Value Relevance of Earnings and Book Value: Impact of Earnings Management and Family-Owned Firms

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Abstract: The purpose of this study is to investigate whether family-owned firms and earnings management as a result of financial distress affect the value relevance of earnings and book value. The study is based on companies listed on the Indonesia Stock Exchange (IDX). An unbalanced panel dataset of 592 firms trading in the IDX from 2012 to 2017 was used to test the price model. Results reveal that owing to high financial distress, earnings management through an income-increasing strategy was opportunistically conducted. Moreover, earnings management (as opposed to financial transparency, which is a principle of sustainability) decreases the value relevance of earnings. Due to high financial distress, there is a trade-off between the value of earnings and relevance of book value in the presence of earnings management. Further, results demonstrate that the value relevance of earnings in family-owned firms is higher than in nonfamily-owned firms in Indonesia. It indicates that earnings management due to high financial distress contributes to the alignment effect on family firms.

Keywords: book value, earnings, family-owned firms, high financial distress, value relevance.

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INTRODUCTION

Financial reporting inspires all IASB conceptual frameworks. It provides valuable information for investors and creditors in making investment, credit, and equal resource allocation decisions (IASB, 2018). Investors require information from financial statements because they cannot directly ask for it from the company. Since they provide risk capital to companies, financial statements meeting their needs also content other users. Consequently, recent empirical studies have extensively focused on the correlation between accounting standards and stock prices, or returns, aiming to recognize the most acceptable accounting policy.



Value relevance is conventionally perceived as meaningful for a significant correlation with market data. A correspondence between accounting data and market prices or returns directly influences the relevance value. The concept of value relevance is not new in research. If the accounting value has anticipated association with the market value of equity, then it is defined as value relevant, and most presentations of this are based on accounting variables (Byun & Oh, 2018).

Earnings management was the cause of significant accounting scandals such as Enron, Merck, WorldCom, and others (Muttakin et al., 2015). Previous research has demonstrated that markets are becoming less dependent on earnings for stock valuation due to a perceived lack of earnings reliability (Rahman et al., 2020); therefore, earnings management is bringing up the value relevance of earnings. This is consistent with Chahine et al. (2019) finding that highly controlled earnings are of low quality.

Studies on earnings management to value relevance have been conducted in developed markets and emerging markets, for instance, studies established in European Union (Callao et al., 2016); Egypt (Mostafa, 2017); Indonesia (Ratnaningrum et al., 2019); China (Shan, 2015); Pakistan (Khidmat et al., 2018). These studies suggest that opportunistic earnings management lessens the value relevance of earnings. Another study shows that earnings and book value may substitute for one another in case of a decrease. Also, the value relevance of book value increases when the value relevance of earnings decreases (Fan & Chen, 2013).

According to academic research, management aims to influence earnings opportunistically under situations or incentives. High operational performance, for example Mostafa (2017); incentive compensation (Harakeh et al., 2019); financial position (Kliestik et al., 2021); financial troubles (Campa, 2019); political interests (Cohen et al., 2019); tax avoidance (Amidu et al., 2019); financial distress (Abbas & Ayub, 2019); earnings declines (Cao et al., 2018)

Earnings management has implications for the company's activities, including its long-term viability and development. Earnings management has been linked to a loss in value relevance (Callao et al., 2016; Shan, 2015). One of the cornerstones of sustainability is financial transparency, which includes transaction transparency (Jin et al., 2018). Companies that appear transparent in their sustainability reporting are less likely to engage in earnings management (Al-Shaer, 2020). Considering sustainability, earnings management may be reduced by a dual audit system (Jin et al., 2018); by audit Statement of Opinion in the Final Audit Report (Suryanto & Grima, 2018).

The period between 2007 and 2008 was remarkably challenging for the world economy. After the recent fuel and food crisis, the world economy faced a financial crisis that continues to be felt. The global crisis has affected the majority of the world's economy through commerce and finance. Indonesia's national economy has been and continues to be dragged into global currents, especially with the continued development of financial markets not based on the real sector. Many public companies listed on the Indonesia Stock Exchange were delisted due to large losses and cash shortages.

According to Zang (2012), companies with poor financial health have a higher level of accrual earnings management. Haga et al. (2018) also indicate that riskier companies still use accrual earnings management. Financial distress would also increase the cost of issuing debts for businesses and make debt financing more onerous. Then when a publicly-traded company is in financial problems, its earnings may fall short of expectations, resulting in a drop in its stock price and firm value (Li et al., 2020).

Experienced managers are less likely to put a company into financial distress, and low-risk companies outperform high-risk enterprises (Männasoo et al., 2018). Firms having a more volatile financial structure are more prone to lose market share, particularly during downturns in their industry (Wu et al., 2020). Companies

with high financial distress are perceived to have higher incentives to manage earnings than low financial distress companies. They adopt strategies that increase their income to cover up deteriorating financial health. This study considered that companies with low financial distress have no or fewer incentives for opportunistic earnings management. This study classifies the sample group of companies with high and low financial distress into cash flow ratio groups with high and low total debt. It considers groups with low ratios as companies with high financial distress.

As a result, it would be interesting to analyze if discretionary accruals are consistent with a specific incentive, such as financial distress, and then examine the influence of earnings management because of this incentive on the value relevance of earnings or accounting information. If such incentives are the driving force behind earnings management methods, and if they have a negative impact on the value relevance of earnings or accounting data, Indonesian firms are allowing managers to make short-term profits at the expense of existing shareholders.

The state of financial distress is inextricably linked to CSR compliance (Wu et al., 2020). When a company is in financial trouble, it prioritizes relieving financial stress and protecting the interests of shareholders over benefiting society (Haga et al., 2018). Corporate social responsibility (CSR) and financial difficulty are also linked (Piosik & Genge, 2019). Previous studies suggests that CSR reduces company distress levels (Shahab et al., 2019); Al-Hadi et al., 2019), whereas (Wu et al., 2020) finds that financial distress acts as a restricting factor in the process of CSR to improve corporate performance.

Some realities in the Indonesian capital market tend to lead to problems in the value relevance of accounting information in Indonesia. Indonesia is one of seven (7) Asian countries with agency conflicts between controlling and non-controlling shareholders (Fan & Wong, 2002). Indonesia is also a country of code law that generally regards public disclosure as less critical than common law countries (Karampinis & Hevas, 2009). This circumstance, in a way, promotes low-quality financial reporting, thus resulting in low-value relevance of accounting information as well.

Different ownership structures encourage companies to behave differently. Explicitly speaking, family ownership will affect the demand and supply of financial reporting quality due to the effects of entrenchment and alignment (Wang, 2006). As the traditional view believes, family businesses are less efficient since concentrated ownership opens up opportunities for controlling shareholders to exploit the profit appropriation, thus belittling the minority shareholders (Shleifer & Vishny, 1986). In opposition to the entrenchment effect, the alignment effect concluded that concentrated ownership creates greater motivation for controlling shareholders to monitor managers (Demsetz & Lehn, 1985; Shleifer & Vishny, 1986). In addition, lower monitoring costs in family-owned firms make it more efficient (Fama & Jensen, 1983).

There are few studies conducted within the context of family ownership, explicitly investigating the relevance of values. Bae & Jeong (2007) found the correlation between loss of value relevance and the lower quality of accounting information provided by chaebols. However, although families often control these chaebols, it is not easy to generalize the study results due to differences in institutional and cultural settings. Furthermore, Cascino et al. (2010) investigated the value relevance of earnings between family and non-family-owned firms in the Italian context. The results show that profits made by the former had more value relevance. In other settings, Chandrapala (2013) proved that the value relevance of firms with ownership concentration is higher than firms without ownership concentration. Whereas, Adaa & Hanefah (2018) found that majority ownership by Muslims correlates negatively significant to the value relevance of accounting information.

The current study seeks to make the following contributions to the existing literature. First, it expands existing empirical research on earnings management and value relevance. Since earnings management is the opposite of financial reporting transparency, it will also be possible to identify indications of the effect of reporting transparency on value relevance.

Second, to the best of our knowledge, this study is the first to consider financial distress as the condition that encourages opportunistic earnings management, including in the valuation model, given that we address earnings management under specific incentives that is financial distress. This evidence gives a particular idea about the existence of earnings management due to financial distress and its effect on the value relevance in the listed Indonesian firms. In addition, family firms still dominate companies in Indonesia, making it an attractive setting to find out the alignment effect or the entrenchment effect with earnings management due to financial distress. Therefore, this study innovates the gap in the accounting literature by associating earnings management due to financial distress and family firms to value relevance.

METHODS

Discretionary accruals were operated as an earnings management indicator. For their estimation, a cross-sectional Jones model was employed, with the modification by Kothari et al. (2005).

Accruals_t =
$$a + b (1/Assets_{t-1}) + c \Delta Sales_t + d PPE_t + e ROA_t + \mu_t$$

In regression (1), the total assets at the beginning of the year (Assets) de-flates the total accruals (Accruals), change in sales (Δ Sales), the gross property, plant, and equipment (PPE). Return on assets (ROA) is added as a control variable since the Jones model is unspecified for well-performing or poor-performing companies (Kothari et al., 2005). Accruals (the total accruals) defined as earnings before extraordinary items minus cash flows from operating activities. An estimate of total accruals is obtained by applying the parameter estimates to the actual values for each firm-year yield. The difference between actual and estimated total accruals generates the proxy for the discretionary accruals, which reflects its extent.

Financial distress is a circumstance when a firm begins to experience difficulties in terms of finance (Baldwin & Mason, 1983). This study referred to the following ratio proposed by Karbhari & Sori (2007) in calculating financial distress:

Financial distress = (Cash Flow) / (Assets)

To test the first hypothesis, earnings management's presence is examined based on the companies' financial distress level. That examination involves testing whether high financial distress companies tend to perform income-increasing more than those with low financial distress. Through comparison, discretionary accruals of high financial distress companies on average might be positive and higher than low financial distress companies. The companies engage in earnings management by income-increasing due to high financial distress.

This study adopted a price model developed by Ohlson (1995) and Feltham & Ohlson (1995). It is extended to capture earnings management's effect due to high financial distress (AEMFD) on the value relevance of earnings and book value. The model 1 used is as follows:

$$P_{it} = a_o + a_1 EPS_{it} + a_2 BV_{it} + a_3 AEMFD_{it} + a_4 AEMFD_{it} \times EPS_{it} + a_5 AEMFD_{it} \times BV_{it} + SIZE_{it} + \epsilon_{it}$$
 (1)

To find out whether there is a difference in the relationship between earnings management due to high financial distress on the value relevance of earnings and book value in family-owned firms compared to non-family-owned firms, the following model 2 is used:

$$P_{it} = a_{o} + a_{1}EPS_{it} + a_{2}BV_{it} + a_{3}AEMFD_{it} + a_{4}AEMFD_{it} \times EPS_{it} + a_{5}AEMFD_{it} \times BV_{it} + a_{6}FF_{it} + a_{7}AEMFD_{it} \times FF_{it} + a_{8}FF_{it} \times EPS_{it} + a_{9}FF_{it} \times BV_{it} + a_{10}FF_{it} \times AEMFD_{it} \times EPS_{it} + a_{11}FF_{it} \times AEMFD_{it} \times BV_{it} + a_{12}SIZE_{it} + \epsilon_{it}$$
(2)

Where:

P_{it} : the log price of the stock of firm i at the publication date of the financial statement for year t

EPS_{it} : earnings per share of firm i during the year t
BV_{it} : book value per share of firm i at the end of year t

AEMFD_{it}: dummy variable earnings management to firm i during year t, 1: discretionary accruals positive for

firms due to high financial distress; o: otherwise

FF_{...}: variable (dummy) indicator (1,0) denotes the family-owned firms or not.

SIZE, : Ln Total Assets of firm i for year t

ε,, : other value-relevant information of firm i for year t

In model 1, the value relevance of earnings and book values are represented by coefficients a_1 and a_2 , respectively. The a_4 slope coefficient represents the value relevance of earnings in the engagement of earnings management due to high financial distress. The a_5 slope coefficient represents the value relevance of book value in earnings management engagement due to high financial distress. From hypothesis 2, a_4 is expected to be negative, indicating a decrease in the value relevance of earnings in companies practicing earnings management. Conversely, from hypothesis 3, a_5 is expected to be positive, demonstrating an increase in value relevance of book value of equity as the market shifts its trust from earnings to the book value.

Furthermore, model 1 is expanded by including the family firm variable in equation (2). It is expected that the variable coefficient of FF x AEMFD x EPS $(a_{10}) \neq 0$ shows there is a difference in the relationship between earnings management due to high financial distress on the value relevance of earnings to the family-owned firms compared to the non-family-owned firms. Whereas hypothesis 5 estimates that the variable coefficient of FFx AMFD x BV $(a_{11}) \neq 0$ indicates a difference in the relationship between earnings management due to high financial distress on the value relevance of book value family-owned firms compared to non-family-owned firms. Furthermore, (a_{10}) will be positive (negative) if the alignment effect (entrenchment effect) is supported, as well as (a_{11}) .

La Porta et al. (1999) defined family ownership as the majority proportion of ownership by individuals in non-state-owned, or non-financial-services closed companies. Family-owned firms as "Businesses that are regulated or managed to form and pursue a business vision held by a dominant coalition controlled by the same family member or a small number of families in a way that could potentially be sustainable across generations of families or families" (Chua et al., 1999). Firms are categorized into family-owned firms if the family shareholding is at least 20% (Claessens et al., 2002; Singla et al., 2014), or at least one family member of the firm sitting on the corporate board (Banalieva et al., 2015). Family ownership is measured by a dummy variable, i.e., a value of 1 for firms with family ownership and 0 for otherwise.

RESULTS AND DISCUSSION

Table 1 shows the sampling procedure. The sample consisted of 592 company-year observations from 125 manufacturing companies listed on the Indonesia Stock Exchange (IDX) for six years (2012-2017).

Table 1 Initial Samples of Manufacturing Firms Listed in IDX Over the period from 2007 to 2017

No		2012	2013	2014	2015	2016	2017	Total
1	Manufacturing firms	151	146	148	149	152	172	918
2	FS in Non-Rupiah	(25)	(25)	(27)	(27)	(30)	(30)	(164)
3	Data is not complete	(40)	(11)	(12)	(12)	(16)	(38)	(129)
4	Outlier	(5)	(6)	(5)	(10)	(4)	(3)	(33)
Tota	al	81	104	104	100	102	101	592

Source: IDX

Table 2 presents sample distribution based on the manufacturing industry sub-sector. This data is based on the classification in Factbook. Most of the samples include 87 (15%) Food and Beverage companies and 68 (11%) Metal and allied products companies. Manufacturing companies are distributed more in the two industrial sub-sectors. The industry subsector sample found least in the machinery and heavy equipment group are four companies a year or 1%.

Table 2 Sample Distribution

Subsector	The number of Firms	Firm Year Observations	%
Cement	6	28	5%
Ceramics, glass, porcelain	7	36	6%
Metal and allied product	12	68	11%
Chemicals	11	34	6%
Plastics	9	45	8%
Animal feed	5	28	5%
Wood industries	2	8	0.7%
Pulp and paper	6	30	5%
Machinery and heavy equipment	2	4	1%
Automotive and component	10	52	9%
Textile and Garment	9	40	7%
Footwear	2	11	2%
Cable	5	25	4%
Food and Beverages	17	87	15%
Tobacco manufacturers	4	12	2%
Pharmaceuticals	10	44	7%
Cosmetics and households	5	25	4%
Houseware	3	15	3%
Total	125	592	100%

Source: IDX

Table 3 shows the descriptive statistical tests of the main research variables, consisting of log stock prices, earnings, the book value of equity, and earnings management due to high financial distress.

Table 3 Descriptive Statistics

Variable	Min	Max	Mean	Standard Deviation
LOG PRICE	1.699	4.732	2.858	0.674
EPS	-17350	4300	95	807
BV	-12182	11728	1099	1844
AEMFD	0.00	1.00	0.0676	0.251
SIZE	10.80	19.50	14.37	1.55
FF	0.00	1.00	0.740	0.439

The mean of discretionary accruals due to high financial distress incentives (AEMFD) is 0.0676. This means that 6.76% of company years reported positive discretionary accruals due to high financial distress. The mean of EPS is 95, showing that, on average, companies experienced positive earnings per share. The mean book value of equity is 1099, which shows that companies experienced a positive book value of equity. The mean of family firms (FF) shows that 74% of the sample are family-owned firms.

Table 4 shows the test results of the average discretionary accruals between companies experiencing high and low financial distress. The sample group is proven to practice earnings management due to high financial distress when the average discretionary accruals of high financial distress companies are significantly higher and positive than those with low financial distress. The proxy used to measure financial distress is cash flow/total assets.

Table 4 The Result of the Compare Means Test of Discretionary Accruals

	2012		201	13	2014		2015		2016		2017	
	Mean	%										
High	0.008	70	0.006	65	0.007	73	0.0113	70	0.005	60	0.003	64
Low	-0.018	30	-0.011	35	-0.020	27	-0.022	30	-0.009	40	-0.005	36
Sig	0.176		0.471		0.181		0.01		0.422		0.429	

Based on Table 4, the sample group companies experience high financial distress conditions, showing that the average mean of positive discretionary accruals is higher, with significant differences between high and low financial distress companies occurring in 2015. Therefore, in 2015, the company conducted opportunistic earnings management through income-increasing due to financial distress. This study finds evidence consistent with the premise that managers of firms experiencing financial difficulties manage earnings upwards.

Table 5 presents the results of multiple regressions examining the value relevance of earnings and book value of equity in the presence of earnings management due to high financial distress in family-owned firms.

Table 5 Hypothesis Test Result

Variable	Model 1	Model 2
С	4.6551 (4.6162)***	4.0350 (3.8928)**
EPS	-6.39 x 10 ⁻⁵ (-1.6550) *	-8.64 x 10 ⁻⁵ (-2.3570)***
BV	0.0001 (9.1462)***	0.0001 (16.4939)***
AEMFD	-0.0845 (-2.9441)***	-0.0642 (-0.9296)
AEMFD x EPS	0.0014 (8.3837)***	-0.00049 (-2.0294)**
AEMFD x BV	-3.78 x 10 ⁻⁵ (-1.7779) *	-2.05 x 10 ⁻⁵ (-0.9464)
FF		0.7117 (1.9279)*
FF x AEMFD		-0.0521 (-0.8835)
FF x EPS		0.00029 (1.7914)*
FF X BV		-2.99 x 10 ⁻⁵ (-0.7048)
FFX AEMFD X EPS		0.0023 (12.5853)***
FF X AEMFD X BV		1.85 x 10 ⁻⁵ (0.5084)
SIZE	-0.1323 (-1.8764)	-0.1261 (-1.8259)*
F_stat	36.5284 (0.0000)	36.6610 (0.0000)
Adj R²	0.8840	0.8892
N	592	592

Table 5 shows that the EPS coefficient of the price model -6.39 x 10⁻⁵ is significant at α : 10% with a t value of -1.6550. That negative coefficient indicated that earnings have no value relevance. The book value coefficient is 0.0001, significant at α = 1% with a t value of 9.1462. Therefore, the book value has value relevance.

This study examines whether the value relevance of earnings decreases in the presence of earnings management due to high financial distress (AEMFD). The impact of AEMFD on stock prices is significant with a coefficient of -0.0845 at α = 1% with a t value of -2.9441. The interaction relationship between AEMFD and EPS at stock prices is significant with a coefficient of 0.0014 at α = 1% with a t value of 8.3837. These results indicate a positive influence of earnings management due to high financial distress on earnings' value relevance, so earnings' value relevance increases with earnings management due to high financial distress.

The findings demonstrate that earnings management due to financial distress positively impacts earning value relevance. These findings suggest that corporations in financial distress utilize more earnings management techniques to increase earnings and mislead investors. This implies that investors cannot detect manipulative activities and do not penalize managers that use opportunistic conduct to increase earnings. In other words, organizations that engage in opportunistic earnings management practice have a higher value relevance than companies that do not. In terms of financial reporting integrity, the managers of these organizations have an unblemished reputation.

These results are different from those of previous studies, which prove that opportunistic earnings management decreases the relevance of earnings (Marquardt & Wiedman, 2004; Hassan et al., 2016; Mostafa 2017; Ratnaningrum et al., 2019) while the value relevance of book value goes up (Callao et al., 2016).

The following hypothesis states that the value relevance of book value increases in the presence of earnings management due to high financial distress (AEMFD). The interaction relationship between AEMFD and BV at stock prices is significant with a coefficient of -3.78 x 10⁻⁵ at α = 10% and a value of -1.7779. This means there is a negative effect of earnings management on the relevance of book value. So, there is a decrease in the relevance of book value in the presence of earnings management due to high financial distress. The increase of earnings and a decrease of book value in the presence of earnings management indicated that there is a trade-off between the value of earnings and the value relevance of book value in the presence of earnings management due to high financial distress.

The impact of earnings management due to high financial distress on stock prices is the sum of the direct and indirect effects of AEMFD on stock prices. The direct effect of AEMFD on stock prices is -0.0845, while the indirect effect of AEMFD x EPS is 0.0014 and the indirect effect of AEMFD x BV is -3.78×10^{-5} , so the total effect of AEMFD is -0.0831. Because the effect of earnings management is negative, it can be concluded that earnings management due to high financial distress is opportunistic.

Regression test results of the influence of family-owned firms on the value relevance of earnings (FF x EPS) show significant results with a coefficient of 0.00029 at α = 5% and t value: 1.7914, while the impact of family-owned firms on the value relevance book value (FF x BV) show insignificant results with a coefficient -2.99 x 10⁻⁵ and t value of -0.7048. These results indicate that the value relevance of earnings is higher in family-owned firms than non-family-owned firms.

The next test examines the influence of family-owned firms on the relationship between AEMFD and the relevance of earnings (FF x AEMFD x EPS) and the influence of family-owned firms on the relationship between AEMFD and value relevance of book value (FF x AEMFD x BV). The results show that the variable FFx AEMFD x EPS is significant with a coefficient of 0.0023 at α = 1% and t value of 12.5853. It indicates a difference in the relationship between earnings management due to high financial distress and the value relevance of earnings in family-owned firms compared to non-family-owned firms. Whereas the test results of the influence of the family-owned firms on the relationship between earnings management due to high financial distress and the value relevance of book value indicate that the variable FF x AEMFD x BV has no effect on stock prices with a

coefficient of 1.85 x 10^{-5} and t value of 0.5084. These results indicate no difference in the relationship between earnings management due to high financial distress and the value relevance of book value in family-owned firms compared to non-family-owned firms.

To find out of alignment or entrenchment effect in the presence management due to high financial distress of that dominates family-owned firms, it can be seen from the increase or decrease in the relationship between earnings management due to high financial distress on the value relevance of earnings and the value relevance of book value with the presence of family-owned firms. The relationship between earnings management due to high financial distress and the value relevance of earnings in family-owned firms shows an increase of 0.23% higher in family-owned firms than non-family-owned firms. In contrast, the relationship between earnings management due to high financial distress and the value relevance of book value in family-owned firms is no different from non-family-owned firms. Because the total effect of the change in the relationship between earnings management due to high financial distress on the value relevance of earnings and book value in family-owned firms is positive, it can be concluded that earnings management due to high financial distress contributes to the alignment effect on family firms. It indicates that investors place a higher level of trust in earnings concerning earnings management due to high financial distress of family-owned firms compared to non-family-owned firms.

CONCLUSION

The study finds that earnings management due to financial distress influences positively the value relevance of earnings. Thus, there is an indication that financial transparency, which is one of the principles of sustainability, reduces value relevance. It indicates that investors cannot observe manipulative practices and do not penalize managers who show opportunistic behavior to increase earnings. Furthermore, there is a trade-off between the value of earnings and the value relevance of book value in the presence of earnings management due to high financial distress. Further results show that the relevance of earnings is higher in family-owned firms, and the relationship of earnings management due to high financial distress with the relevance of earnings is higher than those in non-family-owned firms. Thus, earnings management due to high financial distress contributes to the alignment effect on family firms. This study has important practical implications. For investors, it provides relevant information about the effect of earnings management and family firms in value relevance to consider family-owned firms as an investment alternative. For standard-setter to evaluate existing standards and issue some regulations and standards to suppress earnings management to make financial reports more transparent. Further, the government should encourage companies to fulfil their CSR because CSR firms are less likely to manipulate earnings (Almahrog et al., 2018). Corporate managers may consider socially responsible behaviour because it reduces financial distress by lowering loan costs, easing financial limitations, lowering the cost of information asymmetry, and cost of capital (Farooq & Noor, 2021). The study only measures the family-owned firms as the dichotomous variable. It is suggested that further research provide additional analysis using the proxy of family ownership, i.e. shareholding in percentage.

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