

## **DETERMINANTS OF EARNINGS OPACITY: INDONESIA EVIDENCE**

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### **ABSTRACT**

*The opacity index of Indonesia ranks 35 of 48 countries in the world (Milken Institute, 2009) and 32 of 34 countries (Bhattacharya et al., 2003). It indicates that earnings quality of Indonesian public companies is low. The factors affecting earnings opacity of Indonesian public firms remains a question. This study investigates whether: (1) firms with concentrated ownership have higher earnings opacity compared to those of dispersed ownership, (2) firms audited by Big Four accounting firms have lower earnings opacity relative to those audited by non-big four firms, (3) financial firms have higher earnings opacity compared to non-financial firms, and (4) smaller firms have lower earnings opacity compared to larger firms. The sample for the study consist of all firms listed on the Indonesia Stock Exchange in 2008-2010. This study used independent sample t-test and regression analysis to test the hypotheses. Research findings suggest that: (1) smaller firms tend have greater earnings opacity than larger firms and it is used to maintain their private information from competitors, (2) firms with higher concentrated ownership tend to have lower earnings opacity. This finding suggests that a single majority ownership plays an important role in monitoring the transparency of information.*

**JEL:** G30

**KEYWORDS:** Earnings Opacity, Concentrated Ownership, Smaller Firms, Larger Firms, Financial Firms, Big Four, Non Big Four

### **INTRODUCTION**

**R**eported earnings can become opaque due to at least 3 factors: managerial motivation, accounting standard, and compliance with accounting standards. Firms' earnings opacity may result from an incident where managers are motivated to manipulate earnings. This is particularly due to flexibility in managing accounting standards. In addition, accounting standards do not specifically manage the accounting principles for several business activities and do not comply with the disciplines. Firms' earning can also be unclear due to factors not related to manager manipulation. However, this is because of accounting standards that do not transparently reflect the underlying business activities. In some instances, management does not have interest or cannot overcome the inefficiency of this standard by voluntarily providing informative earnings report (Belkaoui, 2005).

Earnings opacity measures how little information there is in a firm's earning number about its true, but unobservable economic performance (Bhattacharya et al., 2003). The Indonesian Opacity index ranks 35 out of 48 countries (Milken Institute, 2009). The Indonesian *earnings opacity* ranks 32 of 34 countries (Battacharya et al., 2003). This indicates that in Indonesia the quality of firms' earnings is still weak. Previous studies show that family ownership affects the earnings opacity index and earnings of family firms can be more opaque than non-family firms (Anderson et al., 2006 and 2009). However, factors influencing opacity remain questionable. This study extends previous studies on the determinant of earnings opacity in different legal systems. Previous references, indicate weak corporate governance and law protection for

investor rights are the main causes of low informative earnings. In weak legal territories, management uses accounting information to protect proprietary information from competition or to cover conflicts of interest with other investors (Fan and Wong, 2002; Leuz et al. 2003). Previous research (Anderson et al., 2006 and 2009) proves that although in a country where the protection level for investors are strong (e.g. United States), shareholders play an important role in affecting earnings opacity. Whether or not the majority of shareholders in Indonesia play important role remains questionable. This study investigates whether: 1) firms with concentrated ownership have higher earnings opacity than firms with dispersed ownership, 2) firms audited by Big four accounting firms have lower earnings opacity than those audited by other firms, 3) financial firms have higher earnings opacity than non-financial firms, and 4) smaller firms have lower earnings opacity than larger firms.

This study is significant for several reasons: 1) opaque earnings prove that company earnings do not reflect economic real earnings. Therefore, it will affect the decision making processes of investors particularly in the form of higher transaction costs. Earnings are a good instrument to measure the company's operational performance. Earnings information measures business success or failure in pursuing operational goals. Thus, qualified earnings information is necessary to make precise decision for internal and external divisions of the company, 2) good understanding of factors influencing earnings opacity can help regulators improve the available regulation concerning the quality of financial reports. Specifically for the board of Indonesian accounting standard setter to evaluate Financial Accounting Standards No. 1. This paper is organized as follows: Section 1 provides the introduction to the research, Section 2 provides a literature review, Section 3 shows the research methodology, Section 4 documents research result and discussion, and Section 5 provides conclusions.

## LITERATURE REVIEW

The information quality of a country is determined by the high and low level of legal protection for investors and opacity of the information environment. Higher legal protection means higher value relevance of accounting information. Cahan et al. (2008) proves the relation between earnings quality and value relevance is higher in a country with high protection for investors and less opacity for the information environment.

The information environment of a country is also affected by political aspects, corruption level, legal regulation, and investor protection level (Belkaoui and AlNajjar, 2006; Belkaoui, 2008; Fan et al., 2010). Politically connected firms have both costs and benefits, thus this condition increases the tendency for higher corruption levels. In a country with low enforcement corruption, the quality of earnings is accordingly lowered. Thus, the accounting of earnings is less able to measure real economic performance. Fan et al. (2010) prove that earnings information of networked firms significantly increases against their matching firms after the public exposure of scandals. Belkaoui and AlNajjar (2006) identify factors influencing earnings opacity within the international context. Internationally, earnings opacity are negatively related with the level of economic freedom and quality of life, and positively related with legal regulation, economic growth, and corruption level. Belkaoui (2005) also shows the stock market wealth effect is negatively influenced by earnings opacity and earnings opacity is positively related to the economic growth. Belkaoui (2004) shows that investor protection positively influences earnings opacity and that common law countries have low earnings opacity. Overall, this shows that earnings opacity varies among countries. What about countries with the same legal system? Do company characteristics determine earnings opacity? This study presumes that ownership structure, audit quality, industry types, and company size affect earnings opacity.

### Ownership Structure and Earnings Opacity

Newer research indicates that legal protection of a country plays an important role in maintaining the rights of minority shareholders. Legal systems protect investors by conferring their rights to discipline majority shareholders. Legal systems enforce the contracts designed to limit the ability of select shareholders to obtain private benefits. (La Porta et al., 1998; La Porta et al., 2000; Claessens et al., 2002). Baik et al. (2007) examine the relation between share ownership by managers and company information environment. Managerial entrenchment results in information opacity and has less intention to announce earnings forecast to anticipate bad news.

Previous studies (Anderson et al., 2006; Anderson et al., 2009) that examine the relation between concentrated ownership prove the information environment of family firms is more opaque than the non-family firms. The earnings opacity of family firms is shown to have a negative influence on firm performance. This indicates that quality disclosure becomes an important consideration for investors. Family in firms can play the role of monitor agent so it exploits the opacity to obtain private earnings. Therefore, in firms owned by concentrated ownership, majority shareholders will make use of their position to control the firm, including their financial reports. It is not clear whether the majority of shareholders will purposefully create earnings opacity. Earnings opacity may cause the majority of shareholders to use their voting rights to utilize earnings opacity to obtain private benefits.

H1: Earnings of firms with concentrated ownership are more opaque than those of dispersed ownership.

### Auditor Quality and Earnings Opacity

Several studies find that auditor quality can limit management discretion and the opportunistic behavior of the management with superior knowledge (Balsam *et al.*, 2003; Francis and Wang, 2006). Other studies show that firms which are audited by domestic auditors have higher discretionary accruals because they do not comprehensively understand the modern risk-based approach in auditing. Moreover, audit fees are higher than for firms that have higher earnings opacity (Gosh, 2010). Meanwhile, Belkaoui and AlNajjar (2006) show that earnings opacity in firm's decreases along with increases in disclosure, the number of auditors, and accounting standard adoption. Therefore, this research presumes the higher auditor quality, the more they understand the audit risks that they face. As a result, earnings opacity will be lower. Based on this argument the hypothesis is stated as follows:

H2: Earnings of firms audited by Big four accounting firms are less opaque than earnings of firms audited by Non-Big four firms.

### Industry and Earnings Opacity

Several studies show a relation between financial sector and opacity. Berger et al. (1999) examine how bank market competition, information opacity, and shock sensitivity have changed over the last three decades by examining credit persistency at the firm level. The research results show the different processes that underlie the persistency of performance distribution, impede competition, and information opacity include the persistency determinant. Decreasing geographic regulation, however, has little impact on the competition level, and the persistency is still influenced by macroeconomic shocks. Wagner (2009) states that crises have resulted in increased opacity levels in banks. The research clarifies that financial improvement, decreasing the bank asset opacity, can create an impact. The bank becomes less transparent and its activities are inefficient. This is due to the fact that, according to the bank manager, opacity is difficult to handle and it is also not easy to discipline it. Along with financial improvement, bank managers substitute their assets with less transparent activities even though it has lower profitability (Wagner, 2009). Financial sectors are the most regulated, so this research presumes that financial firms will exploit their

earnings to protect them from regulator monitoring. The next hypothesis is:

H3: Earnings in financial firms are more opaque than earnings in non-financial firms

#### Firms Size and Earnings Opacity

Company's size may affect earnings opacity. Beasley et al. (2000) report that deceitful firms in technology, health-care, and financial services have less internal audit support and are accompanied by weak corporate governance mechanisms. Therefore, larger firms tend to design and maintain internal monitoring systems more effectively and sophisticatedly than smaller firms to decrease earnings manipulation by the company's management. In addition, larger firms usually have sophisticated internal monitoring systems and more internal auditors than smaller firms. Effective internal monitoring systems function to control the less accurate financial information to public. Larger firms generally have more experience and therefore have better control of the company's operation and business environment than smaller firms. Larger firms also usually maintain their credibility in the business community and social responsibility. Larger firms have more expertise and experience in controlling the financial information credibility that is revealed. Linsley and Shrivs (2005) confirmed that larger firms usually opt for not revealing information of risks or risk management, because this is viewed as sensitive from a commercial point of view. Smaller firms tend to become close so information access from the external parties towards smaller firms is so low that the opacity level becomes high. Hence, the cost of engaging in earnings opacity will be higher for larger firms than smaller firms. Therefore, their concern about reputation may prevent large firms from reporting opaque earnings. This indicates that smaller firms commonly have higher earnings opacity. Hence the next hypothesis is:

H4: Earnings of small firms are more opaque than earnings of larger firms.

#### **METHODOLOGY**

The research sample includes 397 firms listed on the Indonesian Stock Exchange from 2008-2010 that issued yearly financial reports per December 31st. This research uses data pooling resulting in total observations of 1,191. We omitted 186 observations hence the final sample includes 1,005 observations. Yearly financial reports were obtained from the Indonesian Stock Exchange. Meanwhile, trading volume and bid ask spread data were collected from Bloomberg.

Independent variables in this study are concentrated ownership (MAJOROWN), auditor quality (AUD), Industry (IND), and firm size (LSIZE). Hence the dependent variable is earnings opacity (OPACITY). Concentrated ownership is measured using the highest percentage of company shares owned by personal, government or institutional shareholders. Auditor quality is measured using a dummy variable, 1 if firm audited by big four, 0 otherwise. Industry is measured using a dummy variable, 1 if it is a financial firm, 0 otherwise. Firm size is proxied with natural log of total assets.

Earnings opacity is the earnings reported by firms that fail to provide information on the real economic earnings distribution (Bhattacharya et al., 2003). Earnings opacity is measured by an earnings opacity index established from two main elements of earnings opacity namely, internal and external earnings opacity. Internal earnings opacity is measured by earnings aggressiveness, income smoothing, and the number of footnotes. External earnings opacity is measured by bid-ask spread and trading volume. From those five measurement tools, an earnings opacity index is established. This study categorizes all earnings opacity proxy into scales. The most opaque firms are graded 10 and the least opaque is graded 1. All five categories are added and scaled by a factor of 50 (the possible total value) to make index ranging from 0.1 to 1. Higher index levels imply higher the earnings opacity. This index gives relatively robust measure of opacity. This measurement is a modification from the opacity index from Anderson et al. (2009) and Bhattacharya et al.

(2003). The following are the measurements from internal and external earnings opacity.

Internal earnings opacity is measured using earning aggressiveness, income smoothing and disclosure level through notes on financial report in income statement. Earnings aggressiveness (Bhattacharya et al., 2003) is calculated using scaled accruals. Scaled accruals are defined as:

$$ACC_{it} = (\Delta CA_{it} - \Delta CL_{it} - \Delta CASH_{it} + \Delta STD_{it} + \Delta DEP_{it} + \Delta TP_{it}) / TAK_{t-1} \quad (1)$$

Where:

- ACC<sub>it</sub> = scaled accrual company i period t
- ΔCA<sub>it</sub> = total change of assets company i period t
- ΔCL<sub>it</sub>: = change of current debt company i period t
- ΔCASH<sub>it</sub> = change of cash of company i period t
- ΔSTD<sub>it</sub> = change of long-term debt proportion included in short-term debt company i period t
- DEP<sub>it</sub> = depreciation and amortization cost company i period t
- ΔTP<sub>it</sub> = change of taxable income company i period t
- TAK<sub>t-1</sub> = total asset company i period t-1

Income smoothing, which is calculated using the correlation change in the accrual and cash flow from operation (Leuz et al., 2003), is as follows:

$$PL_{it} = \rho[\Delta Acc, \Delta CFO] \quad (2)$$

Where:

- PL<sub>it</sub> = income smoothing of company i period t
- ΔAcc<sub>it</sub> = accrual change of company i period t
- ΔCFO<sub>it</sub> = change of operational current cash of company i period t
- P = correlation level

Disclosure level through notes on financial reports in the income statement (this modified from that of Akhigbe and Martin, 2005), is calculated by dividing the number of notes on the income statement over total of footnotes in income statement. The lower the proportion level, the higher the earnings opacity.

External earnings opacity is developed from trading volume and bid-ask spreads. Volume of share trading, is a proxy of asymmetric information and uncertainty (Leuz and Verrecchia, 2000; Anderson et al., 2006), which is calculated by the natural log of average volume of daily share trading during the fiscal year. Bid ask spread (Anderson et al., 2006) is the proxy of asymmetric information among investors. Bid ask spread is defined as follows:

$$Bid\ Ask\ Spread = (bid\ price - ask\ price) / average\ bid\ and\ ask\ price \quad (3)$$

The calculation for bid-ask spread is carried out by counting the average of all trades for each company every Wednesdays of the third week. The result is calculated to find the mean during the year based on the 12 observations. Due to many observations related to the share trade data, this research limits the analysis to a typical trade day of each month. Monthly data are then calculated for its mean every year. This study chooses the third Wednesday in each month to eliminate loss of data because of holidays and to minimize the weekly effects.

Analysis Methods

This study uses independent sample t- test to test the hypotheses. Also, this study uses multiple regression analysis with dummy variable as the additional analysis to test hypotheses. The regression model is:

$$OPACITY_{it} = \alpha + \beta_1 MAJOROWN_{it} + \beta_2 AUD_{it} + \beta_3 IND_{it} + \beta_4 LSIZE_{it} + e \tag{4}$$

Where:

- OPACITY = Earnings opacity index
- MAJOROWN = Majority ownership
- AUD = Auditor quality (dummy, 1 if firm audited by Big four, 0 otherwise)
- IND = Industry (dummy, 1 if financial firm, 0 otherwise)
- LSIZE = Ln Total Asset

**RESULT AND DISCUSSION**

Descriptive Statistics

This research uses data pooling with a total of 1,005 observations from 2008-2010. Table 1 shows descriptive statistics consisting of the mean and standard deviation for each variable. Firm’s size (LSIZE) has the highest standard deviation, whereas opacity index (OPACITY) has the lowest standard deviation.

Table 1: Descriptive Statistics

Variable	N	Mean	Std. Deviation
Ownership (MAJOROWN)	1005	0.474	0.499
Auditor (AUD)	1005	0.220	0.415
Industry (IND)	1005	0.113	0.317
Size (LSIZE)	1005	19.952	1.271
Opacity Index (OPACITY)	1005	0.206	0.073

*This table shows summary statistics for full observations (N=1005). Ownership (MAJOROWN) is the highest percentage of companies share that owned by personal, government or institutional shareholder. Auditor (AUD) is dummy variable, 1 if firm audited by big four, 0 otherwise. Industry (IND) is dummy variable, 1 if financial firm, 0 otherwise. Size (LSIZE) is natural log of total assets. Opacity index (OPACITY) is an index developed by internal and external opacity.*

Independent Sample t-test

Hypotheses 1, 2, 3 and 4 are tested using the independent sample t-test: (1) Hypothesis 1: samples are categorized into two: firms with single majority ownership and firms that do not have single majority ownership. A company has concentrated ownership if there is single majority owner that directly own 50% or more shares (Schiehl and Santos, 2004). If the majority of shareholders in the company are less than 50%, the company is categorized into dispersed ownership (non-single majority ownership). (2) Hypothesis 2: samples are categorized into two groups: firms audited by Big Four and non-Big Four. (3) Hypothesis 3: samples are categorized into two groups: financial company group and non-financial company group. (4) Hypothesis 4: samples are categorized into two: larger and smaller firms. Smaller firms are those the natural log of total assets are lower than median of all firms the natural log of total assets and larger firms are those that the natural log of total assets are upper than median of all firms the natural log of total assets. A t-test on the opacity index was conducted for each group pair. The result of the independent sample t-test is presented in Table 2:

Table 2 shows the independent sample t- test result. Panel A shows the mean for earnings opacity index of firms with concentrated ownership (those that have single majority ownership) is significantly lower than

the earnings opacity index of firms with dispersed ownership with p-value 0.017. This means that hypothesis 1 in this study is not supported because firms with concentrated ownership have a lower earnings opacity index. This also indicates that the existence of majority shareholders in a company can prevent from discretion actions taken by management to manage the earnings and change the disclosure function in the company.

Panel B shows, although not significant, the mean for earnings opacity index of the firms audited by Big four auditor is lower than the firms audited by non-Big four. This means that hypothesis 2 is not supported. It also proves that qualified auditor existence has not been able to reduce earnings opacity levels, or auditors have not been able to detect management discretion in using the earnings opacity for their private benefit.

Table 2: Result of Independent Sample t- test

Sub Sample	Mean	F	P value
<b>Panel A:</b>			
Single majority	0.553	14.543	0.017*
Non single majority	0.621		
<b>Panel B:</b>			
Big Four	0.428	3.126	0.232
Non Big four	0.554		
<b>Panel C:</b>			
Financial Firms	0.612	1.578	0.148
Non Financial Firms	0.506		
<b>Panel D:</b>			
Smaller Firms	0.619	6.016	0.034*
Larger firms	0.247		

*This table shows the result of independent sample t-test for all sample groups. Panel A shows the mean for earnings opacity index of firms with single majority ownership is significantly lower than the earnings opacity index of firms with dispersed ownership with p-value 0.01. Panel B shows there is no difference of the mean for earnings opacity index of the firms audited by Big four auditor and the firms audited by non-Big four. Panel C shows there is no difference of the mean for earnings opacity index of financial firms and non-financial firms. Panel D shows the mean of earnings opacity index in smaller firms is significantly higher than larger firms with p-value 0.034. \*Statistically significant at the 5 percent level*

Panel C shows the mean of earnings opacity index in financial industries is higher than non-financial industries although not significant. It means that hypothesis 3 in this study is not supported. This indicates that both financial and non-financial firms do not have different motivation in reporting firm earnings. Even though financial firms are high regulated firms, they are not motivated to use earnings opacity to cover the real condition of the firms from tight monitoring of the regulator.

Panel D shows the mean of earnings opacity index in small firms is significantly higher than larger firms with p-value 0.034. It means that hypothesis 4 in this research is not supported. It indicates that small firms tend to use earning opacity to protect their firms from unbeneficial competitors.

### Regression Analysis

The result of regression analysis using dummy variable is presented in Table 3. Based on Table 3, the MAJORITY variable has coefficient of -1.369 but is not significant. This implies that the more concentrated ownership in the firms, the lower the earnings opacity level. The dummy variable AUD has coefficient of 0.036 but is not significant. This implies the earnings opacity level among firms audited by Big 4 auditors is not significantly different from that of non Big Four. The dummy variable IND has the coefficient of 0.116 and is not significant. This indicates the earnings opacity level between financial firms is not different from that of non-financial firms. The coefficient variable of LSIZE is negative 0.023 and is significant. This suggests the larger the size of firms, the smaller the earnings opacity level. This also indicates that the larger the size of the firms, the more transparent the earnings of the firms.

## CONCLUSION

This study addresses questions of the determinants of earnings opacity. Specifically we investigate whether: (1) firms with concentrated ownership have higher earnings opacity than firms with dispersed ownership, (2) firms audited by the Big four have lower earnings opacity than those audited by non-Big four, (3) financial firms have higher earnings opacity than non-financial firms, (4) smaller firms have a lower earnings opacity compared to larger firms. This study uses data pooling with 1,005 observations and uses independent sample t-testing and regression analysis to test the hypotheses

In general, this study shows that smaller firms tend to have higher earnings opacity levels than larger firms. This is because smaller firms make efforts to use their earnings opacity to keep company information from competitors. This condition is consistent with the arguments of Fan and Wong (2002) who stated that managers may prefer to choose a more opaque information environment to protect private information of the firm and specific human capital.

Table 3: Regression Analysis Result

Variable	Coefficient	t-Statistic
MAJOROWN	-1.369	-1.680
AUD	0.036	1.291
IND	0.116	0.098
LSIZE	-0.023	1.932*
R-squared	0.037	

*This table shows regression result for equation 4. Equation 4 contains 4 independent variables, which are MAJOROWN (the highest percentage of companies share that owned by personal, government or institutional shareholder), AUD (dummy variable, 1 if firm audited by big four, 0 otherwise), IND (dummy variable, 1 if financial firm, 0 otherwise) and LSIZE (natural log of total asset). The dependent variable is OPACITY (an index developed by internal and external opacity). \*Statistically significant at the 5 percent level.*

The results show that firms with concentrated ownership are more transparent or have lower earnings opacity level than firms with dispersed ownership. The result is not consistent with that of Anderson et al. (2006) and Anderson et al. (2009). This shows that the existence of majority shareholder in a company can change the governance function in the company so that it can limit the tendency of the management to use the earnings opacity to obtain private benefits. This study demonstrates the existence of controlling shareholders plays an important role in firms with concentrated ownership including in the financial report. The existence of majority shareholders is able control monitoring function in firms so that the firms do not need to make extensive disclosures.

This study has two limitations: (1) The sample time frame might cause inconclusive result since the year 2008 is the global financial crisis period that had a significant impact on the performance of the capital market in Indonesia; (2) This study uses immediate ownership to measure the ownership structure. Future research could use ultimate ownership to trace the controlling shareholder. Future research also could observe the determinants of earnings opacity of state owned enterprises (SOE's) in Indonesia, and whether their level of earnings opacity higher than non SOE's. This might be particularly interesting because the SOE's in Indonesia are highly politically connected.

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## **BIOGRAPHY**

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