Fair Value Implementation of Financial Asset: Evidence in Indonesia's Banking Sector

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Abstract—The purpose of this study is to analyze and to give empirical proof about the effect of fair value implementation on financial asset against information asymmetry in Indonesia's banking sector. This research tested the effect of fair value implementation on financial asset based on Statement of Financial Accounting Standard (PSAK) No. 55 and the fair value reliability measurement based on PSAK No. 60 against level of information asymmetry. The scope of research is Indonesia's banking sector. The test's result shows that the use of fair value based on PSAK No. 55 is significantly associated with information asymmetry. This positive relation is higher than the amortized cost implementation on financial asset. In addition, the fair value hierarchy based on PSAK No. 60 is significantly associated with information asymmetry. This research proves that the more reliable measurement of fair value on financial asset, the more observable fair value measurement and reduces level of information asymmetry.

Keywords—Fair value, PSAK No. 55, PSAK No. 60, information asymmetry, banks.

I. INTRODUCTION

THE convergence of financial accounting standard towards International Financial Reporting Standard (IFRS) makes Indonesia Institute of Accountant (IAI) process convergence several financial accounting standards released by International Accounting Standard Board (IASB) onto PSAK (Statement of Financial Accounting Standard and a guidance for accounting practice which is applied in Indonesia and released by Indonesia Institute of Accountant). This convergence process brings a big change on financial accounting treatment in Indonesia such as the transformation from amortized cost to fair value accounting.

The objective of fair value accounting is to take a responsibility as control for investment of financial asset [1]. Fair value is presumed to increase the reliability of financial statement through market value and historical cost is presumed to prevent clarity identification about financial instrument. Fair value can be the most relevant measurement because reflecting a whole operational economy all over the world [2]. References [3]-[5] used the same approach to assess the relevancy of value change from fair value on category of banking financial asset and liability under SFAS No. 107 (securities investment, bond, term deposit and long-term debt) proved that fair value on securities investment is more informative than book value on explaining banking share price. Reference [3] also found that fair value on loan is

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informative on reflecting information about default risk and interest rate. Fair value can be so relevant and reliable enough to explain share price through recognition and disclosure of information [6], [7]. PSAK No. 55 defines fair value as value where asset can be traded or liability can be redeemed between parties who understand and intent to do arm's length principle willingly. On the other side, there are several arguments state that fair value implementation involve managerial judgment measuring each account on financial report. That condition has potency to increase information asymmetry between management and users of financial statement and impacts to moral hazard and adverse selection for decision-making purposes. Reference [8] objected to fair value implementation because historical cost is better to inform value relevant than fair value due to assumption and probability on fair value measurement. Reference [9] found that fair value of net asset and hierarchy of fair value based on SFAS 157 during 2008 and 2009 relate significantly and positively to bid-ask price spread. European Central Bank also objected fair value implementation for banking industry especially to measure financial instrument based on IAS 39 due to the percentage of financial asset to total asset of banking industry is almost 80% and it can give significant impact to industry as a whole. To increase consistency and comparability on implementing fair value, FASB released SFAS 157 – Fair Value Measurement in 2006 while Indonesia through IAI released PSAK No. 55 (revised in 2011) – Recognition and Measurement and PSAK No. 60 (revised in 2010) – Disclosure effective date on January, 1st 2012. Those regulations explain that several financial instruments must be measured, recognized, and disclosed using fair value.

Fair value implementation makes company report its financial asset and liability based on market value on financial report. Besides, company has to report the gain or loss caused revaluation process on income statement or other comprehensive income and may cause the company income fluctuation due to the change of market price instead of operational activities. This issue causes controversy between practitioners and academies, because the implementation of fair value accounting is hypothetically presumed that it has the relation with information asymmetry and reduces the information reliability for decision-making process. Information asymmetry is one of crucial issue for shareholder due to suffering of it [10].

The high information asymmetry can trigger information exploitation by informed shareholders [11]-[14] while uninformed shareholders realize that they face adverse selection problem and are motivated to increase bid-ask spread

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to protect their investment from suffering of loss on trading securities in market with informed shareholders [15], [16]. Reference [17] also found that there's a positive relation between information asymmetry and stock excess return. Reference [9] found that fair value hierarchy (FVL1, FVL2, and FVL3) relates significantly with information asymmetry where FVL3 has the highest information asymmetry and FVL1 on the contrary. That research also explained that fair value increase the possibility of global financial crisis in 2008 especially due to the implementation of FVL2 and FVL3 cause information asymmetry, while FVL1 has negative impact on information asymmetry and decrease potency of financial crisis. Indonesia has been implementing Statement of Financial Accounting Standard (PSAK) No. 55 – Recognition and Measurement and PSAK No. 60 – Disclosure related financial asset and liability since January 1st 2012 and presumed Indonesia is required to be examined for the effect of financial asset fair value implementation on information asymmetry of banking sector in Indonesia.

The purpose of this study is to analyze whether the use of fair value on financial instrument under PSAK No. 55 on banking financial report in Indonesia relates positively with information asymmetry and to analyze whether the reliability of fair value measurement under PSAK No. 60 relates negatively with information asymmetry.

This study defines information asymmetry based on bid-ask spread of opening and closing daily share price with a long-term period of time, i.e. one quarter after announcement of quartile financial report, similar to [9]. The purpose of this approach is to focus on banking condition all over time, stable and non-stable, and to consider the asset fluctuation during quarters. Nevertheless, this research uses time interval after announcement of quartile financial report adjusted with cut-off date based on Bapepam (as a Capital Market and Financial Institutions Supervisory Agency in Indonesia) Regulation No. KEP-346/BL/2011. Thus, information asymmetry is measured with bid-ask spread of opening and closing daily share price with a long-term period of time.

II. Literature Review and Hypothesis Development

A. Information Asymmetry

Information asymmetry is an indication describes a situation caused by one agent possesses more information on financial instrument trading than others. Reference [18] defined information asymmetry as when one side of the negotiation process has better information than the other. Reference [19] explains that information asymmetry can appear on several forms such as 1) only manager knows whether he/she works well for shareholder value; 2) manager probably knows more information about company than shareholder and 3) company information is directed by manager for individual purposes. Thus, information asymmetry is a condition which happens if one of parties on economic transaction has more information and has better access than the other that give an impact to unbalanced of information distribution among shareholders.

B. Bid-Ask Spread

Bid-ask spread is a difference between a highest price causes dealer agree to purchase a stock (bid price) with a lowest price causes dealer to agree to sell a stock (ask price). Microstructure literature about bid-ask spread states that there is a spread component contributes to loss on transaction between uninformed and informed investor. Reference [20] argued that bid-ask price reflects an assumption that bid-ask spread is symmetry with expected implicit asset price. If spreads reflects symmetrically for supply and demand in market, so quoted bid-ask price will simultaneously move up or down after stock transaction in market with the same change level and the same contribution of quoted bid-ask price to stock price and implies the identical market-marking cost in market.

C. Fair Value under PSAK No. 55 (Revised in 2011)

IAI explains that fair value is an assumption that entity is a unit which operates on purpose for going concern purposes without there's any intention or willing to liquidate in the short-term, to barrier scale of operation or transaction. Fair value uses term of bid price and asking price or current offer price and term of bid-ask spread. IAI released PSAK No. 55 (revised in 2011) – Recognition and Measurement that divides financial asset into four categories such as fair value through profit (loss), available for sale, held to maturity and loan/receivable. PSAK No. 60 (revised in 2010) – Disclosure that divides fair value measurement into three hierarchies such as level 1 (quoted from active market price), level 2 (quoted from observable data for inactive market price) and level 3 (valuation with unobservable data for inactive market price). For the purpose of enhancing consistency and comparability in applying fair value, the IAI published PSAK No. 55 – Recognition and Measurement and PSAK 60 (revised in 2010) – Disclosure, effective from the fiscal year beginning on or after January 1st, 2012. Any financial instruments measured at fair value are required to comply with the provisions of this standard. According to Paragraph 28 of PSAK No. 60 – Disclosure, FVL1 inputs are quoted prices (unadjusted) in active financial markets for identical assets or liabilities: they can be observed directly from liquid asset markets, and are publicly available without managements' manipulations. These inputs are considered to be the most transparent evidence of fair value. The IAI, realizing that active markets do not always exist for certain assets and liabilities, also defined FVL2 as inputs, other than quoted prices included in FVL1, that are either directly or indirectly observable for the asset or liability. FVL2 inputs are further categorized into three subgroups: quoted market prices for similar assets and liabilities traded in active markets; quoted market prices for identical assets and liabilities in inactive markets; and finally, prices corroborated by market-based measures which are sufficient to allow the fair values to be estimated (PSAK No. 60 (revised in 2010), para.28). FVL3 inputs are unobservable inputs, which are computed by using price models, discounted cash flow methodologies, or other information reflecting a

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reporting entity's own assumptions and judgments (PSAK No. 60 (revised in 2011), para.30).

D. Fair Value Accounting and Information Asymmetry

Information disclosure is expected to reduce information asymmetry and to improve stock liquidity in capital market, due to each of stockholder has the similar information to do stock transaction in market. That information can increase the stock transaction fairness and decrease the abnormal pricing movement in market [21]. Reference [22] documented that there is a negative relation between bid-ask measurement bases on information asymmetry with disclosure quality caused by private information possessed by informed investors. Reference [9] found that fair value accounting has taken a role on investment decision making during global financial crisis.

E. The Effect of Fair Value Implementation on Financial Asset on Information Asymmetry

PSAK No. 55 (revised in 2011) obligates to use new measurement and disclosure on equity and bond investment. PSAK No. 55 (revised in 2011) obligates each of those investments to be classified into four categories such as fair value through profit and loss (FVTPL), available for sale (AFS), held to maturity (HTM) and loan and receivable (LR). Reference [14] argued that financial asset classified as trading securities has relation positively and significantly to information asymmetry higher than financial asset classified as held to maturity. Mark-to-market accounting method can increase information asymmetry higher than historical cost method. Besides, [14] also argued that financial asset categorized as available for sale has positive relation to information asymmetry smaller compared with financial asset categorized as trading securities. That result indicates that effects from mark-to-market accounting method can be minimized when revaluation process is recognized on accumulated other comprehensive income instead of net income. Reference [23] argued that unrealized gain and loss of financial asset categorized as available for sale is capable to increase market reaction where speculative activity on market can be restricted by available for sale securities.

Hypothesis 1.a: Financial asset measured by fair value (FVTPL and AFS) has higher positive relation to information asymmetry than financial asset measured by amortized cost (HTM and LR)

F. The Effect of Reliability of Fair Value Measurement on Financial Asset on Information Asymmetry

PSAK No. 60 (revised in 2010) divided fair value measurement into three hierarchies such as level 1 (FVL1), level 2 (FVL2) and level 3 (FVL3) based on the input reliability of fair value measurement. Input for level 1 is a quoted active market price and considered as the most reliable and transparent measurement for shareholders. The positive relation between information asymmetry and FVL1 is expected lower than FVL2 and FVL3, while FVL2 depends on similar and observable financial asset price; moreover, FVL3 only uses estimated price based on management assumption.

Those situations allow manager to have a scope and incentive to manipulate each of information as an opportunity on management assumption as estimated price [24].

Reference [25] evidenced that bank manages fair value of loan and receivable to increase market perception on bank performance. This opportunist behavior can trigger positive impact of fair value accounting on information asymmetry, while uninformed shareholders will get loss from that information due to misunderstanding of unqualified information of fair value measurement. Thus, information asymmetry among informed shareholders and uninformed shareholders about fair value measurement is worse at FVL2 and FVL3 measurement than FLV1.

In short term, fair value estimation will be connected with information depends on hierarchy level used. Information asymmetry is increasing from FVL1 until FVL3 because the increasing of subjectivity on estimating fair value on each level of measurement. Reference [9] found that net asset of fair value in banking sector on global financial crisis period relates significantly to information asymmetry. That result indicates that FVL1 has significantly negative relation, while FVL2 and FVL3 have significantly positive relation to information asymmetry. When capital market is not liquid and not stable, information asymmetry will have relation with estimated fair value and increase according to level of fair value measurement. Based differences of reliability on level of fair value measurement, it's expected that the increasing of information asymmetry is highest on FVL3 and lowest on FVL1.

Hypothesis 1.b: The more reliable fair value measurement (the highest hierarchy of fair value) on financial asset, the lower positive relation to information asymmetry has.

III. SAMPLE AND RESEARCH DESIGN

A. Sample Selection

TABLE I
RESEARCH SAMPLE DESCRIPTION

Research sample description	Amount
Total sample from first quarter 2012 for forth quarter 2014	468
Total sample which doesn't have quartile financial report	(75)
Total sample with incomplete bid-ask price	(177)
Total sample which does merger and consolidation	0
Firm-quarters sample used for all research model	216

Banks' quarterly accounting data and daily closing bid and ask price data are used to test the relationship of fair value implementation and measurements on information asymmetry. Quarterly accounting data were collected from the Eikon Quarterly File. Daily closing-bid and ask prices are obtained from the DataStream, Thomson Reuters Daily Stocks File. Since PSAK No. 55 (revised in 2011) and PSAK No. 60 (revised in 2010) became effective for fiscal years beginning on or after January 1st, 2012, initially obtain 468 bank-quarter observations whose fiscal years are 2012 until 2014. This research retains bank publish quartile financial report, which reduced by 75 observations, then delete sample with incomplete bid-ask price by 177 samples. Final firm-quarters sample used for all research model are 216 samples.

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B. Research Design

To test indicator of fair value implementation, variable of fair value is divided into four categories of financial instrument based on PSAK No. 55 (revised in 2011) such as fair value through profit/loss (FVTPL), available for sale (AFS), held to maturity (HTM) and loan/receivable (LR). To test Hypothesis 1, this research examines the effect of fair value implementation on financial asset on information asymmetry. The form of first model to test Hypothesis 1 is as:

$$SPREAD_{it} = \beta_0 + \beta_1 FVTPL_{it} + \beta_2 AFS_{it} + \beta_3 HTM_{it} + \beta_4 LR_{it} \\ + \beta_5 SIZE_{it} + \beta_6 LOSS_{it} + \beta_7 TURNOVER_{it} \\ + \beta_8 PRICE_{it} + \beta_9 LLP_{it} + \beta_{10} CAPR_{it} + \varepsilon_{it}$$

While to test the reliability of fair value measurement, variable of fair value is divided into three hierarchies of fair value measurement based on PSAK No. 60 (revised in 2010) such as level 1, level 2 and level 3. A higher level of fair value hierarchy, a more reliable measurement applied to fair value, it's because fair value is easy to observe by all stakeholders. Based on Regulation of Central Bank of Indonesia (BI) No. 13/1/PBI/2011 about solvency level for bank – measured by credit risk, market risk, liquidity risk, operational risk, litigation risk, strategic risk, compliance risk and reputation risk – which governs banking investment risk in Indonesia and causes bank only permitted to invest on financial asset measured on FVL1 and FVL2. The form for second model to test Hypothesis 2 is as:

$$SPREAD_{it} = \beta_0 + \beta_1 FVL1_{it} + \beta_2 FVL2_{it} + \beta_3 SIZE_{it} + \beta_4 LOSS_{it} \\ + \beta_5 TURNOVER_{it} + \beta_6 PRICE_{it} + \beta_7 LLP_{it} \\ + \beta_8 CAPR_{it} + \varepsilon_{it}$$

TABLE II
VARIABLE DESCRIPTION

SPREAD	:	Average of daily bid-ask spread for each bank during one quarter after quartile financial report announcement
FVTPL	:	Category of fair value through profit and loss financial asset per share for each bank on each quarter
AFS	:	Category of available for sale financial asset per share for each bank on each quarter
HTM	:	Category of held to maturity financial asset per share for each bank on each quarter
LR	:	Category of loan and receivable financial asset per share for each bank on each quarter
FVL1	:	Hierarchy Level 1 for fair value per share for each bank on each quarter
FVL2	:	Hierarchy Level 2 for fair value per share for each bank on each quarter
SIZE	:	Logarithm for company total asset in the end of each quarter
LOSS	:	Dummy variable where 1 if company net income is negative and 0 if others.
TURNOVER	:	Logarithm for average daily stock turnover during one quarter, calculated from trade volume divided with outstanding share per quarter.
PRICE	:	Logarithm for average daily closing stock price during one quarter.
LLP	:	Loan loss provision (income statement item) per share, calculated from expense per quarter divided with outstanding share per quarter.
CAPR	:	Risk-adjusted capital ratio tier 1 for company at the end of quarter period.

Independent variables for this research are fair value implementation and reliability of fair value measurement based on financial asset reported by bank i on quarter t per outstanding share. Data for fair value implementation and reliability of fair value measurement are obtained from quartile notes of financial report on Indonesia Stock Exchange website.

Dependent variable for this research is information asymmetry measured by bid-ask spread from opening and closing daily share price. Previous researches have already proved that bid-ask spread can describe information asymmetry among shareholders. Reference [9] used daily bid-ask spread for each company during one quarter after the announcement of quartile financial report.

$$SPREAD = \frac{1}{D_{it}} \sum_1^{D_{it}} \frac{(Ask - Bid)}{(Ask + Bid)/2}$$

where: D_{it} is the number of trading days in quarter t for firm i for which closing daily bid prices and closing daily ask prices are available.

The spread measurement is often employed in the accounting and finance literature [26]. Further, this research focuses on the average daily bid–ask spread for firm i over quarter t, rather than bid–ask spread immediately surrounding earnings announcements, in order to avoid the temporary changes in bid–ask spread caused by earnings announcements [22]. This allows investigating the long-term effect of fair value estimates on information asymmetry. Also, this research measures bid–ask spread for the quarter to which fair value estimates relate, rather than lag the measurement of bid–ask spread to a period after release of the fair value information.

This research controls for bank size, measured by log value of total assets at the end of each quarter of the year 2008, because larger firms are less likely to experience information asymmetry problems [27]. Therefore, bid–ask spread is expected to have negative relation to size. Another control variable is loss, a dummy variable equaling one if a firm's current quarterly net income is negative and zero otherwise. Previous literature indicates that loss recognition is able to decrease information asymmetry level [28]. We therefore expect that there is a negative association between bid–ask spread and loss. Turnover (log value of the quarterly average of trading volume divided by numbers of shares outstanding) are included to control bid–ask spread as vector of information that is expected to be negatively related to information asymmetry. When trade liquidity becomes an exogenous factor and inelastic with stock price, so trade volume (stock turnover) can increase information asymmetry. It's caused by informed shareholders try to exploit private information; nevertheless, trade liquidity has time discretion that makes stock turnover can decrease information asymmetry [29] and [30]. Previous literatures have shown that stock price can explain significant relationship on information asymmetry [31] that stock price is significantly positive with information asymmetry. Nevertheless, [32] concluded that stock price is an information vector, so that it can be negatively related with

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information asymmetry. Reference [33] also concluded that stock price is unobservable proxy for minimum cost, so that it can be negatively related with bid-ask price. In addition, an indicator variable, the bank's risk adjusted capital ratio Tier 1 (CAPR) is used to control for capital adequacy, because CAPR can describe capital availability for bank operating activity [34]. CAPR can be negatively related with. Several previous researches argued that bank manager used loan loss provisions to apply income smoothing [35]-[37] and to manage capital regulation [38]. From those perspectives, loan loss provisions might to improve information risk and uncertainty.

IV. ANALYSIS AND RESULT

A. Descriptive Statistic

Table I shows that the average for dependent variable (SPREAD) shown by closing bid-ask price in 2012–2014 quarterly in Indonesia's banking sector is 0,031566. That result shows that information asymmetry level in Indonesia's banking sector is not significantly difference among shareholder. The average for fair value measurement hierarchy level 1 (level 2) is Rp 627,12 (Rp 138,49) per outstanding share. It means that bank's fair value measurement is dominated by hierarchy level 1, indicating that, during 2012 – 2014 where banks focus to invest on observable financial asset on active market, compared with fair value measurement hierarchy level 2 (observable not on active market). The average for Loan and Receivable is Rp 6.097,09 per outstanding share, dominates each category of financial instrument, compared with others. It means that banks are interested to allocate its investment on the most secure financial asset.

B. Analysis

Model 1 shows that the relationship between information asymmetry and financial asset measured by fair value (FVTPL and AFS) is significantly more positive than financial asset measured by amortized cost (HTM), indicating that fair value implementation on financial assets are strongly associated with higher information asymmetry among shareholders than amortized cost measurement on financial assets. Model 1 shows that category of loan and receivable (LR) is not significantly related with information asymmetry. It's caused by Saving Guarantee Institution (LPS) takes a role to ensure that depository asset is secure. While FVTPL and AFS cause the uncontrollable factor for income fluctuation other than company operating activity. FVTPL gives the highest contribution for information asymmetry for fair value implementation caused by speculative activity on capital market. This result supports Hypothesis 1.

Model 2 shows the relationships between information asymmetry and each level of fair value inputs, FVL1 and FVL2. The coefficients of FVL1 and FVL2 are all positive and significant. In addition, F-tests show that there is a significant time-series variation in information asymmetry for the two levels of fair value. Specifically, the coefficient of FVL2 is significantly larger than that of either FVL1. This means that since Level 2 inputs are observable but not active in market and are computed by using internal information of each bank's management, they have the highest association with bid–ask spread, and thus have largest information asymmetry in equity markets, compared to FVL1 inputs which more observable in active market. This is consistent with the notion that decreasing reliability of fair value inputs from FVL1 to FVL2 leads to greater opacity and information risk. This result supports Hypothesis 2.

TABLE III
DESCRIPTIVE STATISTIC

Variable	Min	Max	Average	Std. Dev
Dependent Variable				
SPREAD	0.00226	0.167561	0.031566	0.043887
Independent Variable				
FVL1	0.144	2,369.53	627.12	629.17
FVL2	0.0018	446.04	138.49	165.09
FVTPL	0.0168	160.55	61.90	65.12
AFS	2.1195	2,692.16	690.04	755.99
HTM	0.1461	9,613.98	1,543.09	2,815.25
LR	8.1437	19,414.32	6,097.09	6,051.88
Control Variable				
SIZE	3,772.32*	672,173.00*	181,483.73*	190,035.61*
TURNOVER	0.00	120.39	30.87	38.43
PRICE	92.50	10,940.45	2,589.21	2,986.96
LLP	-11.21	39.58	13.04	14.76
CAPR	6.25	23.29	14.89	3.12

Variable	Dummy 1 (%)	Dummy 0 (%)
Control Variable		
LOSS	6,22%	93,78%

Sample Observation 193 *Stated in Rp 1.000.000.000,00

TABLE IV
MULTIVARIATE REGRESSION RESULT

Variable		Model (1)		Model (2)	
		Coef.	p-Value	Coef.	p-Value
C		4.961976	0.000***	.9542752	0.000***
FVTPL	+	.0776220	0.001***		
AFS	+	.0713410	0.011**		
HTM	H1 +	.0506579	0.006***		
LR	+	-.0053916	0.858		
FVL1	H2 +			.0000200	0.001***
FVL2	+			.0000124	0.013**
SIZE	-	-.3744512	0.000***	-.0406088	0.000***
LOSS	-	-.2066005	0.346	-.0370591	0.002***
TURNOVER	-	-.0019103	0.007**	-.0001796	0.000***
PRICE	+/-	.0592875	0.303	.0241292	0.000***
LLP	+/-	.0072560	0.046**	-.0004494	0.000***
CAPR	-	-.0735671	0.000***	-.9542752	0.000***
Sample		216		216	
Adjusted R-squared		0.4153		0.5339	
F-Stat		16.27		28.49	
Prob. > F		0.000		0.000	

***Significance at 0,01 level **Significance at 0,50 level
*Significance at 0,1 level

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In both models, control variables SIZE and TURNOVER are all negatively and significantly associated with SPREAD, consistent with the previous literature and our predictions. The control variable LLP is not consistent, moreover, is positively and negatively, significantly associated with SPREAD, indicating that, in 2012 until 2014, investors are also concerned about the information quality of loan loss provisions. In terms of LOSS, consistent with the previous literature, the result shows that loss recognition can decrease bid–ask spread. Adjusted R- squares for Models 1 and 2 are 41.53% and 53.39%, respectively, suggesting that they are well specified.

V. DISCUSSION AND RECOMMENDATION

These analyses have focused on the information risk and uncertainty related to the valuation parameters for fair value implementation and fair value measurement on financial assets. Such risk is reflected in the information asymmetry component of bid–ask spreads. Financial instruments are categorized into four classifications as fair value through profit and loss, available for sale, held to maturity and loan/receivable in PSAK No. 55 (revised in 2011) should progressively decrease information asymmetry level and financial instruments designed as fair value levels 1, 2, and 3 in PSAK No. 60 (revised in 2010) should be progressively more illiquid and/or more opaque financial instruments to information asymmetry.

This research examines whether fair value implementation and measurement increase or decrease information asymmetry among Indonesia banks. Firstly, this research explores how traders respond to fair value implementation under PSAK No. 55 (revised in 2011) and finds that all fair value levels are significantly associated with bid-ask spread under PSAK No. 60 (revised in 201), and thus higher information costs and information risk. Category of fair value through profit (loss) and available for sale, which are measured based on fair value, have more positive and higher relation to information asymmetry rather than category of held to maturity and loan/receivable. Category of fair value through profit (loss) has a significantly most positive relation to information asymmetry caused by speculative activity of equity investor in capital market. This result is consistent with Hypothesis 1, which predicts a higher information risk for bank holding more speculative financial assets.

Level 3 financial asset, which are measured based on managerial internal models and assumptions, is not found on this research due to Central Bank of Indonesia Regulation which forbids banks to invest on unobservable investment. Nevertheless, level 2 financial assets, which are measured, based on observable non-active market securities, have the higher coefficient than level 1 financial asset, measured using market values for identical assets. The results are consistent with Hypothesis 2, which predicts a higher information risk for banks holding more opaque financial assets. The results suggest market makers act appropriately by increasing price sensitivity when they face uncertainty related to fair value amounts, implying that they extract information from the financial statements.

This research offers several implications for consideration. First for government, this research can give an appropriate direction for public policy on Indonesia's banking sector to achieve an effective and organized regulation to maintain Indonesia financial stability that orders bank to invest on observable and opaque financial asset for all equity investors in capital market. Second, for regulator of accounting standard, this research gives a description about PSAK No. 55 (revised in 2011) and PSAK No. 60 (revised in 2010) implementation related to information asymmetry among shareholders and can be a consideration for arrangement of upcoming policy and accounting standard related to fair value. One of implementation for considerable fair value regulation is to add policy about obligation to disclose type of valuation technique for each fair value measurement hierarchy for unobservable financial instruments following with disclose of internal assumptions on valuation process, moreover, if bank uses appraisal services to valuate fair value, so bank should mention who the appraisal is. IAI can add regulation about PSAK No. 60 (revised in 2010) to adjust inactive financial asset price in capital market using optional pricing model and discounted cash flow. Third, for bank, this research can be a source of information about the effect of fair value implementation on information asymmetry in banking sector. The understanding about its effect caused by fair value implementation can be a principle to implement risk management for more reliable fair value measurement process. Bank should maximize the utility of risk commissioner on monitoring risk related bank financial asset related with fair value.

Three future research avenues are suggested by this study. First, the next research can develop sample of observation to other industry not only bank. Second, the next research can use the availability of closing bid-ask price data by filling the empty period using optional pricing model. Third, the next research can add several moderating variables such as quality of external auditor, corporate governance, and structure of ownership.

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