asymmetry between companies and shareholders, corporate governance puts ideas like fairness and transparency front and centre, making it one of the companies that investors prefer. Companies that are unable to implement corporate management effectively and efficiently experience rising costs, which puts them at risk of going bankrupt.

The relationship between corporate governance and capital structure has been examined in this study. By observing how the financial leverage structures have changed in those companies that have adopted corporate governance, it has also been attempted to ascertain which capital structure theory the companies have been operating under. Identifying which theory is the most useful variable in the structure of the board of directors of corporations that have implemented corporate

governance is also a goal. Later in the study, general concepts related to capital structure theories and corporate governance are given. After that, the studies on the subject are given, and finally, panel regression analysis and the findings obtained are presented.

## **2. Theoretical Framework for Corporate Governance and Capital Structure**

In this part of the study, the concepts of corporate governance, corporate governance principles and capital structure theories are briefly mentioned.

### **2.1. Corporate Governance**

Corporate governance is managing a company by protecting the rights of shareholders, stakeholders and the public (Mallin, 2016). In 1999 he promulgated four core corporate governance principles by the OECD directives (Siems and Alvarez-Macotela, 2017). Turkish Corporate Governance Principles under Turkish Commercial Code No. 6102. Fairness, transparency, accountability, responsibility.

Principle of fairness; the company's management treats all entitled parties equally, including minority and foreign shareholders, and defends their rights. The rights of the shareholders are secured by the shares they own.

Principle of transparency; company is open to shareholders and stakeholders. Companies are required to provide the public with accurate and comparable information. It must be disclosed in a way that is simple to access, except for company trade secrets.

Principle of accountability; the company's management is accountable to the administration, shareholders and stakeholders. Management is obligated to inform the public about its financial situation, earnings situation and management structure regularly.

Principle of responsibility; companies must comply with laws and ethical values while continuing to operate and increasing corporate value. It is to operate the company within the framework of ethical principles under relevant laws, articles of association and company rules. Board members must act diligently and conscientiously in the interests of shareholders. Where board decisions affect different shareholders differently, all should be treated equitably (Jesover & Kirkpatrick, 2005; Pamukçu, 2011; Yılmaz & Kaya, 2014; Zengin & Altınok Yılmaz, 2017).

It is the responsibility of the board of directors to ensure that corporate governance

follows its principles. If the board manages the company according to corporate governance principles, the company is expected to be more profitable and have lower funding costs (Tricker & Tricker, 2015). Therefore, one of the objectives of corporate governance principles is to increase the value of the enterprise. When companies are managed fairly, transparently, accountably and responsibly, companies attract more capital and are protected from mismanagement. When businesses act in accordance with corporate governance principles, it is expected that their competitiveness will increase in national and international markets.

It is also the responsibility of the board of directors to find low-cost capital for the company. This study examines the relationship between capital structure and corporate governance. Membership, which is indicative of board practice, is a hallmark of the board. The ratio of female directors shows the characteristics of the ratio of independent directors and foreign directors. As the proportion of women, independent and foreign directors on company boards increases, so does corporate governance compliance. As board members become more diverse, companies become more fair, transparent, accountable and responsible. The Corporate Governance Index was created in 2007 in order to identify companies that adopt the corporate governance principles and act in accordance with the principles in Turkey (Dizgil and Reis, 2019).

Studies in the literature show an increase in the proportion of women on boards (Wale, 2015; Mersland and Strom, 2007; Smith et al., 2005; Carter et al., 2003) and an increase in the proportion of independent directors (Manzaneque, 2016). Kyereboah-Coleman, 2008; Hambrick and D'Aveni, 1992) and increasing foreign membership (Doğan and Topal, 2016; Şengür and Püskül, 2011) have a positive impact on fixed performance. As the characteristic diversity of the board increases, it is expected to strengthen adherence to corporate governance principles and improve performance by reducing the cost of capital. For these reasons, the ratio of female members, the ratio of independent members and the ratio of foreign members, which show the characteristics of the member structure of the board of directors, are used as corporate governance indicators in this study.

## **2.2. Capital Structure Theories**

Capital structure is a key concept that influences a company's value maximization goals. Capital structure describes the use of debt/equity capital in a company (Yılmaz, 2014; Güner, 2016; Malakula, 2020). A high leverage ratio for a company implies a high financial risk for that company (Long and Malitz, 1985; Prezas, 1987; Enekwe, 2014; Uluyol et al., 2014).

Funding decisions, one of the key functions of financial management, are a result of the shaping of a company's capital structure (Myers, 2001; Romano et al., 2001; Büyükmert, 2015). The weighted average cost of capital will be reduced and the value of the company will rise by building a capital structure from the features with the appropriate weights. Numerous studies and significant theories on capital structure have been developed throughout history. The "net profit approach" is the first traditional theory, according to our classification of these theories into traditional and modern theories. In this approach, it is argued that the cost of capital and thus the company value is affected by the leverage ratio (Ertuğrul Ayrancı, 2016). This approach argues that the cost of liabilities is lower than the cost of capital, thus the weighted average cost of capital decreases with increasing leverage ratios, and assumes that increasing the leverage ratio of the capital structure also increases the value of company assets (Kisakurek and Aydın, 2013; Karadeniz et al., 2016; Engin et al., 2019). Another traditional theory is the net operating income approach. This approach argues that there is no link between company value and capital structure (Dizgil and Reis, 2021; Canki, 2013). In other words, changing a company's capital structure does not change the cost of capital. The main premise on which the model has been criticized is the assertion that higher levels of debt do not change the level of financial risk. In the 'traditional approach', the focus is on the concept of optimal capital structure. It is argued that with a single optimal capital structure and proper use of financial leverage, the value of a company increases (İskenderoğlu et al., 2012; Öztürk and Şahin, 2013). According to this method, borrowing in excess of the recommended capital structure raises the average weighted cost of capital and lowers market value.

Criticisms of Modigliani and Miller's model have led to the development of new theories. Since the M&M approach ignores bankruptcy and agency costs, a trade-off theory was developed that considers these benefits and costs (Çekrezi, 2013; Serrasqueiro & Caetano, 2015; Söylemez, 2019). This theory determines the optimal capital structure by taking into account the marginal utility of debt and the marginal cost of borrowing. The tax shield is considered the marginal cost of debt, bankruptcy, emergency costs, and the marginal profit of debt (Burucu and Öndeş, 2015). According to the balancing theory, the advantage of the benefit of debt occurs up to a certain point, but if it continues to borrow after this point, the loss of debt arises and increases the cost of capital (Chen, 2004; Baker and Wurgler, 2002).

The Pecking Order Theory is one of the most significant capital structure ideas in financial literature. According to this theory developed by Myers and Majluf (1984),

it is argued that there is a hierarchy in the capital structure of enterprises. According to this hierarchy, managers of companies should use their first choice internal resources in case managers of the companies invest or need cash, and if there is still a cash need, managers of companies should use their first chance for internal resources. If it is going to outsource, it should first finance it with debt and then turn to equity financing (Frank and Goyal, 2003; Vasiliou, 2009; Chen and Chen, 2011). Pecking Order Theory argues that a company's value is maximized when its resources are used in this order (Bulan and Yan, 2010). Another modern capital structure approach is the agency cost approach developed by Jensen and Meckling (1976). This approach creates conflicts of interest between management and shareholders, and between shareholders and lenders (Berger and Udell, 2006; Grigore and Ștefan-Duicu, 1976; Akay and Efsun, 2016). Conflicts of interest involving management and shareholders raise the price of stock, whereas those involving lenders and shareholders raise the price of employing leverage. However, the managers have to pay the debts. Therefore, managers of companies can avoid high risk. This reduces the likelihood of financial distress and bankruptcy. As a result, business value will increase as the cost of capital decreases (Sayman, 2012). However, using too much debt will backfire here. Another modern capital structure theory is the signal approach developed by Ross (1977). The signal approach is a theory based on asymmetric information, where it is believed that managers and lenders do not have the same information (Otluoğlu & Seval, 2017). In this method, companies declare high leverage ratios as a sign that managers of companies are stronger companies. In other words, it is argued that as a company's leverage ratio increases, its market value increases (Markopoulou and Papadopoulos, 2009; Yang et al., 2014).

There is no accepted theory of minimizing capital cost and maximizing company value. This is because the theory's applicability is dependent on the company's competitiveness, the sector it applies to, and the time of application. Because of these aspects, it is still the subject of research in the literature. In this study, the relationship between financial leverage ratios, which show the weights of debt ratios in the corporate governance of insurance companies, and their capital structure is examined.

### **3. Literature Review**

Papers in the literature mostly examine the relationship between financial performance and corporate governance. However, it has been observed that there is a lack of studies on the relationship between corporate governance quality and capital structure in Turkey.

Durgut and Köse (2022) investigated the factors affecting the capital structure decisions of non-life insurance companies operating in the Turkish insurance sector between 2009-2020. It has been determined that the return on assets ratio, business risk, loss/premium ratio, liquidity level and retention ratio indicators affect the leverage ratio.

Dizgil and Reis (2021) analyzed the relationship between the corporate governance and capital structure indicators of the companies included in the Corporate Governance Index between the years 2009-2017 using panel data method. Leverage ratio, equity ratio, short-term debt ratio and long-term debt ratio were used as capital structure indicators. Board size, firm age, firm size, return on assets ratio, foreign ownership, female member ratio and independent member ratio data were used as corporate governance criteria. It has been found that there is a significant relationship between the ratio of independent members, the ratio of female members, and foreign ownership and capital structure.

Türkmen (2020) examined the relationship between financial failure and corporate governance using the logistic regression method. The data of the companies included in the BIST100 index between 2009 and 2015 were analyzed. The investigation has shown that the leverage ratio is adversely impacted in businesses where the general manager also serves as the chairman of the board of directors.

Önder and Kavak (2019) examined the relationship between the corporate governance and financial performance of insurance companies operating in the stock market between 2008 and 2017 using panel data analysis method. The structure of the board of directors and audit committee was used as the financial performance indicator, return on equity and corporate governance indicators. It has been determined that there is a considerable correlation between corporate governance and financial performance.

Belas et al. (2018) The factors affecting the capital structure decisions of SMEs in the Czech Republic were investigated by logistic regression method. He used the number of employees indicator as the size of the company. As a result of the analysis, it was found that the size of the company affects the capital structure decisions. In addition, it has been concluded that entrepreneurs with a longer employment period prefer foreign capital more than their own capital. It has been revealed that the sector in which the business operates and the region in which it is located do not have a significant effect on the capital structure decisions.

İskenderoglu et al. (2018) the effect of corporate governance practices on capital

structure was investigated. Debt/Total Assets and Debt/Equity data of manufacturing industry companies included in the Corporate Governance Index between 2005 and 2013 were analyzed by panel data analysis. It has been determined that being a member of the Corporate Governance Index increases the borrowing rates of the companies in the selected time period.

Temiz and Dalkılıç (2018) examined the relationship between the capital structure and ownership structure of companies. Manufacturing sector companies traded in BIST between 2012-2016 were analyzed by panel data method. A significant and negative relationship was determined between the capital structure and the share of corporate and foreign partners. In addition, it was concluded that there is a positive relationship between the free float ratio and the leverage ratio, which is an indicator of capital structure.

Topaloğlu (2018) investigated the factors affecting the capital structures of the companies included in the Corporate Governance Index between 2007 and 2015 with panel data analysis. Non-debt tax shield, growth opportunity, operating leverage, Tobin's Q, and financial leverage were not shown to be significantly correlated. It has been found that there is a negative relationship between liquidity ratio, asset structure and return on assets ratio and financial leverage, and a positive relationship with firm size.

Bulathsinalage and Pathirawasam (2017) investigated the effect of corporate governance of publicly traded firms in Sri Lanka on the capital structure. It has been revealed that the composition of the board of directors has a significant positive effect on the capital structure and a negative effect of the board committee.

Hermassi et al. (2017) investigated the effect of corporate governance on capital structure. Data from 700 companies in Canada between 2002 and 2011 were used in the analysis. While leverage ratio is used as capital structure indicator, corporate governance index, board compensation, compensation policy, shareholder rights and disclosure policy data are used as corporate governance indicators. In line with the Pecking Order Theory, a negative relationship was found between leverage ratio and firm profitability and growth opportunity. In addition, it has been determined that the disclosure policy has a positive effect on leverage.

Iqbal and Javed (2017) investigated the effect of corporate governance on firm performance and capital structure decisions. The data of 173 manufacturing companies traded in the Pakistan stock exchange between 2009 and 2014 were analyzed by panel data analysis method. Being included in the corporate index has been accepted as a corporate governance indicator. As a result of the analysis,



it was concluded that being a member of the corporate governance index had a positive effect on capital structure and financial performance.

Fekadu (2015), in order to reveal the effect of corporate governance on financial performance, 10 insurance companies operating in Ethiopia from 2007-2014 were analyzed by panel data analysis. In the study of Fekadu, the size of the board of directors and supervisory board, and the number of independent and female members were used as corporate governance indicators. The study's findings led to the conclusion that the size of the board of directors, the ratio of independent and female members, and their effect on the financial performance of insurance businesses are meaningless and detrimental. Therefore, it is concluded that corporate governance has an insignificant effect on the financial performance of insurance companies.

Liao et al. (2015), according to the findings obtained as a result of the analysis, there is a significant positive relationship between corporate governance quality and leverage ratio as corporate governance independence increases.

Nejad and Wasiuzzaman (2015) investigated the factors affecting the capital structure of 171 companies traded in the Malaysia Stock Exchange between 2005 and 2010. In addition to financial ratios and economic indicators, the size of the board of directors has been added to the factors affecting the capital structure. As a result of the analysis, a significant and negative relationship was determined between the size of the board of directors and the capital structure.

Getahun (2014) was researched by panel data analysis method to examine the determinants of the capital structure of 9 insurance companies operating in Ethiopia between 2004 and 2013 and its effect on the performance of the Ethiopian insurance industry. Leverage ratio was used as an indicator of capital structure in the analysis. It has been obtained that the relationship between capital structure and company size and financial performance is significant.

Ege and Topaloğlu (2013) aimed to investigate the effects of ownership structure on capital structure. The companies included in the BIST30 Index between 2009 and 2015 were analyzed by panel regression analysis method. As a result of the analysis, it was concluded that the relationship between ownership structure and capital structure decisions is meaningless.

Jiraporn et al. (2012) investigated the effect of capital structure on corporate governance quality. It has been revealed that as the management quality decreases, the leverage ratio of the enterprises increases.

La Rocca (2007) examined the relationship between corporate governance, capital structure and firm value. The relationship between the capital structure and the value of the firm has been investigated. Business managers should consider the corporate governance factors of ownership concentration, administrative ownership, and the function of the board of directors when deciding on the capital structure, it has been observed.

Anderson et al. (2004) analyzes have found a negative relationship between the size of the board of directors, the ratio of independent members and the leverage ratio. It has been found that the size and independence of the board of directors have an inverse relationship with the cost of debt.

Chen (2004) investigated the firm-specific factors affecting the capital structure of companies traded in China using panel data analysis method. They show that firms in China borrow money in line with the Balancing Theory. In addition, it was concluded that corporate governance factors affect the capital structure of companies.

Chen et al. (1999) investigated the factors affecting the capital structure decisions of enterprises by panel data analysis method. There is no correlation between corporate governance and capital structure, and business management follows the Pecking Order Theory when making choices, according to research.

Berger et al. (1997) The factors affecting the capital structure of the companies that are members of the Corporate Governance Index were examined. It concluded that the borrowing ratio increased after shocks that dampened the consolidation of management security, including unsuccessful tender bids, reluctant chairmanship changes, and the addition of major shareholders to the board.

When the studies investigating the variables that have an impact on the capital structure are examined, it is seen that the corporate governance indicators have been included in the analysis more recently. The capital structure and corporate governance of the Turkish insurance firm has looked at as part of this study.

## **4. Analysis**

### **4.1. Purpose of the Analysis**

The study explores the relationship between the capital structure of insurance companies trading in Borsa Istanbul and their corporate governance mandates. A company's capital structure provides important information about its financial condition and influences its financial success. A company's risk appetite or risk appetite status is related to its financial leverage ratio. A company's risk ratio rises

as its financial leverage ratio does. But just because a company is risky doesn't mean it's generally in bad financial shape. Companies that take or can take risks are considered to have higher growth potential. The majority of academic research to date demonstrates that numerous factors affect a company's capital structure. In this sense, capital structure theory has also become the subject of many studies. This study examined at how insurance companies' capital structures and corporate governance practices relate to one another. It also looked at how corporate governance factors affect capital structures and how much of an impact they have.

## 4.2. Analysis Datasets, Variables, and Hypotheses

The study used annual data of insurance companies traded in Borsa Istanbul from 2014 to 2021. Our inability to specify a broad time range is due to the limitations of the paper. Such as the difficulty in accessing all mutable data by all businesses. Data were obtained from the FINNET site.

Sample of the Study:

The sample of the study consists of insurance companies operating in Borsa Istanbul. While one of them is a public insurance company, five of them are private equity insurance companies. Insurance companies traded in Borsa Istanbul have used as the data set of the implementation. Because The data used in the research can be obtained from insurance companies traded in the stock exchange. Also the insurance sector in Turkey can be represented by insurance companies traded in Borsa Istanbul.

**Table 1. Sample Insurance Companies**

<b>Code</b>	<b>Firms</b>
<b>SOIC</b>	<b>State-owned Insurance Companies</b>
TURSG	Türkiye Insurance
<b>PEIC</b>	<b>Private Equity Insurance Companies</b>
AGESA	AGESA Life Retirement
AKGRT	Ak Insurance
ANHYT	Anadolu Life Retirement
ANSGR	Anadolu Insurance
RAYSG	Ray Insurance

## Variables Used in the Study:

**Table 2. Dependent and Independent Variables and Codes**

Variables	Code	Formula
Female Member Rate – Independent	FMR	Number of Female Members/Total Number of Members
Independent Member Rate – Independent	IMR	Number of Independent Members/Total Number of Members
Foreign Member Rate – Independent	NMR	Number of Foreign Members/Total Number of Members
Financial Leverage Ratio – Dependent	FLR	Total Liabilities/Total Assets

The dependent variable of the paper is Financial Leverage Ratio. Financial Leverage Ratio shows the debt and equity structure of the companies' capital. Because of this Financial Leverage Ratio is used as the dependent variable. The aim of this study is to examine the relationship between the capital structure of insurance companies and their corporate governance. Therefore, the independent variable of the paper are Female Member Rate, Independent Member Rate and Foreign Member Rate. Because the corporate management of insurance companies varies according to the characteristics of the board members of the companies. Board members can be classified according to three characteristics. These characteristics are the gender, independence and foreignness of the members of the board of directors. Three independent variables that relate to corporate governance were chosen for the study; during the selection process, the key elements of corporate governance were chosen based on prior research, and variables without a multicollinearity issue were included in the model. The financial leverage ratio was used as the dependent variable. E-Views version 10.0 was used to analyze the model.

### Hypotheses of the Study:

$H_{0A}$ : There is no significant relationship between Capital Structure and Independent Members.

$H_{1A}$ : There is a significant relationship between Capital Structure and Independent Members.

$H_{0B}$ : There is no significant relationship between Capital Structure and Female Members.

$H_{1B}$ : There is a significant relationship between Capital Structure and Female Members.

$H_{0C}$ : There is no significant relationship between Capital Structure and Foreign Members.

$H_{1C}$ : There is a significant relationship between Capital Structure and Foreign Members.

Model Equation:

$$FLRit = \beta_0 + \beta_1 FMRit + \beta_2 IMRit + \beta_3 NMRit + \varepsilon_{it} \quad (1)$$

### 4.3. Horizontal Section Dependency and Homogeneity Test

One of the first steps to be done in panel data analysis is cross-section dependency and homogeneity tests. For this purpose, as a result of B Breusch-Pagan LM, Paseran scaled LM and Paseran CD tests for cross-sectional dependence, the H0 hypothesis, which argues that there is no cross-sectional dependence, was accepted ( $p > 0.05$ ). For the homogeneity test, the LR test was performed and the H0 hypothesis, which advocates the existence of homogeneity, was accepted ( $0.9750 > 0.05$ ).

**Table 3. Horizontal Section Dependency and Homogeneity Test**

<b>Horizontal Section Dependency Test</b>		
<b>Test</b>	<b>Test Statistic</b>	<b>Probability</b>
Breusch-Pagan LM	19.86909	0.1770
Paseran scaled LM	0.888970	0.3740
Paseran CD	-0.889967	0.3735
<b>Homogeneity Test</b>		
<b>Test</b>	<b>Test Statistic</b>	<b>Probability</b>
LR	1.237014	0.9750

### 4.4. First Generation Unit Root Tests

Unit root tests are divided into two classes: first-generation and second-generation root tests. The homogeneity test results obtained in this study found that the first-generation root test applies. The results obtained are shown in Table 4. Tests by Levin, Lin, and Chu (2002) and Hadri (2005) based on the homogeneity assumption, as well as tests by Hadri (2005) used in both homogeneity and heterogeneity situations, are also displayed in Table 4.

**Table 4. Results of Unit Root Tests**

Variables		Levin, Lin and Chu (2002)	Hadri (2005)
FLR	Level	-14.2286 (0.000)**	2.63926 (0.0042)*
FMR	Level	-1.69248 (0.0453)*	3.53079 (0.0002)**
IMR	Level	-15.4018 (0.000)**	1.86553 (0.0311)*
NMR	Level	-3.26020 (0.0006)**	2.59801 (0.0047)**

\*0,05 level, \*\*0,001 level

The deterministic function of the tests is constant+ trend. The delay length is determined automatically.

$H_0$ : There is a unit root.

$H_1$ : There is no unit root.

A unit root test providing a homogeneity assumption was applied to the dependent and independent variables used in the study. The resulting results confirmed the  $H_1$  hypothesis, which asserts that there is no unit root at the level of any individual variable.

#### 4.5. Panel Regression Model Selection

There are three different models for panel regression analysis. These models are pooled models with fixed and random effects. Before connecting to the model analysis, the most suitable model must be selected and there are some tests that need to be done for this. First of all, Chow and Breush-Pagan tests were performed and a choice was made between the fixed effect and the pooled model, and then a decision was made between the fixed effects model and the random effects models with the Hausman test.

Hypothesis of Chow Test:

$H_0$ : The pooled regression model is suitable

$H_1$ : Fixed effects model is suitable (FEM)

Hypothesis of Breush Pagan Test:

$H_0$ : The pooled regression model is suitable.

$H_1$ : Random effects model is suitable (REM)

Hypothesis of Hausman Test:

$H_0$ : Random effects model is suitable (REM)

$H_1$ : Fixed effects model is suitable (FEM)

**Table 5. Prediction Method Selection Test Results**

Test	Test Value	Prob.	Decision
Chow	26.749677	0.0000	$H_0$ rejected: FEM
Breush –Pagan	46.732121	0.0003	$H_0$ rejected: REM
Hausman	1.380759	0.7101	$H_0$ excepted: REM

The panel regression analysis was estimated using the random effects model because the results from Table 5 show that this is the most suitable estimation method. Table 6 displays information about the model's outcomes.

**Table 6. Panel Regression Results**

<b>Dependent Variable:</b> Financial Leverage Ratio				
<b>Method:</b> Panel EGLS (Cross Section Random Effects)				
<b>Sample:</b> 2014-2021				
<b>Time Range:</b> 8				
<b>Number of Horizontal Sections:</b> 6				
	Coefficient	Standart Error	T-Statistic	Probability
FMR	11.33288	4.320053	2.623320	0.0119*
IMR	26.44225	7.987331	3.310524	0.0019*
NMR	61.08398	15.42865	3.958869	0.0003**
Sabit	63.15344	6.720421	9.397244	0.0000**
$R^2 = 0.935$ F Value= 9.515243      p (F)= 0.000058      Durbin Watson= 1.9662661 pBreush-Pagan(LM)=0.8212      pJaurque-Bera=0.25284				

\*%5 level \*\* %1 level

In the study, it was determined that the most suitable model was the random effects model and the model was estimated with the random effects estimator. The results analysis shows that the overall model is significant ( $0.000058 < 0.05$ ). All of the model's presumptions were verified, and since they were all verified to be true, the results were of an interpretable quality.

The model equation is:

$$FLR_{it} = 63.15244 + 11.33288FMR_{it} + 26.44225IMR_{it} + 61.08389NMR_{it} + \varepsilon_{it} \quad (2)$$

Findings:

- The probability value of the female member ratio is 0.0119, which is significant at the level of % 5, and it was discovered that there was a positive correlation between the leverage ratio and the ratio of female members. However, it can be stated that a % 1 increase in the rate of female members will increase the leverage ratio by % 11,33288.
- The ratio of independent members and the leverage ratio was found to be positively and significantly correlated ( $0.0019 < 0.05$ ), and it was observed that a % 1 increase in the independent members would result in a % 26.44225 decrease in the leverage ratio.
- The number of foreign members and the leverage ratio was found to be positively correlated, and it was determined that this correlation was statistically significant. It has been determined that a % 1 increase in the proportion of foreign members will result in a % 61.08398 increase in the leverage ratio.
- The analysis confirms the validity of hypotheses H1a, H1b, and H1c, and it was discovered that the percentage of foreign members has the greatest impact on the model, while the percentage of female members has the least impact.

## 5. Conclusion and Recommendations

In this study, the relationship between outsourcing financing of insurance companies and the structure of the board of directors, which is one of the corporate governance indicators, has been examined. The leverage ratio is used as an indicator of capital structure, and the ratios of female members, independent members and foreign members are used as corporate governance indicators. Panel regression analysis method was used in the study in which corporate governance indicators are independent and leverage ratio, which is the capital structure indicator, is the dependent variable. As a result of the analysis, it has been revealed that there is a significant and positive relationship between the capital structure of insurance companies and their corporate governance. In addition, it has been found that the most effective corporate governance indicator on the capital structure is the rate of



foreign members.

Theoretically, the cost of capital should fall when the four fundamental principles of corporate governance: fairness, transparency, accountability and responsibility are followed. Adherence to corporate governance principles increases as the nature of boards diversifies. The results of this study show that liability increases as board characteristics increase.

As a result of the analysis, it was found that there is a significant and positive relationship between the capital structure of insurance companies and corporate governance. As the proportion of female, independent and foreign directors on corporate boards increases, so does the leverage ratio. It has been observed that insurers with stronger corporate governance take on more debt. More debt is used as a source of external financing.

Dizgil and Reis, 2021; Bulathsinalage and Pathirawasam, 2017; On the other hand, Temiz and Dalkılıç, 2018; Anderson et al., 2014; Chen, 2004; inconsistent with their work.

Businesses have been seen to increase their debt loads as corporate governance becomes more robust. A company that can borrow more is more trustworthy. Therefore, insurers that take on more debt project a more positive image to investors. In other words, it trades with a signal approach. According to the signals approach, companies look strong when borrowing. Therefore, borrowing companies are considered strong. According to one of the modern capital structure theories, the signal approach, highly leveraged companies are stronger companies (Ross, 1977). A company with a high leverage ratio indicates a strong company.

Companies with strong corporate governance tend to borrow more debt as an external source of funding. Companies will be stronger if managers of companies can actively use borrowed funds. Because borrowing means taking risks.

A literature review found limited research examining the impact of corporate governance on financial management and its impact on capital structure. In this context, the study is expected to contribute to the literature.

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# YAZIM KURALLARI

1. Makaleler metin, tablo, şekil ve kaynak kısımları ile birlikte toplam 10.000 kelimeyi aşmamalıdır. Makaleler; Microsoft Word programında, kenarlardan (alt, üst, sağ, sol) 2,5 cm. boşluk bırakılarak, Times News Roman yazı tipinde, 12 punto ve 1,5 satır aralık ölçüsü kullanılarak yazılmalıdır.
2. Makalenin ilk sayfasında; makalenin başlığı büyük harfle, sayfa ortalanarak ve koyu olarak verilmelidir. Bunun altına ise yazarların isimleri ve adresleri başlıkla aynı şekilde verilmeli ve yazarların unvanları ve kurumları, isimlerin yanına konulacak yıldız işareti ile ilk sayfanın altında yer alacak not ile belirtilmelidir. İsimlerden sonra makale hangi dilde yazılmışsa önce o dilde en fazla 100 kelimedenden oluşan Özet (Abstract), altında ise diğer dilde yazılan 100 kelimedenden oluşan ikinci özet verilmelidir. Türkçe ve İngilizce hazırlanacak özetler makalenin amacını, uygulanan metotları, bulguları ve sonuçları açıklamalıdır. Özetlerin altında ise Türkçe ve İngilizce olarak makalenin içeriğini en iyi anlatan en az üç anahtar kelime (key words) ile makaleye uygun JEL sınıflaması verilmelidir.
3. Makalenin ikinci sayfasından başlayacak metnin içerisindeki her paragraftan sonra 1,5 satır boşluk bırakılmalı ve paragraflar içeriden başlamalıdır. Metin içinde yer alacak ana başlıklar ve alt başlıklar 1., 1.1., 1.1.2. şeklinde numaralandırılmalı, koyu ve sola bitişik olarak yazılmalıdır.
4. Tablo, grafik ve şekiller metnin içerisinde yer almalı ve bunlara sola yanaşık başlık ve sıra numarası verilmelidir. Başlıklar tabloların ve şekillerin üzerinde yer almalıdır. Tablo ve şekiller sayfa içerisinde dikey olarak verilmelidir. Tam sayfa olan tablo ve şekiller sayfaya yatay olarak yerleştirilebilir. Denklemler sayfaya ortali olarak verilmeli ve denklemlere verilecek sıra numaraları parantez içinde ve denklemin sağına yerleştirilmelidir.
5. Kaynaklara yapılan göndermeler, dipnotlar yerine metin içinde parantez arasında gösterilmeli ve sırasıyla yazarın soyadı ve tarih yazılarak verilmelidir. Örneğin; tek yazar olması durumunda (Jarvick, 1996), iki yazar olması durumunda (Frantzich ve Sullivan, 1996), yazarlar ikiden fazlaysa (Caroline, Pauwels, v.d., 2000). yazarın aynı yıl içinde yayımlanmış birden fazla eserine gönderme yapılıyorsa (Noam, 1991a) kullanılmalıdır. Birden fazla kaynağa yapılan göndermeler birbirlerinden noktali virgülle ayrılmalıdır. (Jarvick, 1996; Noam, 1991; Dörr, 2000).

6. Açıklama gerektiren durumlar için hazırlanan dipnotlar metnin içinde numaralandırılmalı ve atıf yapılan sayfada yer almalıdır. Dipnotlar 10 punto ile satır aralıksız Times News Roman yazı tipinde yazılmalıdır.
7. Atıf yapılan bütün kaynaklar, çalışmanın sonunda "Kaynakça" başlığı altında gösterilmelidir. Kaynaklar alfabetik sırada ve aşağıdaki örnekler dikkate alınarak verilmelidir.

### **i. Kitap**

Çolak, Ö. F.. (2001). Finansal Piyasalar ve Para Politikası. Ankara: Nobel Yayın Dağıtım.

Frantzich, S. ve John, S.. (1996). The C-Span Revolution. Oklohama:Oklahoma University Press.

### **ii. Derleme**

Arıcı, K.. (2003). Sosyal Yardım Hakkı. Çalışma Ekonomisi ve Endüstri İlişkileri - Seçme Yazılar, (Ed.) E. Tuncay Kaplan ve Bülent Bayat. Ankara: Gazi Üniversitesi İ.İ.B.F. Yayını.

### **iii. Dergi**

Aydoğmuş, O. ve Çatık, N.. (2006). Türkiye'de Para İkamesi Altında Para Talebi: 1986-2005. Tisk Akademi, 1(1): 58-74.

### **iv. Çalışma Tebliği**

Shirley, M. M. ve Walsh, P.. (2000). Public versus Private Ownership. World Bank Policy Research Working Paper, No:2420.

### **v. İnternet**

Bankacılık Düzenleme ve Denetleme Kurumu, (2007) Aylık Bülten Şubat 2007, [www.bddk.org.tr](http://www.bddk.org.tr).