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Presenting a Model for the Effect of Corporate Governance Measures on Audit Report Lag by a Structural Equation Approach

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ABSTRACT

The efficiency of financial reporting is considered as one of important characteristics of annual reporting quality. It is usually hidden in the timeliness of accounting information, which is one of qualitative characteristics of accounting information. The usefulness of information disclosed by companies reduces as lag increases. Corporate governance as the most important controlling and monitoring mechanism has a significant impact on the efficiency of financial reporting, and affects firm value. The objective of this research is to present a model for the effect of corporate governance measures on audit report lag by a structural equation approach in companies listed on the Tehran Stock Exchange. In the research, the independent variables are corporate governance measures, and the dependent variable is audit report lag. The research method is applied-correlational. Data is collected from 148 companies listed on the Tehran Stock Exchange in the time period of 2011 to 2019, and analyzed by Stata 12, SPSS and Smart-PLS. The method used for collecting data is from the Rahavardnovin software. The hypotheses are tested by the multivariate linear regression test and structural equations. According to the results from hypothesis testing, the corporate governance measures of audit committee experience, audit committee size, audit committee independence, ownership concentration (first measure), ownership concentration (second measure) and board independence have a significant effect on audit report lag; however, the variables of audit committee financial expertise, audit committee gender, ownership structure, board size and CEO duality don't have any significant effect on audit report lag.

Keywords: Audit report lag, Corporate governance measures, Structural equations

1. Introduction

Corporate governance as the most important controlling and monitoring mechanism has a significant impact on the efficiency of financial reporting. The efficiency of financial reporting is usually hidden in the timeliness of accounting information, which is among the qualitative characteristics of accounting information. The usefulness of information disclosed by companies reduces as lag increases (Binti Hashim & Abdul Rahman, 2012). Also, information reliability in balance with the timeliness of information is stated as a main component of the qualitative characteristics of accounting information in Concepts Statement No. 2 and the Iranian theoretical framework. Financial report audits, on one hand, and the timely presentation of audited financial reports, on the other hand, can lead to the desired quality of financial reporting. In this regard, by publishing the 2007 Executive Instruction on Information Disclosure by Companies Listed on the Tehran Stock Exchange, the Tehran Stock Exchange's board of directors has required these companies to present their audited financial statements up to four months after the fiscal year-end.

Ashton et al. (1987) define audit report lag as the time interval between the *fiscal year-end* and the *audit report date. This lag* will cause a firm's current and future shareholders to postpone their transactions until the financial statements are released, which will also have a negative effect on the company's stock price. Owusu-Ansah (2000) states the timeliness of audit process as one of measures of the timeliness of financial statements. So, firms need to care about their audit process in order to have the timely financial statements. Research has indicated that the shorter the interval time between the financial statement dates and their release dates, the better and more effective users of financial statements can use released information. Anyway, it should be noted that financial statements cannot be provided for users without auditors' or independent professionals' opinions and that competent individuals' opinions on financial statements increase information reliability; therefore, users are more confident in presented information and their decisions. In other words, users generally trust financial statements based on audit reports. Nowadays, the timeliness of accounting information has become an important issue as a result of phenomenal changes in both modern technology and business practices worldwide, including corporate governance practices (Afify, 2009). Therefore, a question raised in the research is whether strengthening corporate governance mechanisms would cause reduced audit report time and the timely presentation of audit reports.

2. Review of Literature

In a study conducted by Raweh et al. (2019) with 255 companies listed in the Muscat Securities market, it was found that audit committee size was positively associated with audit report lag, and that audit committee financial expertise reduced audit report lag. This study did not find evidence that audit committee independence was associated with audit report lag. Rusmanto and Herlina (2020) examined the relationship between corporate governance and audit report lag in Indonesian publicly listed companies. They found that audit committee size and board size had a significant negative relationship with audit report lag, and that audit committee independence, audit committee expertise, and independent commissioners had an insignificant negative relationship with audit report lag. In a study done by Ogoun et al. (2020), it was observed that the audit committee did not necessarily facilitate speed in the release of annual financial statements. However, the number of financial experts on the committee contributed considerably to ensuring the timeliness of audit reports.

In a study conducted by Satyawan and Aisyahturahmmi (2020), the impact of company size, political connections, audit opinion, and audit fee on audit report lag was examined over the time period of 2013 to 2017 in companies listed on the Indonesia Stock Exchange. The results indicated that company size, political connections and audit fees had a negative impact on audit report lag while audit opinion didn't show any impact on audit report lag. Fujianti and Satria (2020) investigated factors contributing to audit report lag in 91 manufacturing companies listed in on the Indonesia Stock Exchange. The results showed that company size could shorten audit report lag. According to their study, financial leverage didn't indicate any significant effect on audit report lag. Their findings showed that large companies had better information and technology systems to strengthen internal control and speed of presentation of financial statements, compared to smaller companies

Hazeri-Nayeri et al. (2019) examined the relationship between audit report lag and stock price volatilities in companies listed on the Tehran Stock Exchange. The results from model estimation showed that the individual coefficients in the conditional variance equation were significant. In other words, the variability of the model was confirmed. Also, the results from hypothesis testing showed that the primary hypothesis regarding the significant effect of the audit report lag on the company's stock price was confirmed. Therefore, companies whose audit reports were delayed also had lower stock prices in average. Other results showed that in the estimated regression, the financial leverage coefficient was not significant,

but company size had a negative and significant effect on stock prices. Bozorg-Asl et al. (2018) examined factors affecting on timely release of audit report from 2011 to 2014 in the companies listed on the Tehran Stock Exchange. The findings showed that audit firm size, type of auditor's opinion, reporting risk, number of clauses in audit report, and board size had a significant positive association with audit report lag. Also, ownership concentration and audit committee expertise had a significant negative association with audit report lag. Salehi et al. (2016) addressed to investigate the impact of the existence of the audit committee and its characteristics on audit report lag from 2009 to 2014 in companies listed on the Tehran Stock Exchange. The results obtained from 54 companies through combined data (panel data) didn't show a significant relationship between the existence of the audit committee and audit report lag. Also, the results obtained from 142 companies through combined data (panel data) indicated that audit committee financial expertise and experience had a significant negative association with audit report lag; other audit committee characteristics didn't have any significant association with audit report lag. Vaez et al. (2016) examined the relationship of some audit quality indicators and corporate characteristics with audit report lag in 2005 to 2012 in companies listed on the Tehran Stock Exchange. The results from the research hypotheses showed that auditor tenure and ownership concentration had a negative association with audit report lag; there was a significant relationship between bankruptcy risk and audit report lag. Also, the results didn't indicate a significant relationship between auditor's industry expertise and audit report lag.

Wu et al. (2008) examined the relationship between the timeliness of a firm's annual report and board characteristics. The results suggested that the number of board members, institutional ownership, ownership structure and technological changes were related with reporting time. In a study titled "The Impact of Independence and Ownership Structure on the Timeliness of Corporate Internet Reporting of Irish-listed Companies," Abdelsalam and El-Masry (2008) concluded that the timeliness of Corporate Internet Reporting was positively associated with board independence and ownership structure. Furthermore, the results indicated that large companies were faster in posting their annual reports to their websites.

Siti et al. (2011) investigated the association between audit committee effectiveness and the timeliness of reporting. The findings showed that timeliness of reporting was associated with audit committee effectiveness, leading to reducing financial reporting lead time. Factors such as financial expertise, experience, duality, independence, power, and frequency of meetings were related to audit committee effectiveness. In a study conducted by Nor et al. (2010), it was found that the active and larger audit committee shortened audit delay. However, audit committee independence and expertise were not associated with the timeliness of audit report. Hashim and Abdul Rahman (2012) examined the relationship between corporate governance mechanisms and audit report lag among companies listed on Bursa Malaysia from 2007 to 2009. The authors found that audit committee independence and expertise could assist in reducing audit report lag. There was no evidence on the association of board independence and CEO duality with audit report lag. In a study conducted by Apadore and Noor (2013) with 180 companies listed at Bursa Malaysia, it was found that audit committee size and ownership concentration were significantly associated with audit report lag. However, audit committee independence, audit committee expertise and types of auditors were found to have insignificant relationship with audit report lag.

Sarraf et al. (2015) investigated the relationship between investment opportunities of companies and audit report lag from 2003 to 2013 in 77 companies. The results showed that companies with greater investment opportunities had lower audit report lag. Ilaboya and Christian (2014) investigated corporate governance in relation to audit report lag in Nigeria. They found that board size had a significant effect while board independence and audit committee size had no significant effect on audit report lag. Sultana et al. (2015) investigated the relationship between audit committee expertise and audit report lag. The findings showed a significant negative relationship between audit committee expertise and audit report lag. In other words, audit committee financial expertise leads to shorter audit report lag. Basuony et al. (2016) examined 201 companies for the time period from 2009 to 2013. The authors found that CEO duality, board size, board independence and ownership concentration significantly affected audit report lag. Samaha and Khlif (2017) examined factors contributing to reduced audit report lag and found that audit committee characteristics and independent auditors, as well as corporate governance factors significantly contributed to the timeliness of audit reports.

3. Theoretical Foundations

Timely release of financial information can be useful when information has a predictive value. Such information is required to be discernible and be provided for users of financial statements in a timely manner. If financial information and reports are not provided for users in a due time, they will not have useful information to make decisions and judgments,

increasing information asymmetry and making uncertainty in investors (Satyawan & Aisyahturahmmi, 2020). Information released by capital market on behalf of companies in a given time is a factor contributing to investors' decisions (Fujianti & Satria, 2020). Corporate governance is usually effective in timely release of financial statements and results in activity assessment by managers and lower risk (Rusmanto & Helina, 2020). Companies in which corporate governance is applied affectively are usually release their information and reports with lower lag, which decreases information content (Rusmanto & Helina, 2020).

Audit Committee

The audit committee, as one of corporate governance characteristics, must ensure that financial reporting information, including information on financial performance and corporate governance, is provided for key investors and other stakeholders in a timely manner. Therefore, the corporate governance framework must ensure that material items in financial reporting, including financial and regulatory information on investors and other shareholders, are provided as soon as possible (Sultana, 2015). An effective and powerful audit committee increases audit independence, audit quality and internal control structures, and promotes management responsiveness and responsibility (Ogoun et al., 2020). It plays an important role in financial reporting process, management monitoring, and involvement with an independent auditor (Raweh et al., 2019). Experienced audit committee members have greater expertise, reputation and commitment, and are willingness to perform a better monitoring role (Chan et al., 2013).

Furthermore, audit committee members with financial expertise contribute to reduced audit report lag and risk management processes (Sultana, 2015). Various studies of gender have shown that females are more financially conservative, more ethically conscientious, and less risk-seeking than males (Powell & Ansic, 1997). Audit committee independence causes reduced financial restatements by firms, increases accuracy and reliability of financial statements, and reduces time spent on issuing the audit report (Lary & Taylor, 2012; Sultana, 2015). As audit committee size increases, firm performance, the oversight role of audit committee, and the efficiency of financial reporting is improved (Nor et al., 2010).

Ownership Structure (Blockholder)

Ownership *Structure* is considered as the most important parameter affecting a firm's valuation and their orientation in capital markets, and specifying the type of ownership concentration is a control and governance tool (Dastgir et al., 2020).Carslaw and Kaplan (1991) found that companies that were owner controlled (if 30% or more of their stocks were controlled by a single outside investor) had longer audit report lag, compared to companies that were manager controlled. The blockholder is able to directly intervene in financial report release in order to achieve his goals, causing audit report lag. But in companies in which ownership is separate from management, management tries to release financial reports earlier and with a shorter delay in order to fulfill its responsibilities as quickly as possible and get its account settlement by holding a meeting and approving financial statements. Also, according to a study conducted by Jaggi and Tsui (1999), the composition of shareholders is related to the audit report date. Al-Ajmi (2008) concluded that when the number of blockholders increased, the period between the auditor' signature dates and the publication dates became shorter.

Ownership Concentration

In agency theory, two different effects of ownership concentration are considered: the potential substitution effect between ownership and internal controls, and the effect of expropriation risk. Ownership concentration, on one hand, means more power and control by blockholders, which can cause their more oversight. Ownership concentration has an important role in regulating management behavior, which can decrease agency costs. Ownership concentration, on the other hand, results in an increase in minority shareholders' ownership risk, followed by increased agency costs (Hassani & Barkhordari, 2020).. Ownership concentration refers to a situation in which a significant amount of a company's shares belong to blockholders (majority shareholders), and indicates that what percentage of the company's shares are in the hands of few ones. The presence of blockholders may increase and improve monitoring in firms, causing better firm performance. The majority of studies with emerging economies and countries with less developed stock markets have shown that there is a positive relationship between ownership concentration and firm performance, and that institutional investors (legal entities) are more effective in monitoring firm performance than individual and government shareholders. As with other developing countries, Iran stock market has a highly concentrated ownership structure; furthermore, this ownership structure is always associated with greater efficiency (Mahdavi & Maydari, 2005).

The more widely held the client's shares, the greater the number of individual investors that rely on the client's financial statements. Greater reliance on the client's financial statements by diverse individual investors increases the client's (and auditor's) exposure

to litigation [risk] … thereby increasing auditor business risk (Baber et al., 1993). Conversely, it can be argued that the auditor's business risk will be limited if the company is family owned and controlled, because the auditor's exposure is primarily limited to investors who have inside information (Jaggi & Tsui, 1999). Therefore, given the role that ownership concentration has on management monitoring and control, as well as the auditor's business risk, audit report lag could be expected to decrease as ownership concentration increases. According to Bozorg-Asl et al. (2018), there is a significant relation between ownership concentration and audit report lag.

Board Independence

The percentage of board independence has a positive and significant impact on audit quality. The higher the percentage of board independence, the more effective oversight of management, resulting in enhancing inherent risk and reducing audit report lag (Afify, 2009). According to Cohen et al. (2002), in a case in which a client's governance structure has effectively implemented strong monitoring, there is a potential for less extent of tests of details and greater assurance of the integrity of financial statements. Independent board members have an effective and outstanding role in timeliness of audit reports (Basuony, 2016).

Board Size

Board size (number of members) is one of corporate governance mechanisms and an important element of board characteristics that shortens audit report lag (Rusmanto & Helina, 2020). Most researchers have found that board size can improve firm performance by the firm's more need for communicating with the outside environment, and by more executive responsibility for the board (Moghadam and Momeni-Bansari, 2012).

Determining an ideal size of the board has been a controversial debate in corporate governance literature (Lawal, 2012). The optimum number of board members needs to be determined in such a way that the presence of enough members is ensured to respond and perform various functions (Hasas-Yeganeh et al., 2008). Jensen (1993) argued that the optimum board size board should be around *seven or eight* directors. Since the board can affect the firm's relationship with the auditors, this ability can also affects the completion time of the audit work and the timeliness of performing it (Wu et al., 2008).

In companies listed on the Iranian Stock Exchange, the number and composition of board members should be in such a way that an analysis and review of various aspects make the object of the company possible for a rational decision. In large companies, the number of board members must be at least seven (Corporate Governance Code, 2007).

CEO Duality

In conditions in which the CEO is also the chairman of the board (vice-chairman), it is called CEO duality, and in this case, the CEO has potentially more power. Agency and stewardship theories have opposite predictions regarding CEO duality as a corporate governance practice. Agency theory states that the *separation* of the *chair* and *CEO roles causes effective oversight by the board; however*, stewardship theory states that the lack of the *separation* of the *chair* and *CEO roles causes improved organizational performance (Rajabi-Damavandi et al. 2020).* Therefore, When the CEO also serves the dual position of chairperson of the board, this signifies the concentration of decision making power and hampers board independence and reduces the board ability to execute its oversight roles (Nor, et al. 2010). Furthermore, the dual structure allows the CEO to effectively control information available to other board members, thereby preventing effective oversight (Basuony, 2016). Auditors may also observe a higher risk of audit failure in companies in which the chairman of the board (vice-chairman) and CEO are one and the same, resulting in a higher range of withholding or distorting facts and even fraud. This affects auditors' work in estimating control risk and audit risk, audit hours and the nature of tests.

4. A Model for Hypothesis Testing

$$ARL_{it} = \beta_0 + \beta_1 ACEXP_{it} + \beta_2 ACExperience_{it} + \beta_3 ACEGender_{it} + \beta_4 ACSIZE_{it} + \beta_5 ACINDEP_{it} + \beta_6 Ownershipstructure_{it} + \beta_7 Ownershipconcentration1_{it} + \beta_8 Ownershipconcentration2_{it} + \beta_9 BIND_{it} + \beta_8 BDS_{it} + \beta_9 DUAL_{it} + \varepsilon_{it},$$

where β_0 is y-intercept; ARL is audit report lag; ACXEP is audit committee expertise; ACExperience is audit committee experience; ACEGender is audit committee gender; ACSIZE is audit committee size; ACINDEP is audit committee independence; Ownershipstructure is ownership structure; Ownershipconcentration is ownership concentration; BIND is board independence; BDS is board size, and DUAL is CEO duality.

5. Research Method

The present research is applied research. The objective of the research is to present a model for the effect of corporate governance measures to audit report lag by a structural equation approach. In the research, a panel data model is used to examine the relationships between variables. The multivariate regression model

is used to prove hypotheses, and structural equations are used to determine a model.

We use panel data so the use of structural equations can't be an appropriate method. Individual variables, therefore, are tested by Stata 12, and then, in general, variables are tested by Smart-PLS. The corporate governance measures are our latent variable.

Statistical Population and Sample

In the research, the statistical population includes companies listed on the Tehran Stock Exchange operating in the Tehran Stock Exchange from 2011 to the end of 2019. For this purpose, 148 listed companies were matched with the following criteria, and after reviewing the reports of the boards to the general assembly in all listed companies during the period time, 148 companies were identified as the sample:

1) Considering required information from 2011, companies listed on the Tehran Stock Exchange until the end of March 2010 and not removed from the list until the end of 2019;
2) In terms of increased comparability, their financial period shall end on March 29. There shall be no change in the fiscal year during the time period under study (2011-2019);
3) During the time period under study, their stocks shall actively be traded on the Stock Exchange, and they shall not have inactive stocks;
4) Required financial information, especially the notes to the financial statements and the annual reports of the boards to the General Assembly, shall be available in order to extract needed data;
5) Not be a financial intermediary (investment, holding, leasing, bank and insurance company) due to its different function.

6. Hypotheses

Our primary hypothesis is:

H. *Governance Corporate has a significant effect on audit report lag.*

Our secondary hypotheses are as following:

H1. *Audit committee financial expertise has a significant effect on audit report lag.*

H2. *Audit committee experience has a significant effect on audit report lag.*

H3. *Audit committee gender has a significant effect on audit report lag.*

H4. *Audit committee size has a significant effect on audit report lag.*

H5. *Audit committee independence has a significant effect on audit report lag.*

H6. *Ownership structure (blockholder) has a significant effect on audit report lag.*

H7. *Ownership concentration (first measure) has a significant effect on audit report lag.*

H8. *Ownership concentration (second measure) has a significant effect on audit report lag.*

H9. *Board independence has a significant effect on audit report lag.*

H10. *Board size has a significant effect on audit report lag.*

H11. *CEO duality has a significant effect on audit report lag.*

7. Measurement of Variables

Independent variables of the primary hypothesis are:

- Audit committee financial expertise: It is the percentage of audit committee members with financial expertise, calculated by dividing audit committee members with financial expertise by the number of audit committee members (Salehi et al. 2016);
- Audit committee experience: It is equal to 1 if at least one audit committee member has prior experience as an audit committee member, otherwise 0 (Salehi et al. 2016);
- Audit committee gender: It is equal to 1 if there is at least one female on the audit committee, otherwise 0 (Salehi et al. 2016);
- Audit committee size: It represents the number of audit committee members, composed of three or five members in Iran (Salehi et al. 2016);
- Audit committee independence: It is equal to the percentage of independent audit committee members, calculated by dividing independent audit committee members by the number of audit committee members (Salehi et al. 2016);
- Ownership concentration: It represents how company shares are distributed among the company's various shareholders. The lower the number of shareholders, the more concentrated ownership. In the research, following Astami and Tower (2006), ownership concentration is defined as the sum of shares owned by natural and legal persons who hold 10% or more company shares; this information is available through published financial statements. Also, the second measure of ownership concentration (i.e. Herfindahl-Hirschman index) is used. The Herfindahl-Hirschman index (HHI) is calculated by the sum of squared percentage shares held by company shareholders, increases as ownership concentration increases, and will have the highest values if all shares belong to a single investor. The resulting value is between 0 and 1. The closer it is to 1, the higher

concentration; in contract, the closer it is to 0, the lower concentration (Hasas-Yeganeh et al., 2008). HHI is calculated by the following relation:

$$\mathrm{HHI} = \sum_{t=1}^{n} (\frac{Pi}{P} \times 100).$$

- Ownership structure (blockholder): It is equal to the percentage of shares owned by blockholders (Rasouli-Ghahroudi & Fakhraei, 2017);
- Board independence: It is equal to the proportion of non-executive directors to the total number of directors (Bemby et al., 2013);
- Board size: It is equal to the number of board members (Abidin & Ahmad-Zaluki, 2012):
- CEO duality: It is equal to 0 if the CEO is also the chairman of the board (vice-chairman) and there is the dual role of the CEO, otherwise 1 (Mouna & Anis, 2013).

8. Findings

We use panel data so the use of structural equations can't be appropriate. Individual variables, therefore, are tested by Stata 12, and then, in general, variables are tested by Smart-PLS. The corporate governance measures are our latent variable.

Descriptive statistics for main variables in the model are presented in Table 1, using the spss software.

Table 1. Descriptive statistics for the variables in the research

Variables	Mean	Median	Maximum	Minimum	SD
Audit report lag	79.413	83.000	138.000	17.000	24.426
Audit committee financial expertise	0.506	0.667	1.000	-	0.401
Audit committee experience	0.527	1.000	1.000	-	0.499
Audit committee gender	0.073	-	1.000	-	0.260
Audit committee size	2.117	3.000	5.000	-	1.476
Audit committee independence	0.486	0.667	1.000	-	0.366
Ownership structure (blockholder)	50.121	51.000	99.450	2.180	21.286
Ownership concentration (first measure)	64.553	69.470	99.450	-	22.912
Ownership concentration (second measure)	0.335	0.313	0.989	0.000	0.211
Board independence	0.676	0.600	1.000	-	0.196
Board size	5.067	5.000	7.000	4.000	0.363
CEO duality	0.249	-	1.000	-	0.433

Table 1 shows descriptive statistics for variables in the research. The most important central indicator is mean, which represents the equilibrium point and center of gravity of distribution, and is an appropriate indicator to show data centrality. Another descriptive parameter is standard deviation (SD), which is the average squared deviation of a data value from mean, and represents data dispersion. Also, minimum and maximum in the table above represent the range of variations in data. Median represents the data midpoint-half of data is smaller than median and half of data is larger.

As seen in table 1, mean, median, maximum, minimum and SD, respectively, are given for each variable in the research.

F-Limer Test and Haussmann Test

The F-Limer test is used to determine whether the use of the panel data method will be effective in model estimation; the Haussmann test is used to determine which method (fixed effects or random effects) will be more appropriate for model estimation. The results from these tests are given in Table 2.

Table 2. Results from F-Limer and Haussmann Tests

Test	Test statistic	Value of test statistic	Significance level	Result
F-Limer	F	88.14	0.000	Panel model (having fixed effects or random effects)
Haussmann	chi-square	44.34	0.000	Fixed-effects hypothesis

Considering the results from the F-Limer and Haussmann tests (p-values less than 0.05), the panel data and fixed-effects methods are used in the model.

Heteroskedasticity Test and Autocorrelation Test

One of assumptions of a regression equation is constant error variance, which is known as the assumption of homoscedasticity. When variance of error terms is not constant and changes, there will be heteroskedasticity. Another assumption of a linear regression model is zero covariance between error components over time (or for types of data cross-sectionally). In the research, the LR test and Wooldridge test are used for heteroskedasticity and autocorrelation, respectively.

Table 3. Autocorrelation test and heteroskedasticity test

Autocorrelation test			Heteroskedasticity test		
Autocorrelation	Significance level	F	Heteroskedasticity	Significance level	F
Yes	0.000	21.88	Yes	0.000	19.11

Since the p-value of F is significant in the table above (lower than 0.05), it is concluded that there are heteroskedasticity and autocorrelation so the model needs to corrected for it. Thus, the coefficients (heteroskedastic, arr (ar1)) are selected in settings during running the panel model to calculate a covariance matrix.

This changes the method of calculating the standard error of the coefficients; subsequently, the Student's t-statistics and corresponding significance levels are corrected for heteroskedasticity.

Hypothesis Testing

Table 4. Hypothesis testing

$ARL_{it} = \beta_0 + \beta_1 ACEXP_{it} + \beta_2 ACExperience_{it} + \beta_3 ACEGender_{it} + \beta_4 ACSIZE_{it} + \beta_5 ACINDEP_{it} + \beta_6 Ownershipstructure_{it} + \beta_7 Ownershipconcentration1_{it} + \beta_8 Ownershipconcentration2_{it} + \beta_9 BIND_{it} + \beta_8 BDS_{it} + \beta_9 DUAL_{it} + \varepsilon_{it},$

Variable	Symbol	Coefficient	t-statistic	Significance level
Audit committee financial expertise	ACEXP	-0.006	0.00	0.997
Audit committee experience	ACExperience	-1.07	1.89	0.026
Audit committee gender	ACEGender	2.56	1.36	0.174
Audit committee size	ACSIZE	-0.29	-2.06	0.017
Audit committee independence	ACINDEP	0.33	-2.67	0.008
Ownership structure (blockholder)	Ownershipstructure	-1.63	-0.56	0.575
Ownership concentration (first measure)	Ownershipconcentration1	-0.08	-1.98	0.039
Ownership concentration (second measure)	Ownershipconcentration2	-6.25	-3.37	0.001
Board independence	BIND	-1.97	-2.05	0.031
Board size	BDS	1.00	0.51	0.608
CEO duality	DUAL	-0.34	-0.28	0.781
y-intercept	β_0	100.64	9.27	0.000
Adjusted Coefficient of Determination		0.6685	F-statistic	161.31
			Significance level	0.000

Results from Regression Testing of Hypotheses

Considering that the F-statistic is 161.131 in the table above, it can be said to be significant at 1% error level; the regression model is significant at 95% confidence level. According to significance level (0.997) in the table above, the variable of audit committee financial expertise has a negative, insignificant effect on audit report lag. Audit committee financial expertise, therefore, does not have a significant effect on audit report lag, rejecting H1. According to significance level (0.026) in the table above, the variable of audit committee experience has a positive, significant effect on audit report lag. Audit committee experience, therefore, has a significant effect on audit report lag, confirming H2. According to significance level (0.174) in the table above, the variable of audit committee gender has a positive but

insignificant effect on audit report lag. Audit committee gender, therefore, does not have a significant effect on audit report lag, rejecting H3. According to significance level (0.017) in the table above, the variable of audit committee size has a negative, significant effect on audit report lag. Audit committee size, therefore, has a significant effect on audit report lag, confirming H4. According to significance level (0.008) in the table above, the variable of audit committee independence has a negative, significant effect on audit report lag. Audit committee independence, therefore, has a significant effect on audit report lag, confirming H5.

According to significance level (0.575) in the table above, the variable of ownership structure (blockholder) has a negative, insignificant effect on audit report lag. Ownership structure (blockholder), therefore, does not have a significant effect on audit report lag, rejecting H6. According to significance level (0.039) in the table above, the variable of ownership concentration (first measure) has a negative, significant effect on audit report lag. Ownership concentration (first measure), therefore, has a significant effect on audit report lag, confirming H7. According to significance level (0.001) in the table above, the variable of ownership concentration (second measure) has a negative, significant effect on audit report lag. Ownership concentration (second measure), therefore, has a significant effect on audit report lag, confirming H8.

According to significance level (0.031) in the table above, the variable of board independence has a positive, significant effect on audit report lag. Board independence, therefore, has a significant effect on audit report lag, confirming H9. According to significance level (0.608), the variable of board size has a positive but insignificant effect on audit report lag. Board size, therefore, does not have a significant effect on audit report lag, rejecting H10. According to significance level (0.781), the variable of CEO duality has a negative, insignificant effect on audit report lag. CEO duality, therefore, does not have a significant effect on audit report lag, rejecting H11.

9. Analysis of Model and Hypothesis Testing Based on Structural Equations

Measurement Model Fit

Also, reliability is used in measurement model fit, which is examined through three methods: factor loading, Cronbach's alpha and composite reliability. A criterion value for the appropriateness of loading coefficients is 0.4 because the higher the value in relation to a given construct, the more the indicator contributes to explaining that construct (Henseler, 2009). Table 5 presents measurement model fit by factor loading.

Table 5. Measurement model fit (factor loading)

Construct	Subconstruct	Factor loading
Corporate governance measures	Audit committee financial expertise	0.403
	Audit committee experience	0.495
	Audit committee gender	-0.450
	Audit committee size	0.489
	Audit committee independence	0.467
	ownership structure (blockholder)	0.904
	Ownership concentration (first measure)	0.843
	Ownership concentration (second measure)	0.896
	Board independence	-0.489
	Board size	-0.478
	CEO duality	0.408

Structural Model Fit

Cronbach's alpha and composite reliability coefficient indicate appropriate model reliability if they are higher than 0.7. Since the reliability coefficient is between 0 and 1, which 0 represents the lack of reliability and 1 represents one-hundred percent reliability, the closer Cronbach's alpha and reliability to 1, the better. According to the table above, the respective values for the construct are higher than 0.7, which indicates appropriate reliability of the measurement models in the research.

In contrast to measurement models, structural models don't deal with observed variables, but only deal with latent variables along with the relationships between them. The first measure of examining structural model fit is R^2 related to endogenous (or dependent) variables in a model. R^2 is a measure that shows the impact of an exogenous variable on an endogenous variable; three values of 0.19, 0.33 and 0.67 are considered as criterion values for, respectively, weak, medium and strong values of R^2. In other words, R^2 examines overall predictive power of a model, i.e. whether the model tested is successful in predicting endogenous latent variables. According to Table 6, R^2 is calculated for the endogenous variable in the research so given the criterion values, the appropriateness of structural model fit is

confirmed. It is worthy to note that R^2 is not calculated for the exogenous variables.

The second measure of examining structural model fit is the Q^2 value of endogenous variables in a model. Q^2 determines predictive power of a model; three values of 0.02, 0.15 and 0.35 are considered as criterion values for, respectively, weak, medium and strong values of Q^2. According to Table 6, the value of Q^2 shows medium predictive power of the model, confirming suitable structural model fit.

Table 6. Structural model fit

Latent variable	Cronbach's alpha	Composite reliability coefficient	R^2	SSO	SSE	$Q^2 = 1 – SSE/SSO$
Corporate governance measures	0.895	0.754	0.197	1030.427	1184	0.130

10. Results from Hypothesis Testing Based on Structural Equations

Figure 1 shows structural equations by factor loading.

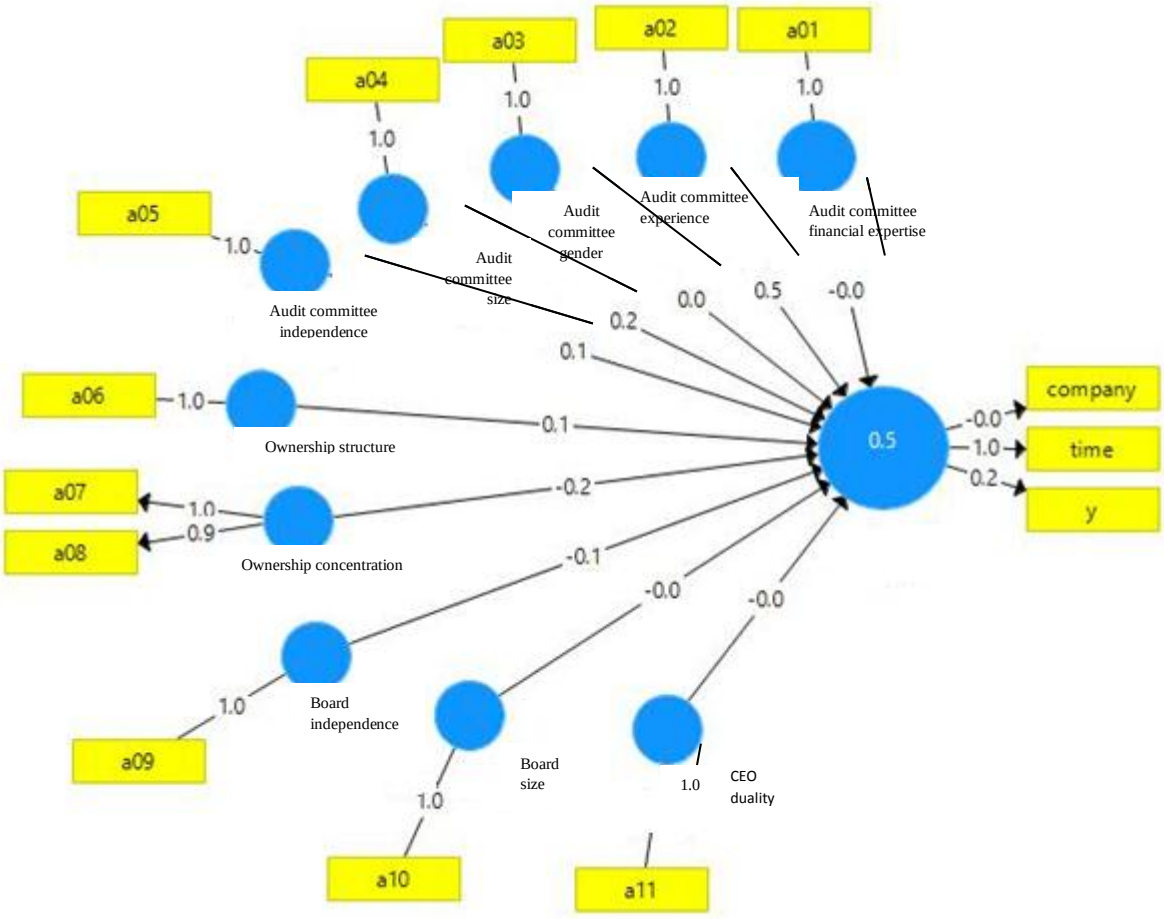

Figure 1. Structural equations based on factor loading

The final model for the effect of corporate governance measures on audit report lag is:

$ARL_{it} = \beta_0 + \beta_1 ACExperience_{it} + \beta_2 ACSIZE_{it} + \beta_3 ACINDEP_{it} + \beta_4 Ownershipconcentration1_{it} + \beta_5 Ownershipconcentration2_{it} + \beta_6 BIND_{it} + \varepsilon_{it}$,

where β_0 is y-intercept; ARL is audit report lag; ACExperience is audit committee experience; ACSIZE is audit committee size; ACINDEP is audit committee independence; Ownershipconcentration is ownership concentration; and BIND is board independence.

As seen in table 7, the path coefficient and t-statistic confirm the relationship of the variables of board independence, audit committee independence, audit committee size, audit committee experience, ownership concentration (first measure) and ownership concentration (second measure) with audit report lag.

Table 7. The results related to hypothesis testing

Path	Path coefficient	t-statistic	Result
Board independence -> Audit report lag	-0.057	1.73	Confirmed
Audit committee independence -> Audit report lag	0.084	1.549	Confirmed
Board size -> Audit report lag	-0.042	1.716	Rejected
Audit committee size -> Audit report lag	0.185	2.822	Confirmed
Audit committee experience -> Audit report lag	0.48	14.732	Confirmed
Audit committee financial expertise -> Audit report lag	-0.021	0.473	Rejected
Ownership concentration -> Audit report lag	-0.193	2.867	Confirmed
Audit committee gender -> Audit report lag	0.013	0.562	Rejected
CEO duality -> Audit report lag	-0.003	0.15	Rejected
Ownership structure -> Audit report lag	0.114	1.372	Rejected

11. Discussion and Conclusions

In this research, presenting a model for the effect of corporate governance measures on audit report lag is addressed. Three separate tests are used to complete and present a final model. The results from hypothesis testing show information associated with 148 companies listed on the Tehran Stock Exchange in the time period of 2011 to 2019. It suggests that the corporate governance measures of audit committee experience, audit committee size, audit committee independence, ownership concentration (first measure), ownership concentration (second measure) and board independence have a significant effect on audit report lag; however, the variables of audit committee financial expertise, audit committee gender, ownership structure, board size and CEO duality don't have any significant effect on audit report lag.

Then, variables of the primary hypothesis are separately determined, using the PLS software; the path coefficient and t-statistic confirm the relationship of the variables of board independence, audit committee independence, audit committee size, audit committee experience, ownership concentration (first measure) and ownership concentration (second measure) with audit report lag. Therefore, the variables significantly affecting audit report lag are determined in the final model. According to the results, the corporate governance measures have a significant effect on audit report lag, and are highly important for users' decisions.

By an analysis of the results from the research, it can be concluded that audit committee financial expertise doesn't have a significant effect on audit report lag, inconsistent with Raweh et al. (2019) and Ogoun et al. (2020) who state that audit committee financial expertise reduces audit report lag. Therefore, due to the infancy of the audit committee in the Iranian stock market, its effect is not seen on audit report lag. Audit committee size has a significant negative effect on audit report lag, consistent with Rusmanto and Helina (2020) and Nor et al. (2010). It is argued that audit committee responsibilities are performed better and firm performance is improved as audit committee size increases. Audit committee independence has a significant negative effect on audit report lag, consistent with Sultana et al. (2014) and Rusmanto and Helina (2020). It is argued that the audit committee with the high percentage of non-executive directors performs its roles and responsibilities better than that with the high percentage of inside executive directors, reducing time spent on issuing the audit report. Audit committee experience has a significant effect on audit report lag because experienced audit committee members have greater expertise, reputation and commitment, and are willingness to perform a better monitoring role. Audit committee gender doesn't have any significant effect on audit report lag. Ownership concentration (both first measure and second measure) has a significant effect on audit report lag, consistent with Basuony et al. (2016) and Jaggi and Tsui (1999). It is argued that ownership concentration reduces the

auditor's business risk, reduces time spent on audit, results in presenting the audit report as soon as possible. Also, when a company's shares are in the hands of few investors, the audit report will be released in a timely way because the company's directors are under more pressure. Ownership structure (blockholder) doesn't have any significant effect on audit report lag, inconsistent with Al-Ajmi (2008) who states when the number of blockholders increases, the period between the auditor' signature dates and the publication dates becomes shorter. Ownership structure, therefore, doesn't have an effective role on audit report presentation time. Board independence has a significant negative effect on audit report lag, consistent with Afify (2009) and Basuony et al. (2016). It is because board independence and the higher proportion of non-executive directors than executive directors increase the oversight of management behavior, and because the auditor's reduced inherent risk reduces tests of details and time spent on the audit work. Board size doesn't have any significant effect on audit report lag, consistent with Ilaboya and Christian (2014) and inconsistent with Rusmanto and Helina (2020) and Basuony et al. (2016). It is argued that the allowed number of board members in Iran is different from other countries. In contrast to the theoretical foundations presented in the research, CEO duality doesn't have any significant effect on audit report lag, inconsistent with Basuony et al. (2016).

The reason for rejecting some hypotheses is that the Iranian capital market is not mature and has recently begun to move towards corporate governance structures. In general, there is no strong evidence on the effectiveness of corporate governance measures. Also, differences in Iranian accounting environment, market inefficiency, the use of different definitions to assess some corporate governance variables, the lack of information transparency, and governing economic and political have adversely affected some variables in the model.

According to the results from the present research, in addition to considering the effect of corporate governance measures on audit report lag, it is suggested that additional control and care are applied to companies listed on the Tehran Stock Exchange with lower reporting speed.

It is suggested that the Securities and Exchange Organization should require companies to more completely disclose their governance status, by providing conditions. Also, it is suggested that Shareholders' General Assembly should try to use more non-executive and competent directors to reserve the rights of stakeholders and users of financial statements in order to increase monitoring quality and improve performance while considering the number of board members.

Considering that the audit committee is responsible for monitoring corporate governance, financial reporting process, internal control structure, internal auditors' and independent auditors' performance, all of which can affect audit report presentation time, it is recommended that companies pay specific attention to a strong audit committee and other corporate governance mechanisms.

It is suggested that future research should examine the present research by industry to obtain industry-specific characteristics, legal requirements and corporate governance structures.

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