

THE DETERMINANTS OF EARNING QUALITY OF LISTED FIRMS IN VIETNAM

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Citation:

Nguyen Ngoc Phong Lan. (2021). The determinants of earning quality of listed firms in Vietnam. *Economics, Finance and Management Review*, (4), 58–66. <https://doi.org/10.36690/2674-5208-2021-4-58>

Received: December 03, 2021
Approved: December 29, 2021
Published: December 30, 2021



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Abstract. *This paper examines the determinants of earnings quality of Vietnamese listed firms. The aim of the article is to study the quality of profits of Vietnamese companies listed on the stock exchange. Our results support to the literature and provide important implication for shareholder, investor... Shareholder can adjust firm characteristic to enhance earning quality. Investor can evaluate the quality of earning before investing by looking at firm characteristics. Future studies may use more other measures for the earning quality to see the similarities and differences in the research results. By using data of 528 non-financial listed firms from 2011 to 2020 and applying the Fixed-effect and System GMM method, we find that financial performance, firm age, and audit committee independence have positive effects on earnings quality. In contrast, firm leverage is negatively related to earnings quality. These results provide some important implications for firms to enhance earnings quality.*

Key words: *earning quality, financial leverage, external audit, firm size, firm age.*

JEL Classification: *C51, L25, M41*

Formulas: *3; fig.: 0; tabl.: 3; bibl.: 38*

Introduction. Generally, profit disclosed on financial statements is always the most concerned indicator. However, this indicator may be distorted and not reflect the true business results of the company. To know the reliability of returns, users need to evaluate the quality of this indicator. The quality of a company's profitability can be assessed through the analysis of many factors such as its business operations, accounting systems, quantity and quality of information disclosed, efficiency and reputation. Management reputation as well as opportunities and incentives to interfere with profitability.

Literature review. The literature agree that corporate governance play an important role in oversight management activities (Nguyen, 2021a, 2021b; Pham et al., 2021). When there is management intervention in the financial reporting process, profits will be of low quality. The previous studies find a lot of factors affect financial reporting process and earning quality, such as Al-Rassas and Kamardin (2015); Baxter and Cotter (2009); Kouaib and Jarboui (2014). However, most of studies focus on internal or external governance. In this study, we investigate both internal and external governance affect earning quality.

Because cash flow is a measure of the quality of earning, this study applies the accrual quality model proposed by Dechow and Dichev (2002) to measure the quality of the firm's earnings. This model links short-term accruals with cash flows from operating activities of the previous period, the current period, and the next period. Because the analysis period is not long, the study uses the accrual quality measure at the firm level - year as proposed by Dechow and Dichev (2002) to measure the earning quality.

In addition, find that performance, growth, size, maturity, financial leverage, board characteristics, audit committee structure, external audit ...have an impact on

the quality of firm's earning quality, such as Al-Rassas and Kamardin (2015); Katmon and Al Farooque (2017); Lin and Hwang (2010); Srinidhi et al. (2011). Therefore, this study uses the earning quality measure estimated from the Dechow and Dichev (2002) model as the dependent variable and the regression with the above factors as the independent variable.

The next parts of the research paper include the following sections: Section 2 presents the theoretical basis of earning quality and factors affecting earning quality; research methods are described in section 3; section 4 discusses research results; and section 5 presents the conclusion.

Theoretical basis. Earnings quality refers to the relevance of profitability in measuring a company's performance. The quality of return depends on business risk as well as the company's choice and application of accounting regimes (Francis et al., 2004). In which, business risk includes the impact of cyclical and other factors on the level of profitability, stability, origin and variation of profits. By skillful management strategies, the company can reduce business risk. The lower the business risk, the higher the quality of the company's profits. In addition, management's choice of accounting principles also significantly affects the quality of a company's profits. This choice can be optimistic or conservative. Conservatively determined returns are considered to be of higher quality because the likelihood of being inflated in the present and future is lower than those that are optimistically determined (Watts & Zimmerman, 1990). However, being overly cautious can reduce the reliability and relevance of returns over the long term. Besides, managers can also adjust profits by applying accounting principles when determining revenue and expenses. For example, expenses such as advertising, marketing, repairs, maintenance, research, and development may be adjusted to change the level of reported profit.

According to Schipper and Vincent (2003), profitability is of high quality when it accurately reflects the company's long-term performance; conversely, returns are of lower quality when manipulated. Profits are manipulated as a result of management's deliberate intervention in the financial reporting process through selections in the recognition of accounting entries for the purpose of obtaining benefits for the public, themselves or for the company (Schipper, 1989). According to Healy and Wahlen (1999), managers can interfere with profit targets to make some stakeholders misunderstand the basic economic performance of the company. Therefore, a company with high earnings quality is expected to have a higher price-to-earnings (P/E) ratio than a company with low earnings quality.

Also according to Healy and Wahlen (1999), there are three groups of motivations leading to the behavior of interfering with profit targets, including: Capital market motives: Firms or managers tend to incur higher costs when reporting reduced profits or losses; Motives in entering into contracts: Due to the existence of provisions imposed in the contract if the company fails to achieve the set accounting figures; and antitrust or government regulatory incentives, such as that of banks to avoid exceeding liquidity ratios that have been imposed by the regulator, or of companies are to be higher level of protection from imports.

Aims. The aim of the article is to study the quality of profits of Vietnamese companies listed on the stock exchange.

Methods. In this study, data of 528 non-financial firms listed in Ho Chi Minh City stock exchange and Ha Noi stock exchange are collected from their financial reports and annual report for 2011-2020 period. After excluding all missing data, our database comprises 2615 observations.

Variable measures, empirical models and estimation method.

Dependent variable: earning quality. Earning quality is a multidimensional concept, so the choice of a yield quality metric will depend on the research question, data availability, and estimation models. Some research questions require a measure of return quality that is related to investors' perceptions of returns, for example, the study of Francis and Schipper (1999) have tested the relevance of the value of returns, arguing that returns are useful to investors because they judge and make decisions based on prices and rates of return of stocks. In contrast, other research questions focus on direct measures of earnings quality constructed using only accounting data (Eliwa et al., 2016; Skinner & Soltes, 2011). In addition, there is another important aspect of earnings quality that has received much attention, which is the distinction between the total, modifiable and non-modifiable components of earnings quality.

In Vietnam, in recent years, the earning quality is an issue that has attracted the attention of academia. Many models have been used to study the earning quality of companies listed on the stock market, in particular, the adjusted Jones model has been used quite commonly. Fernández and Gonzalez (2005) argue that the uncertainty in accruals is best captured by Dechow and Dichev (2002) accrual quality measure. Therefore, this study will use Dechow and Dichev (2002) model to measure earning quality. The accrual quality measure is based on the notion that returns that are more closely related to cash flow will be of better quality. This measure represents the conversion of the accrual in working capital into cash flows from operating activities of the previous period, the current period and the next period. Specifically, the cumulative quality is estimated through the following model:

$$\Delta WC_t = \gamma_0 + \gamma_1 CFO_{t-1} + \gamma_2 CFO_t + \gamma_3 CFO_{t+1} + \eta_t \quad (1)$$

where ΔWC is the change in the company's working capital from year $t-1$ to year t ; CFO is cash flow of operating activities, γ_0 , γ_1 , γ_2 and γ_3 are estimated coefficient; and η_t is error term.

The residuals from the regression reflect accruals that have no relation to cash flow and the standard deviation of the residuals is a measure of company-specific accrual quality with the higher the standard deviation, the lower the accrual quality. Another measure of accrual quality at the firm-year level is the absolute value of the residuals for that year. The larger the absolute value of the residual, the lower the accrual quality. This measure is also used in the study of Zgarni et al. (2016), Katmon and Al Farooque (2017). Since the sample period is not long, the first measure from the regression model (1) is the standard deviation of the residuals will not be appropriate, instead, the study uses the absolute value of the residuals as a reference for measure of profit quality. At the same time, model (1) is estimated using cross-

sectional data to increase the number of observations without using the time series approach.

Specifically, the measure of profit quality, denoted as EARNQ, of company i is estimated for each year in each industry group through the following model:

$$EARNQ = \frac{\Delta WC_{it}}{TA} - \gamma_0 - \gamma_1 \frac{\Delta CFO_{it-1}}{TA} - \gamma_2 \frac{\Delta CFO_{it}}{TA} - \gamma_3 \frac{\Delta CFO_{it+1}}{TA} \quad (2)$$

where TA is average of total asset, all other variables are similar to equation 1.

Independent variable. Based on previous studies, this study investigate some factors can affect earning quality of Vietnamese listed firms.

First, firm performance, according Lang and Lundholm (1993), firm performance is a factor that significantly affects information disclosure and financial reporting behavior. Doyle et al. (2007) find that companies with poor performance have lower earning quality. However, DeAngelo et al. (1994) argue that poor performance can limit opportunities to intervene in profitability ratios. Meanwhile, Francis et al. (1996) found that there is no association between poor performance and the earning quality, and the recent study by Liu et al. (2017) also did not find the same evidence of this relationship. However, we expected that high performance positively relate to earning quality of Vietnamese listed firms. Based on some previous studies (Nguyen, 2020; Sun & Liu, 2014) we use ROA ratio to measure firm performance.

Second, firm leverage, previous studies have found a link between debt level and profitability of the company, typically the studies: Dechow et al. (2011), DeFond and Jiambalvo (1994), and Liu et al. (2017). Specifically, a more leveraged company means it is getting closer to its debt limit, so managers in more leveraged firms have an incentive to inflate efficiency. Financing activities can both satisfy financial covenants in existing debt contracts and may raise new debt on more favorable terms (Dechow et al., 2011). DeFond and Jiambalvo (1994) also suggest that in debt-intensive firms, managers may interfere in the financial reporting process to inflate profits in order to avoid breach of debt contracts. This action can reduce the quality of the company's profits. Liu et al. (2017) also found a negative relationship between financial leverage and earnings quality. However, Barton and Waymire (2004) provide evidence that the quality of corporate profits increases with debt levels while Parte-Esteban and García (2014) and Vasilescu and Millo (2016) find a relationship This relationship is not statistically significant. In Vietnam, the credit institution system is still playing an important role in the financial market. Debt is a component that accounts for a high proportion of the capital structure of most companies, so it has a significant influence on the company's policies. Thus, this factor also affects the earning quality.

Third, firm's scope of operation, due to the need to comply with the regulations of the authorities as well as the supervision of the market, large-scale companies often have a higher earning quality. The positive relationship between firm size and earning quality was also found in previous studies. Specifically, Ball and Foster (1982) show that firm size is positively related to the quality of profits because large companies often incur fixed costs to maintain internal control procedures in the long run financial

reporting program. In contrast, small firms often have weak internal control systems and are more likely to have to revise previously reported profit targets (Doyle et al., 2007). However, Watts and Zimmerman (1990) show that large firms may have a lower quality of profits than small firms. Liu et al (2017) again found a positive relationship between company size and profit quality. We, therefore, investigate the effect of firm size (FSIZE) on earning management. In addition, firm age is also important factor of firm scope of operation that may affect firm management (Nguyen, 2022) is also likely to be related to earning quality. Following Liu et al (2017), we use the age of the company (FAGE) to represent the maturity level, which is the number of years since the company was officially listed on the stock market.

Fourth, corporate governance structure: We investigate some corporate governance structure that may affect firm's earning management. The literature finds that corporate governance structure plays an important role in reduce agency problem and enhance management quality (Dang & Nguyen, 2021b; Nguyen & Dang, 2020; Nguyen, 2020). Firstly, we investigate the effect of foreign ownership (FOR) on earning quality. Nguyen (2020) find that foreign ownership can reduce agency problem and thus it may enhance earning quality. Secondly, we use big 4 audit companies (BIG), which is 1 if firm use service of big 4 audit companies including KPMG, PwC, Deloitte, Ernst & Young, to investigate the effect of external audit quality on earning quality (Nguyen & Dang, 2020). Finally, we apply audit committee size (ASIZE), and audit committee independent (AINDE) which is measured as number of audit committee members and the proportion of independent member of audit committee on total audit committee members, respectively, to investigate the effect of audit committee structure on earning quality. Many studies, such as Nguyen (2021b), Nguyen and Dang (2020) find that audit committee structure can increase internal control quality and thus affect firm's earning quality.

Empirical models and estimation method. To investigate the determinants of firm's earning quality, the absolute value of the residual Dechow and Dichev (2002) model is used as the dependent variable and regression according to the above factors through the following model:

$$\text{EARNQ}_{it} = \beta_0 + \beta_1\text{ROA}_{it} + \beta_2\text{LEV}_{it} + \beta_3\text{FSIZE}_{it} + \beta_4\text{FAGE}_{it} + \beta_5\text{BIG}_{it} + \beta_6\text{ASIZE}_{it} + \beta_6\text{AINDE}_{it} + \mu_{it} \quad (3)$$

To estimate this model, we apply fixed effect and system GMM method which is widen used in the literature (Dang & Nguyen, 2021a; Ullah et al., 2018; Wintoki et al., 2012).

Results. *Descriptive statistic and correlation matrix.* Table 1 presents descriptive statistics including mean, standard deviation as well as minimum and maximum values of the variables included in the model. Table 1 shows that on average, the firms in the sample have a return on total assets of nearly 5.6%, earning quality value is about 0.071 per year, leverage is about 46.5% and differs from firm to firm, the maximum and minimum value is 0.8% and 87.5%, respectively. In addition, most of other variables differ from firm to firm.

Table 2 presents the correlation coefficients of the variables included in the model. Table 2 shows that the correlation coefficient between earning quality and performance, financial leverage, firm size, firm age, external audit quality, audit committee size and audit committee independence are statistically significant at 10% or more. Furthermore,

Table 1. Descriptive statistic

Variable	Obs	Mean	Std. Dev.	Min	Max
EARNQ	2615	0.071	1.942	0.000	0.675
ROA	2615	0.056	4.952	-0.087	0.124
LEV	2615	0.465	0.551	0.008	0.875
FSIZE	2615	11.631	2.273	7.231	18.475
FAGE	2615	18.240	1.428	0.000	20.000
BIG	2615	0.415	0.179	0.000	1.000
ASIZE	2615	8.251	0.062	5.000	15.000
AINDE	2615	0.457	0.069	0.200	0.900

Table 2 also shows that the pairwise correlation between all explanatory variables in the model is relatively low, in which, the highest is between operating efficiency and financial leverage 0.362. Therefore, the author can come to the conclusion that multicollinearity does not occur in the model. The coefficients of variables may not provide true relationship between the variables because earning quality may be affected by many variables at the same time. We, therefore, investigate the effects of seven independent variables on earning quality by applying empirical model (E.q 3).

Table 2. Correlation matrix

	EARNQ	ROA	LEV	FSIZE	FAGE	BIG	ASIZE	AINDE
EARNQ	1.000							
ROA	-0.362	1.000						
	0.000							
LEV	-0.161	-0.172	1.000					
	0.000	0.019						
FSIZE	-0.192	-0.124	-0.111	1.000				
	0.003	0.000	0.023					
FAGE	0.047	0.032	0.152	0.112	1.000			
	0.021	0.211	0.057	0.588				
BIG	0.122	0.072	-0.025	-0.319	0.146	1.000		
	0.000	0.611	0.386	0.001	0.000			
ASIZE	0.005	0.053	-0.183	0.015	0.134	0.152	1.000	
	0.031	0.164	0.001	0.074	0.000	0.000		
AINDE	0.142	-0.318	-0.002	-0.107	0.151	0.014	-0.181	1.000
	0.001	0.023	0.001	0.001	0.000	0.001	0.002	0.000

Discussion. In Table 3, column (1) presents the results of model (3) regression using the fixed-effect estimation method. Columns (2) present the results when using the system GMM estimation method. In this study, we use Hausman test to decide

fixed-effect or random-effect which is used for our model. The Hausman test result present a p-value = 0.000 indicate that the fixed effects model is more appropriate than the random effects model.

Table 3. Fixed effect and System GMM estimation results

Independent variable: EARNQ	Fixed-effect		System GMM	
	(1)		(2)	
	Co-eff	t-stats	Co-eff	t-stats
ROA	0.13***	2.26	0.12*	1.88
LEV	-0.01**	-1.95	-0.03**	-2.17
FSIZE	0.23	1.75	0.04	1.24
FAGE	0.11**	2.08	0.22**	1.92
BIG	0.32	1.06	0.28	0.84
ASIZE	-0.02	-1.47	0.51	1.61
AINDE	0.10***	2.22	0.21***	2.25
Const	-1.21	-1.05	3.21***	3.17
Year dummy	Yes		No	
Industry dummy	Yes		No	
Hansen J (p-value)			0.24	
AR(2) (p-value)			0.15	
No of instruments			112	
Obs	2615		2615	

In the column 1, the results show that coefficient on ROA is positive and significant with EARNQ indicating that firm performance positively relate to earning quality. This result is consistent with our expectation as well as the results of Doyle et al. (2007). The coefficient on LEV is negative and statistically significant with EARNQ indicating that firm leverage is negative associated with earning quality. This result supports our expectation and is consistent with DeFond and Jiambalvo (1994), and Liu et al. (2017). Relating to firm's scope of operation, the column 1 in Table 3 report the positive relationship between firm's scope of operation and earning quality. The coefficients on both firm size and firm age are positive associated with EARNQ but only coefficient of FAGE is significant. This finding is consistent with Liu et al. (2017) that found a positive relationship between firm age and earnings quality. However, this is evidence that firm's scope of operation increase earning quality. Furthermore, relating audit committee structure, we find that the coefficient on AINDE is positive and significant with EARNQ but the coefficient of ASIZE is insignificant indicating that the independence of audit committee increase earning quality.

The column 2 in Table 3 presents the System GMM estimation results for equation 3. The results in this column show that most of coefficients of independent variables are consistent with the fixed-effect results. In addition, the diagnostics tests in Table 3 show that—as indicated by the Arellano–Bond test, AR (2), and the Hansen J tests—all the regressions are valid. Finally, the number of instruments used in the model is less than that in the panel, which makes Hansen's J statistic more reliable.

Overall, the “system GMM” estimates in Table 3 support the notion that even after controlling for unobserved heterogeneity, simultaneity, and dynamic endogeneity, firm performance, firm leverage, firm age and audit committee independence are found to be related to earning quality in a way that is consistent with our expectations.

Conclusion. Earnings quality is an indicator of the quality of financial reporting and is also an indicator of a company's future performance as well as a useful tool for determining firm value. As a result, the earning quality has a significant impact on the decisions of stakeholders, such as shareholders, bondholders, banks, policy makers, suppliers, and other stakeholders. A company has a high earning quality if the information on its financial statements accurately describes the performance of its business.

The study has a contribution in proposing to use the Dechow and Dichev (2002) model to measure the earning quality in addition to the models mentioned in previous studies in Vietnam. Specifically, the absolute value of residuals estimated from the Dechow and Dichev (2002) model is used as a measure of the earning quality. By using data collected from 528 non-financial firm listed on the Ho Chi Minh and Ha Noi stock exchange from 2011 to 2020, the study shows the positive impact of firm performance, firm age and audit committee independence on earning quality. On the contrary, the impact of firm leverage is negative on earning quality. Our results support to the literature and provide important implication for shareholder, investor... Shareholder can adjust firm characteristic to enhance earning quality. Investor can evaluate the quality of earning before investing by looking at firm characteristics. Future studies may use more other measures for the earning quality to see the similarities and differences in the research results.

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