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Fair value measurement and accounting restatements[☆]

Yi-Hung Lin^a, Steve Lin^b, James M. Fornaro^c, Hua-Wei Solomon Huang^d,*

- ^a Monash University, Australia
- ^b Florida International University, USA
- ^c SUNY at Old Westbury, USA
- ^d National Cheng Kung University, Taiwan



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ABSTRACT

This study investigates the association between accounting restatements and reporting different levels of fair value measurements as defined by SFAS No. 157. We find that firms with higher ratios of Level 3 fair value assets (i.e., financial assets which fair values are determined by unobservable, firm-generated inputs) to total assets are more likely to subsequently restate their financial statements. Further analysis shows that this association is driven by the restatements caused by errors and managerial manipulation. Overall, our results suggest that use of less reliable (Level 3) fair value measurements may reduce financial reporting quality.

1. Introduction

This study investigates the effect of fair value accounting on financial reporting quality. More specifically, we examine the relationship between accounting restatements and reporting different levels of fair value measurements as defined by Statement of Financial Accounting Standards No. 157, Fair Value Measurements (SFAS No. 157 hereafter). SFAS No. 157 defines fair value as 'the price that would be received to sell assets or paid to transfer liabilities in an orderly transaction between market participants at the measurement date'. SFAS No. 157 also introduces a fair value hierarchy that prioritizes the inputs that companies should use to measure fair values. The hierarchy consists of three broad levels of fair value measurements. Level 1 uses observable inputs from quoted market prices in active markets for identical assets or liabilities. Level 2 uses observable inputs from quoted market prices in active markets for similar assets or liabilities, quoted market prices for identical or similar assets or liabilities in inactive markets, and other market-corroborated inputs. Finally, Level 3 uses unobservable, firmgenerated inputs to estimate fair values.1

The effect of fair value accounting on financial statement quality is unclear ex ante. On one hand, fair value accounting could improve

financial statement quality by providing more price-relevant information for investors' decision making. On the other hand, fair value accounting largely relies on managerial discretion that could adversely affect financial statement quality. For instance, Level 3 fair values are estimated using management's own assumptions or expectations, and are therefore complex, discretionary, and difficult for auditors to verify. They may also contain significant measurement errors and induce managerial manipulation (Landsman, 2007; Penman, 2007; SEC, 2008; Song, Thomas, & Yi, 2010). Previous studies on the benefits of fair value accounting provide rather mixed results. For instance, Barth, Landsman, and Rendleman (1998) find that managers are able to use their private information to credibly report fair values. Aboody, Barth, and Kasznik (2006) and Bartov, Mohanram, and Nissim (2007), however, find that managers may manipulate fair value inputs for their own interest.

The CFA Institute also notes that "there are some limitations and implementation difficulties associated with the fair value measurement approach including measurement error" (SEC, 2008, 140–141).² Auditors and capital market participants have also been found to anticipate potential financial misstatements when firm managers disclose more Level 3 fair values, especially when the sluggish economy exacerbates

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^{*} Corresponding author.

E-mail address: z10009023@email.ncku.edu.tw (H.-W.S. Huang).

¹ For example, managers may estimate fair values using the discounted present values of future cash flows. This will require projected future cash flows, a Level 3 input, and other inputs, such as the credit-adjusted risk-free interest rate.

² The SEC indicates that changes in Level 3 fair values can have a significant influence on a firm's net income and equity. In its study on fair value accounting, the SEC (2008), 90) states "for the sample overall, the net unrealized loss related to Level 3 assets on a comparable nine-month basis was (\$61.2) billion, and the net unrealized loss related to Level 3 liabilities was (\$9.8) billion. The unrealized gains (losses) related to Level 3 assets ranged from a \$6.4 billion gain to a (\$12.9) billion loss."

the liquidity of certain financial instruments (Fiechter & Meyer, 2011).³ Hence, we predict a positive association between accounting restatements and reporting Level 3 fair values. Since Level 3 fair value measurements are subject to a greater risk of error from managerial estimation and manipulation compared to Levels 1 and 2, we also predict that the association between restatements and Level 3 fair values should be stronger than the association between restatements and Level 1 and 2 fair values.

In our paper, we consider accounting restatements as a proxy for financial reporting quality instead of accruals for two reasons. First, accruals and abnormal accruals are measured with errors (e.g., Hribar & Collins, 2002; Keung & Shih, 2014). Second, Level 3 fair value financial assets and liabilities are not directly related to accruals and therefore it is difficult to predict their association. We use a more clearcut design to investigate whether less reliable Level 3 fair values are associated with subsequent financial statement restatements, which we believe can better capture managerial errors and intention of manipulation without estimating abnormal fair values.⁴

Using fair value disclosures available in *Compustat* during 2008–2010, a period which partially overlaps with recent financial crisis, we examine and find that accounting restatements are positively associated with Level 3 fair value assets but are not associated with both Level 1 and 2 fair value assets. ⁵ We also find that the association between accounting restatements and Level 3 fair value assets is stronger than that between accounting restatements and Level 1 and 2 fair value assets.

We further investigate whether the positive association between accounting restatements and Level 3 fair value assets is driven by managerial estimation errors, manipulation, or both because the recent financial crisis prompted the use of Level 3 fair values and the potential for increased measurement errors and managerial manipulation. Accordingly, we classify accounting restatements into two groups, representing those caused by estimation errors (i.e., non-fraud related restatements) and those caused by managerial manipulation (i.e., fraud related restatements). Our results show that the positive association between Level 3 fair value assets and restatements is driven by the restatements caused by both errors and managerial manipulation, thereby diminishing the quality of financial reporting. This is an important finding because fair value measurements have become more prevalent in U.S. GAAP and International Financial Reporting Standards (IFRS).

This study contributes to the accounting literature in two specific ways. First, recent research on fraudulent financial reporting has largely focused on information asymmetry problems associated with fair value disclosures. In response to serious concerns expressed by U.S. and international legislators, regulators, and information users, this study investigates the

relationship between financial reporting quality (proxied by accounting restatements) and fair-value measurements. To the best of our knowledge, this is the first study to document a positive association between accounting restatements and reporting Level 3 fair values. Second, we also find this positive association is driven by the restatements that are related to measurement errors and managerial manipulation (i.e., fraud). Our results provide consistent evidence to address the concerns expressed by various stakeholders over the reliability of fair value measurements, particularly those requiring managements' discretion.

This paper proceeds as follows. Section 2 provides background information, reviews prior research related to this study, and develops testable hypotheses. Section 3 describes the data and sample selection process. Section 4 discusses our research design. Empirical results are reported in Section 5. We present supplemental analysis in Section 6. Section 7 presents the robustness tests, and Section 8 concludes.

2. Background and hypothesis development

2.1. Background

The FASB issued SFAS No.157, Fair Value Measurements, in September 2006 in order to establish a coherent framework for applying fair value measurements, provide enhanced disclosures about the nature and the source of such measurements, and increase overall consistency and comparability. SFAS No. 157 also introduces a fair value hierarchy that classifies the inputs used to measure fair values into three broad Levels, and Level 3 inputs are clearly subject to more serious information asymmetry problems between managers and users of financial statements. Although the purpose of reporting fair value measurements by input Levels in a hierarchical structure is to allow users to assess their relative reliability, managerial discretion over the inputs used to measure fair values could induce opportunistic activities.

In practice, firms restate their financial statements for a variety of reasons, including previously misstated Level 3 fair values, Appendix I shows an example of an accounting restatement by Kohlberg Capital Corporation (KCAP) due to materially overstated Level 3 fair values. As a Business Development Company, KCAP notes that it is required to invest primarily in the debt and equity of non-public companies for which there is little, if any, market-observable information. As a result, most of KCAP's investments at any given time will most likely be deemed Level 3 investments. The company overstated its Level 3 financial assets in 2008 by \$53,716,082 (around 12% of total Level 3 assets),6 which were subsequently restated the following year. In its 2009 annual report, KCAP claimed that the overstated Level 3 fair values were errors in the application of accounting for the fair values of the company's illiquid investments, which affected the calculation of the company's net asset value and net income. This example demonstrates that Level 3 fair values can certainly have a significant impact on financial statement quality. Accordingly, this study investigates the statistical association between Level 3 fair values and accounting restatements using a large sample.

2.2. Related literature and hypothesis development

Plumlee and Yohn (2010) find that some restatements are attributed to transaction complexity or intentional manipulation. ⁷ We argue that

³ Deloitte (2009) notes a significant increase in the magnitude of assets valued using unobservable inputs during periods of market uncertainty. More specifically, Deloitte (2009) analyzes the SEC filings of 21 banks and finds that 85.7% of these banks reported an increase in the fair values of Level 3 financial assets between the first quarter of 2008 and the first quarter of 2009. Moreover, 10 of the 21 banks reported more than a 50% increase in the fair values of Level 3 financial assets during the same period. However, there is no significant change in reported financial liabilities.

⁴ In robustness tests, we also employ alternative proxies for accounting quality, including small earnings increases and earnings surprises (Ashbaugh et al., 2003). Results using alternative accounting quality measures are generally consistent with those using financial statement restatements.

⁵ Previous studies have largely ignored financial liabilities because they are relatively immaterial compared to financial assets (e.g. Song et al., 2010). Song et al. (2010) document that fair value assets account for 15% of the total assets whereas fair value liabilities only account for 0.4% of the total liabilities of their sample firms. This study has considered both financial assets and liabilities in most empirical tests. We find that results for financial liabilities are generally insignificant (especially for Level 3 fair value financial liabilities) and sometimes difficult to interpret. For example, there are several cases where Level 1 fair value liabilities are positively associated with restatements. We believe that this finding is likely caused by the fact that Level 1 financial liabilities are generally infrequent and small in amount compared to financial assets. Finally, our results are generally consistent with or without financial liabilities.

 $^{^6}$ The overstated amount of Level 3 financial assets of \$53,716,082 equals the 2008 original reported amount of \$502,037,413 (\$384,486,111 + \$56,635,236 + \$4,387,978 + \$56,528,088) less the restated amount of \$448,321,331 (\$353,859,007 + \$34,640,000 + \$5,087,512 + \$54,734,812) in 2009. The overstated percentage of 12% equals \$53,716,082 over \$448,321,331.

⁷ Plumlee and Yohn (2010) classify each restatement into one of the following four causes: (1) an internal company error; (2) intentional manipulation; (3) transaction complexity, or (4) some characteristic of the accounting standards. They find that restatements are more likely to relate to intentional manipulation and transaction complexity.

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