

Earnings management and FAS 157

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SYNOPSIS: Statement of Financial Accounting Standards No. 157 (FAS 157), *Fair Value Measurements*, requires or permits all the US listed firms to measure and report their assets and liabilities in fair values using three levels inputs. Level 1 inputs are from the quoted prices in active markets, Level 2 is from the observable markets other than quoted prices, while Level 3 is based on the unobservable and firm-generated inputs. To test the research questions, we randomly select 70 Form 10Qs submitted by the US commercial banks for the quarter ended March 31 2008. First, we assess the impact on banks' assets and liabilities by adopting FAS 157. We find that 49 (70%) banks have adopted FAS 157. This represents 16% of the banks' total assets with a mean value of \$5,339 million. We also find that assets valued under FAS 157 are much greater than allowance and provision for loan losses, thus changes in the FAS 157 assets will significantly affect a bank's loss. Second, we evaluate the extent of adoptions of levels of inputs by the sector. In contrast to our expectations, we find that 72% adopts Level 2 input and assets classified under these levels are partially determined by earnings management incentive (firm size and profitability) and high leverage on asset substitutions. The results have implications to the accounting standard setters, banking sector and policy decision makers.

Key words: FAS 157, fair value measurements, commercial banks, provision for loan losses

Data Availability: All data used in this study are publicly available from the sources identified in the text.

INTRODUCTION

Has Financial Accounting Standards No. 157 (FASB 2008), *Fair Value Measurements* (FAS 157 hereafter) made huge impact on banks' assets and liabilities? Does the fair value measurement of these assets provide a new avenue for earnings management? This paper addresses these two research questions by randomly selected 70 Form 10Qs submitted by the US commercial banks. The purpose is to assess the extent and impact of banks' compliance with FAS 157. Secondly, we evaluate the associations between banks' characteristics and distributions of assets under different levels of fair value hierarchy stipulated by FAS 157.

FAS 157 became effective from November 15 2007, and by then, all the US listed firms are required or permitted to express their assets and liabilities¹ using fair values². The Statement provides the US listed firms a uniform definition for fair values, establishes a framework for measuring fair values, and expands measuring and disclosing of fair value measurements (paragraph 3). A fair value measurement assumes that firms exchange assets and liabilities in orderly manners between the market participants, and firms are required to determine the exit prices based on one of the three hierarchies of inputs (FAS 157, paragraph 18). In level 1, firms use the inputs from quoted prices in active markets. In Level 2, firms use the observable market inputs other than quoted prices, while in Level 3 firms use the unobservable and internally-generated inputs.

In 2008, the media used the waves of economic meltdowns as evidence to blame FAS 157 for requiring the borrowers, investors and firms, in particular banks, to measure and report their assets and liabilities at fair values. For example, Scannell (2008a) reports that banks and lawmakers have raised concerns that mark-to-market accounting is exacerbating the financial crisis by forcing firms to take big write-downs on thinly traded securities even if the underlying

¹ FAS 157 requires or permits fair value measurements for all the assets and liabilities except for share-based payments, software revenue recognitions and inventory pricing (see paragraphs 2 & 3).

² Fair value is 'the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date' (FAS 157, paragraph 5).

assets are not severely troubled (p 3).³ Mikolajczak (2009) reports a similar concern from the Congress that these accounting rules are accountable for increasing losses and write downs on bank balance sheets. Cox and Heales (2009) report that both Goldman Sachs and Deutsche Bank, proponents of fair value measurements, do not think the proposed changes in FAS 157 will improve financial reporting or investors' confidence and highlight inconsistencies and practical difficulties. The FAS 157 will in fact, widen the gap between accounting standards in the United States and the rest of the world (p. 1). Cox and Heales (2009) further argue that the timing of introducing FAS 157 leads to the possibility for the financial institutions to paint a rosier picture of their balance sheets in the midst of an already volatile period. Regulators have also expressed their concerns on whether such a fair value rule reflects the real value of assets. For instance, in September 2008, Mr. Bernanke, US Federal Reserve Chairman, told the Congress that the US should pay more than "fire-sale" prices for the toxic assets it would acquire under a proposed \$700 billion bailout plan. These fore-mentioned public concerns against FAS 157 have led to some public requests for the FASB to modify the implementation of FAS 157 or suspend it during the economic crisis (e.g., Sorkin, 2009). For instance, Rep. Frank echoed earlier comments from Federal Reserve Chairman Ben Bernanke to improve mark-to-market regulations (Mikolajczak, 2009). The rescue bailout plan the Congress drafted allows the SEC to suspend the fair value rule (Gordon and Bernard, 2008). Under the public pressure, FASB has recently relaxed accounting rules for banks on fair valuation of assets (Gordon, 2009). The new rule allows firms to value their assets at projected sale value in the future, rather than at the current price.

Before implementing FAS 157, the FASB has circulated the exposure draft on fair value measurements in 2006, but it has not received major complains or comments from the respondents⁴. Banks have indicated in their public filings that they do not expect compliance

³ Other reports include Holan. and Politifact (2008), Gordon (2008), Scannell (2008b) and Gordon and Bernard (2008).

⁴ FASB received altogether 73 written comments during the exposure period. Details of comments and Board's responses, refer to:

with the FAS 157 to have any material impact on the valuation process (Norris, 2008). All these claims and counter claim have prompted us to evaluate the real impact of FAS 157 on banks' approach on valuing their assets and liabilities. In addition, Reilly (2007) finds that in the banking sector, the biggest area of concern for FAS 157 is the different levels of inputs under which assets were valued. For instance, Level 3 assets made up about 10% or less of the overall financial assets at Goldman, Morgan, Lehman and Bear at the end of their fiscal second quarters of 2008, and these assets were valued on the firm-generated inputs (p. C1). We conjecture that more assets classification under level 1 (level 3) indicates less (more) earnings management, and we examine the determinants of the assets classification under these three levels.

We proceed by randomly select 70 Form 10Qs submitted by the US commercial banks for the quarter ended on March 31, 2008. We find that 49 (70%) banks have adopted FAS 157 in reporting their assets, accounted for 16% of the values of total assets for the samples. The mean value is \$5,339 million with a few banks dominating the average. Our evidence suggests that FAS 157 has a significant impact on banks' asset valuation. Interestingly, we find that a majority of the sample banks does not have any assets classified under level 3, while 72% of sample banks' FAS 157 assets are using Level 2 inputs. Furthermore, we assess the determinants of assets classification under the three levels of inputs of assets classifications. We expect level 1 (*TAL1%*) input is least subject to earnings management due to the input is based on the market valuations. Our result shows that large banks (*LGTA*) are associated with lower *TAL1%*. This means large banks have more incentives to manage earnings. This is because these banks have a higher political cost (Watt and Zimmerman, 1978). Secondly, better performing banks (in terms on *ROA*) are associated with a higher *TAL1%* since these banks have less incentives to hide their losses under the level 2 and level 3 inputs. Thirdly, banks with high leverage (*LEV*) are associated with higher *TAL1%* since asset substitution problem provides these banks with

incentives to invest in riskier projects. These results are robust after controlling for other determinants of FAS 157 asset classifications.

These results contribute to the body of knowledge on fair value measurements in the following manner. First, we find that FAS 157 has a significant impact of banks' asset valuation because assets represent the key items in a balance sheet. Thus, it is a legitimate concern for banks if FAS 157 leads to volatility in the asset valuations. Second, we find that level 2 (based on the observable market) inputs are much sought after by the preparers, in particular among the commercial banks, than the other two levels of input. This is in contradicts to Ryan's (2008) prediction of firms tend to use Level 3 inputs because of a lack of publicly available information. However, adoption of Level 2 inputs means that assets will be valued with some degrees of subjectivity, and may prompt for an avenue for earnings management. Third, we find evidence that earnings management might be a force behind the FAS 157 asset classification under the three levels of valuation inputs. This paper thus contributes to the literature on accounting choice as a response to Fields, Lys and Vincent's (2001) call for more efforts to provide evidence on the implications of accounting choices. Fourthly, with globalization and acceleration of adopting fair value measurements by firms across the border, our findings provide valuable inputs to both the U.S. and international accounting standard setters in understanding the impact and implications of FAS 157 disclosures and extending the deliberations on applying the frameworks.

The remainder of this paper is organized as follows. In the next section, we describe FAS 157, review relevant prior research, and develop hypotheses. Section 3, we outline the data selection process and provide for descriptive statistics analysis. In Section 4, we present the empirical results and discuss the implications, and we conclude the paper with discussions on the results and ways forward.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Asset classification under FAS 157

In September 2006, the Financial Accounting Standards Board (FASB) published FAS 157, *Fair Value Measurements*⁵. FAS 157 provides a coherent framework for applying fair value measurements and enhances disclosures about the nature and source of fair value measurements to increase consistency, reliability and comparability. The FASB feels that fair value information is a relevant measuring attribute for a firm's assets and liabilities⁶. However, in the absence of observed prices, this triggers fair value measurements unreliable due to intrinsic measurement errors or noise and management-induced errors or bias.

To help preparers report a reliable financial performance, FAS 157 introduces three level of fair-value hierarchy to prioritize the inputs for measuring fair values. More specifically, these broad levels help both the preparers determine the extent of reliability of the inputs to fair value measurements, and users to understand the level in which assets and liabilities being measured. Level 1 inputs are based on quoted prices in the active markets. Since a quoted price is a single primary agreed value for the fair value measurement, this eliminates judgment and information asymmetry between preparers and users. Level 2 inputs are observable market inputs other than quoted prices. In this level, firms derive the inputs directly from the observable, that is, quoted prices for similar assets or liabilities, or indirectly from corroborated by market inputs that is, based on correlations with the yield curve. This means that we expect the extent of reliability for

⁵ Unlike FAS 157, the International Accounting Standards Board (IASB) does not publish an International Financial Reporting Standards (IFRS) specifically for fair value measurements. In November 2006, the IASB issued a discussion paper on 'Fair value measurements' indicating that 'IFRSs already require some assets, liabilities and equity instruments to be measured at fair value in some circumstances. However, guidance on measuring fair value is dispersed throughout IFRSs and is not always consistent. The IASB believes that establishing a concise definition of fair value and a single source of guidance for all fair value measurements required by IFRSs will both simplify IFRSs and improve the quality of fair value information included in financial reports. The IASB therefore added this topic to its agenda in September 2005.' The IASB comments that 'consistently with its commitment to the convergence of IFRSs and US GAAP, the IASB decided to use the US standard as the starting point for its own deliberations.' The content of the IASB's discussion paper on fair value measurements is quite similar to FAS 157. Interested readers could access <http://www.iasb.org/News/Press+Releases/IASB+publishes+Discussion+Paper+on+fair+value+measurements.htm>

⁶ For example paragraph 217 (FAS 133) and paragraph C2 (FAS 157). There are claims that fair value may not be the most relevant measurement attributes. For example, one claim is that fair value may misrepresent management's intent, for example, to hold or owe an asset or a liability to its maturity. However, both Ryan (2008) and Ramesh and Graziano (2006) argue that fair value measurements allow shareholders to assess whether holding an asset or owing a liability is appropriate by providing timely value change information.

this level is lower than the Level 1 inputs. For Level 3 inputs, the firms use the internally generated estimations and assumptions. Ryan's (2008) prediction of firms tend to use Level 3 inputs due to a lack of publicly available information. The key distinction between Level 2 inputs and Level 3 inputs is whether inputs are observable.⁷ More specifically, the distinction between the two levels depends on verifiability of the fair values. This means that Level 3 inputs are subject to a highest degree of judgment, possible opportunity for earnings management and information asymmetry between preparers and users. Based on managerial incentives to manage earnings, we make the following hypothesis:

H1: Commercial banks are more likely to adopt level 3 input for measuring fair values.

Classifying assets, accounting choices and earnings management

Fields, Lys and Vincent (2001) define an accounting choice as “any decision whose primary purpose is to influence (either in form or substance) the output of the accounting system in a particular way, including not only financial statements published in accordance with GAAP, but also tax returns and regulatory filings, contracting, asset pricing, taxes, and regulations” (p.260). They find that managers make accounting choices to increase their bonuses but fail to document whether cash payouts have actually increased. Consistent with Fields et. al. (2001), banks use various instruments to impact its accounting outcome. For instance, Christie and Zimmerman (1994), Groff and Wright (1989) and DeAngelo (1988) report that take-over target managers have the incentives to classify assets under different levels of inputs based on their needs of gain or loss recognition, in particular using the income-increasing depreciation, inventory and investment tax credit methods than their surviving non-target surviving industry peers. Song

⁷ FAS 157 defines observable input as “market-corroborated inputs and that fair value measurements using market-corroborated inputs (within Level 2) should be distinguished from fair value measurements using unobservable inputs (within Level 3).” (Paragraph C82) However, Ryan (2008) speculates that in a swiftly changing market conditions and the recent collapsing subprime market, the distinction becomes blur between the Level 2 and Level 3 inputs.

(2008) provides direct evidence that, consistent with managers' motivation to use the fair value approach to report earnings greater than target and/or reduce loss positions in available-for-sale securities (p. 4).

Numerous studies have examined the managers' use of accounting discretion on earnings management (for example, Healy, 1985, DeAngelo, 1986, Jones, 1991, DeFond and Jiambalvo, 1994, Perry and Williams, 1994, Teoh, Welch, and Wong, 1998b, Kasznik 1999, and Hribar and Nichols, 2007). Jones (1991) uses a time-series model to estimate an expected or normal level of accruals, and the residual as a measure of the discretionary accruals. The result shows that firms manage earnings downwardly during the periods when import relief investigations occur. Warfield, Wild and Wild (1995) use the absolute value of the difference between current accruals and a five-year average of accruals. They conclude that managerial ownership is negatively associated with the unsigned discretionary accruals. Bergstresser and Philippon (2006) examine the relationships between using the equity-based compensation and earnings management. They find that equity-based compensation leads to a greater earnings management. This is because executives are motivated to manage earnings upwards and cash out by selling their shares at inflated prices. In sum, prior literature suggests that managers have incentives to use various instrument to manage earnings. FAS 157 might provide such an instrument through classifying assets into different levels. Further research has shown that banks' characteristics are associated with earnings management. For example, Watts and Zimmerman (1978) conclude that firm size is positively associated with political costs and banks have the incentives to manage their earnings. For banks, we expect the stakeholders in particular investors, keep a close scrutinize on the sector's earnings performance and returns, in particular during the economic crisis. The introduction of FAS 157 coincides with the economic downturns and many sectors, including banks, are facing severe public outrage for the gigantic losses. With this, we expect banks have the incentives to manage earnings using their total assets and liabilities (TAL) to mitigate the politic costs and associated losses. This means when banks evaluate their assets, many fall under the Level 1 input. We provide the following hypothesis in alternative forms:

H2a: large banks are associated with lower *TAL1*%.

We expect for banks that perform well will less likely engage in income-increasing earnings management (Becker, DeFond, Jiambalvo, and Subramanyam, 1998). More specifically, good-performing banks have less incentive to intentionally misclassify their assets into level 2 or 3 inputs. We use return on assets (*ROA*) to proxy for firm's performance and we expect the return on assets (*ROA*) to be positively associated with *TAL1%*. We provide the following hypothesis in an alternative form:

H2b: Better performing banks are associated with higher *TAL1%*.

Jensen and Meckling (1976) conclude that banks with higher leverage have stronger incentives to undertake risky projects. This means that banks that adopt level 1 input are having risky assets because these assets are subject to immediate and constant market volatilities. Those banks that adopt this strategy will assume to have high level of leverage, and are likely to carry more assets under level 1 input in their balance sheets. However, the debt-covenant theory stipulates that managerial incentive to avoid violating the lending agreements tend to motivate aggressive reporting (DeFond and Jiambalvo, 1994). This means managers in the high-leverage banks tend to avoid having their assets classified under the Level 1 input. Since banks are not subject to lending covenants as compared to banks in other sectors, we expect they do not have incentives to manage earnings upward to meet the covenant requirements. We use debt-to-equity ratio (*LEV*) to proxy for the leverage, and expect *LEV* to be positively associated with *TAL1%*. We provide the following hypothesis in the alternative form.

H2c: Banks with high leverage (*LEV*) are associated with higher *TAL1%*.

DATA AND DESCRIPTIVE STATISTICS

We extract information from the 10Q reports submitted by US commercial banks (SEC Code 6021) for the quarter ended March 31 2008. We confine to our data search to the first quarter of 2008 due to this is the first instant where compliance with FAS 157 is being enforced. Out of the 70 randomly selected banks, 49 (70%) banks have included FAS 157 in the fair value measurements in their quarterly reports. Also, press release of FDIC on September 25 2008 reveals only thirteen failed banks, out of forty since October 2000. This shows a strong support

and preparedness of the sector on meeting the requirements. We have no access as to why the remaining 30% of the banks are non compliance with the requirements. Future research may help solve the myth, and more importantly, claims by the media that compliance of FAS 157 led to banks' collapse are not justifiable. We may need to revisit this issue on relationships between compliance and banks' survivals using a longer term of investigations and any reaction on information asymmetrical.

RESULTS

Significance of FAS 157

As discussed previously, the banking industry has cried for relief from the FAS 157 measurement. Our data allows us to take a first-hand look at the economic significance of FAS 157 on the banking industry to assess whether the claims are legitimate. In Table 1, the mean value of total assets classified as level 1, 2, or 3 under FAS 157 fair valuation (*TAL*) is \$5,339 million, though the median is much lower at \$137 million. At the 75 percentile, *TAL* stands at \$362 million, indicating significant amount of assets under FAS 157 fair valuation especially for a few very large banks that are driving up the mean value. Relative to a bank's total asset, the mean of *TAL%* (*TAL* divided by total assets) is 16.70% and the median is similarly at 16.20%. The 25 percentile and 75 percentile of *TAL%* is 10.40% and 22.40%, respectively. These suggest that *TAL%* is normally distributed around 16%.

Furthermore, when we compare *TAL* to allowance for loan loss (*AFLL*) and provision for loan loss (*PFLL*), the mean value of *AFLL* and *PFLL* is \$352 million and \$131 million, respectively, while the median value of *AFLL* and *PFLL* is \$11 million and \$0.74 million. These are due to a few large banks dominating the mean values. Both mean and median of *AFLL* and *PFLL* are much less than these of *TAL*, suggesting that changes in *TAL* would exert more significant impact on a bank's income than that of loan losses. Consequently, evidence here suggests that FAS 157 had significant economic impact on banks' asset valuation and the adoption of FAS 157 is a legitimate concern for banks especially at this economic downturn.

Asset classification under FAS 157

Table 1 also shows the distribution of the classification of 3 levels of assets under FAS 157. *TAL1%* is the asset classified as level 1 divided by *TAL*, which is the total asset classified as

level 1, 2, &3 under FAS 157 fair valuation. $TAL2\%$ is the asset classified as level 2 divided by TAL . $TAL3\%$ is the asset classified as level 3 divided by TAL . Table 1 shows mean of $TAL1\%$, $TAL2\%$, and $TAL3\%$ to be 22%, 71.9%, and 6.1%, respectively. However, their median is 1%, 94.6% and 0%, respectively. This indicates that a majority of banks do not even have assets classified under level 3. Thus, we reject our hypothesis 1 that banks are more likely to classify assets under level 3. This result provides some evidence that banks are not resorting to level 3 for earnings management. This could happen either because managers are honest in complying with FAS 157 or because managers could use other levels of classification such as level 2 to manage earnings (and thus avoiding the public scrutiny associated with classifying assets as level 3). The surprising concentration of classifying assets level 2 does reflect managers' unwillingness to classify assets under level 1. We will explore managers' incentives to classify assets as level 1 in the next section.

Determinants of the Asset classification under FAS 157

We adopt a multivariate regression model to test the determinants of the classification of 3 levels of assets under the FAS 157. As discussed previously, assets that are classified as level 1 input is subject to less judgment and information asymmetry than those classified in level 2 and 3 inputs. More specifically, we use $TAL1\%$ as a the percentage of total FAS 157 assets classified as level 1 input, as the dependent variable and a higher $TAL1\%$ indicates less earnings management. As discussed in the hypothesis development, we expect firm size ($LGTA$) to be negatively related to $TAL1\%$ since large banks have incentive to manage their earnings due to their large political and agency costs (Watt and Zimmerman, 1978). We expect the return on assets (ROA) to be positively associated with $TAL1\%$ since good performing banks have less incentive to classify their losses into level 2 or 3 inputs. We also expect a firm's leverage to be positively associated with $TAL1\%$ as highly leverage banks have incentives to invest in riskier projects, consistent with the asset substitution problem.

We use the allowance for loan loss and provision for loan loss as control variables. We scale them by the assets and we expect them to be positively related to $TAL1\%$ due to their endogenous associations. Some banks' FAS 157 asset includes loans. $TAL1\%$ is more transparent and subject to less earnings management, thus in a bad year, a high $TAL1\%$ is likely to be positively associated with the allowance and provision for loan loss. We also use securities-

available-for-sale, operating cash flow, and net purchase of securities-available-for-sale as control variables to control for size of the firm's securities holding, the cash flow of the firm, and the change in the firm's securities holding. We provide no directional predictions on the coefficients of these variables.

In Table 2, we present the correlation analysis. We find that the percentage of total level 1 assets (*TALI%*) is negatively associated with the firm size (*LGTA*), and *TALI%* is not significantly associated with any of other variables.

Table 3 shows the regression results. The regression yields an adjusted R^2 of 23.74%, indicating the regression model explains a significant amount of the variations of the percentage of total FAS assets classified as level 1 (*TALI%*). As predicted, we find that large banks are associated with less percentage of FAS 157 assets classified as level 1. This is consistent with the view (Watt and Zimmerman, 1978) that large banks have the incentives to manage earnings due to the political costs. We also find a highly significant and positive coefficient for return on asset (*ROA*), suggesting that better performing banks classify less percentage of FAS 157 assets as level 1 input. This is consistent with our prediction that more profitable banks have less incentive to hide their losses to level 2 or 3 assets.⁸ In addition, we find leverage (*LEV*) to be positively associated with *TALI%*. This is consistent with our hypothesis that highly leverage banks invest more in risky projects due to asset substitution problem.

In terms of control variables, as predicted, we also find that allowance (*AFLL%*) and provision for loan loss (*PFLL%*) are positively associated with percentage of total FAS assets classified as level 1 (*TALI%*) input. We also find *SAFS%*, *OCF%*, and *CHGSAFA* are positively associated with *TALI%*, thus none of them carries any significant coefficient.

Other tests

⁸ Since Table 3 indicates that *ROA* is not significantly associated with either *AFLL%* and *SAFS%*, it does not come as a surprise that coefficient of *ROA* has a different direction from these of *AFLL%* and *SAFS%*.

Since *TAL1%* and *TAL2%* are significantly and negatively correlated. Using *TAL2%* as dependent variable yields results just the opposite of these of using *TAL1%*. This confirms that *TAL1%* is a good proxy for FAS 157 assets classification.

The results are qualitatively similar if we use percentage of total FAS 157 assets to total assets (*TAL%*) to replace the percentage of securities-available-for-sale to total asset (*SAFS%*) in the regression. This is due to the fact that a large part of total FAS 157 assets are securities-available-for-sale anyway.

CONCLUSIONS

Based on the content of 70 randomly selected Form 10Qs submitted by US commercial banks for the first calendar quarter of 2008, we made several important findings. First, we find that the adoption of FAS 157 has economically significant impact on banks' asset valuation and thus provide evidence on the legitimacy of the concern on applying FAS 157 at volatile market conditions. Second, we find that most assets are classified by banks as level 2 and very few assets are classified as level 3. This result suggests that managers are either complying with FAS 157 faithfully or managers are using other levels of classification as instruments to manage earnings. Finally, we find managers have incentives to classify fewer assets as level 1 when they have poor earnings, thus suggesting managers do discretionary classifying assets to meet its earnings management need. Third, we find managers have incentives to classify fewer assets as level 1 when they have large political costs and poor earnings, thus suggesting managers do discretionary classifying assets to meet its earnings management need. Finally, we find evidence that banks with high leverage are more likely to invest in assets with level 1 inputs, consistent with the asset substitution problem.

The findings contribute toward the literature on fair value measurements and consistent with other research, this study suffers from a number of limitations including it is based on US commercial banks. Future research could expand to incorporate larger samples or compare the findings across the sectors. It would be interesting to compare the extent of compliance and value relevance between the US banks and non-US banks, and between public listed and large banks in the US. Second, effects of disclosures are based solely on the first quarter of compliance. A longitudinal study could help identify the patterns and relevance of using the fair value measurements. Third, the existing variables could be extended to include governance issues like

board size, board composition, Big 4 versus non Big 4 and compositions of the audit committees. All these will certainly contribute toward the body of knowledge and further help discussions on measuring and reporting fair values.

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Table 1 Descriptive Statistics (n=49)

	TAL	TAL%	TAL1%	TAL2%	TAL3%	TA	LGTA	ROA	LEV	AFL	PFL	NI	SAFS%	OCF%	CHGSAFA%
MEAN	5,339	16.70%	22.00%	71.90%	6.10%	399,621	21.141	0.14%	90.45%	352	131.00	36.73	15.24%	0.15%	-0.01%
STD	31,123	8.50%	37.60%	39.50%	15.70%	243,218	1.665	0.15%	2.26%	2,105	849.00	178.54	8.93%	0.49%	1.00%
P25	76	10.40%	0.00%	60.10%	0.00%	495	20.020	0.06%	89.10%	4	0.20	0.47	8.30%	0.00%	-0.01%
MEDIAN	137	16.20%	1.00%	94.60%	0.00%	1,120	20.837	0.10%	90.70%	11	0.74	1.70	15.20%	0.20%	-0.01%
P75	362	22.40%	19.80%	100.00%	2.90%	2,298	21.560	0.20%	92.20%	20	2.12	2.90	19.80%	0.30%	3.00%

Variable Definition:

TAL(in million): total asset classified as level 1, 2, & 3 under FAS 157 fair valuation; TAL%: TAL divided by total assets;

TAL1%: asset classified as level 1 divided by TAL; TAL2%: asset classified as level 2 divided by TAL;

TAL3%: asset classified as level 2 divided by TAL; TA (in millions): total assets; LGTA: log value of total assets;

ROA: net income divided by total assets; LEV: total liability divided by total assets; AFL (in million): Allowance for loan loss;

PFL (in million): Provision for loan loss; NI (in million): net income; SAFS%: Securities-available-for-sale divided by total assets;

OCF%: operating cash flow divided by total assets; CHGSAFA: net purchase of securities-available-for-sale divided by total assets.

Table 2 Pearson Correlation Analysis (n=49)

	TAL1%	TAL2%	LGTA	ROA	LEV	AFL%	PFL%	SAFS%	OCF%
TAL2%	-0.918								
LGTA	-0.234	0.201							
ROA	0.212	-0.128	0.045						
LEV	0.131	-0.084	0.019	-0.129					
AFL%	0.114	-0.163	0.094	-0.547	0.020				
PFL%	0.066	-0.097	0.123	0.092	-0.092	0.087			
SAFS%	0.165	-0.031	-0.029	0.183	-0.010	-0.395	-0.015		
OCF%	0.117	-0.083	0.072	0.300	0.135	-0.117	0.062	0.050	
CHGSAFA	0.017	-0.014	0.162	-0.033	-0.027	-0.016	-0.068	0.224	0.227

Variable Definition:

TAL(in million): total asset classified as level 1, 2, & 3 under FAS 157 fair valuation; TAL%: TAL divided by total assets;

TAL1%: asset classified as level 1 divided by TAL; TAL2%: asset classified as level 2 divided by TAL;

TAL3%: asset classified as level 2 divided by TAL; TA (in millions): total assets; LGTA: log value of total assets;

ROA: net income divided by total assets; LEV: total liability divided by total assets; AFL (in million): Allowance for loan loss;

PFL (in million): Provision for loan loss; NI (in million): net income; SAFS%: Securities-available-for-sale divided by total assets;

OCF%: operating cash flow divided by total assets; CHGSAFA: net purchase of securities-available-for-sale divided by total assets.

Table 3: Determinants of Level 1 Asset (n=49)

	Coefficient (t-statistics)	P-value
Intercept	-2.870 (-1.26)	0.22
LGTA	-0.071 (-2.28)	0.03
ROA	121.580 (2.80)	0.00
LEV	4.080 (1.69)	0.09
AFLL%	67.280 (2.99)	0.00
PFLl%	0.002 (0.38)	0.70

SAFS%	0.888 (1.35)	0.18
OCF%	1.139 (0.10)	0.92
CHGSAFA	0.123 (0.38)	0.70
Adjusted R ²	23.72%	

Variable Definition:

TAL(in million): total asset classified as level 1, 2, & 3 under FAS 157 fair valuation; TAL%: TAL divided by total assets;

TAL1%: asset classified as level 1 divided by TAL; TAL2%: asset classified as level 2 divided by TAL;

TAL3%: asset classified as level 2 divided by TAL; TA (in millions): total assets; LGTA: log value of total assets;

ROA: net income divided by total assets; LEV: total liability divided by total assets; AFLL (in million): Allowance for loan loss;

PFIL (in million): Provision for loan loss; NI (in million): net income; SAFS%: Securities-available-for-sale divided by total assets;

OCF%: operating cash flow divided by total assets; CHGSAFA: net purchase of securities-available-for-sale divided by total assets.