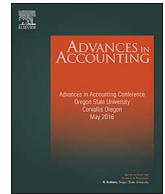




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## Fair value disclosure of pension plan assets and audit fees

Philip K. Hong<sup>a,\*</sup>, Seokyoung Hwang<sup>b</sup><sup>a</sup> School of Accounting, Central Michigan University, USA<sup>b</sup> School of Business, The City University of New York, College of Staten Island, USA

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## ABSTRACT

Effective December 2009, FAS 132(R)-1 expands the prior disclosure requirements on pension plan assets by requiring firms to disclose the fair value inputs and measurements of pension assets. This study examines whether the different level of pension asset fair value inputs required under FAS 132(R)-1 affects audit fees, and investigates whether more expanded fair value disclosure requirements alone can have any impact on audit fees that proxy for auditors' efforts. During our sample period from 2009 to 2010, we find supporting evidence that audit fees are an increasing function of Level 3 fair value assets that are more subjective. In addition, in a difference-in-difference test, we find evidence supporting our hypothesis that audit firms increase their audit fees after the adoption of FAS 132(R)-1, especially for the client firms that have more Level 3 pension assets. Considering that auditors have had access to the detailed fair value measurement information even before 2009, our results imply that a more detailed *disclosure requirement* on pension plan assets alone can affect auditors' audit efforts and audit fees accordingly.

## 1. Introduction

Pension assets in a defined benefit plan have been measured and disclosed with fair value in firms' annual reports. However, only after the newly revised reporting standard, FAS 132(R)-1 *Employers' Disclosures about Postretirement Benefit Plan Assets*, (or ASC 715), The U.S. Security Exchange Commission (SEC) registrant firms are required to expand the disclosure requirements of pension assets with fair market values effective December 15, 2009. More specifically, FAS 132(R)-1 requires plan-sponsoring firms to provide more detailed fair value information including fair value hierarchy and valuation methods in 10K filings. Taking advantage of these disclosure requirement changes, we investigate whether 1) the different hierarchy structure of pension assets has a different impact on audit fees, a proxy for auditors' audit efforts, and 2) a more detailed disclosure requirement itself can affect audit fees.

A long line of auditing research finds that client attributes, such as complexity and inherent risk, are vital determinants of audit fees because more complex clients tend to necessitate more difficult and time-consuming audits (Charles, Glover, & Sharp, 2010; Hay, Knechel, & Wong, 2006). However, there is scant research on auditors' response to a firm's additional disclosure of fair value assets alone. Moreover, it is not clear whether the composition of fair value assets would affect the inherent risk of audit, and therefore require more audit work.

For example, Goncharov, Riedl, and Sellhorn (2014) find that

auditors charge lower fees for fair valued properties compared to properties valued at historical cost because impairment tests are required for properties valued at historical cost, but not for those valued at fair values. Therefore, fair value accounting does not necessarily increase auditors' efforts or audit fees.

On the other hand, some prior studies document that compared to the fair value of assets using quoted prices in the active market (Level 1) and significant other observable inputs (Level 2), fair value measurements using unobservable inputs (Level 3) are more susceptible to managerial discretion (Jaggi, Winder, & Lee, 2010; Song, Thomas, & Yi, 2010). In addition, Ettredge, Xu, and Yi (2014) also argue that Level 3 assets rely more on subjective assumptions and estimates, and therefore audit fees increase with fair value assets with more Level 3 inputs in bank holding company audits.

The PCAOB (AU section 328) requires auditors to obtain sufficient audit evidence to provide reasonable assurance for fair value measurements and disclosures, including testing management's process of valuation and developing independent estimates. Since fair value measurements with less observable inputs are inherently imprecise, auditors' additional audit work is centered on Level 3 pension assets when fair value inputs are disclosed. We expect that this additional audit work required for firms that have more Level 3 pension assets would lead to an increase in audit fees.

Using hand-collected fair value inputs of pension assets from the SEC's EDGAR database surrounding the effective year of FAS 132(R)-1,

\* Corresponding author.

E-mail addresses: [hong1p@cmich.edu](mailto:hong1p@cmich.edu) (P.K. Hong), [seokyoung.hwang@csi.cuny.edu](mailto:seokyoung.hwang@csi.cuny.edu) (S. Hwang).<https://doi.org/10.1016/j.adiac.2018.01.002>Received 24 June 2017; Received in revised form 12 January 2018; Accepted 15 January 2018  
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we first examine whether auditors' audit efforts are increasing with the asset value of fair value inputs. We find all three levels of fair value pension assets are positively associated with audit fees. However, when we control for each type of fair value assets in the same regression, we find supporting evidence that audit fees are an increasing function for Level 3 fair value pension assets only, but not for Level 2 or Level 1 fair value pension assets.

In addition, when we break down these Level 3 pension assets by specific asset types - equity, cash and cash equivalents, debt, and alternative assets, we find that their relationship to audit fees becomes more positive when Level 3 assets are only composed of equity or alternative assets that are harder to evaluate.

Under FAS 132(R)-1 disclosure requirements, we can isolate the disclosure effect of fair value assets from the complexity of pension assets on audit fees because pension assets have been measured and made available to auditors even prior to the adoption of FAS 132(R)-1. In other words, during the pre-FAS 132(R)-1 period, only the total fair value of pension assets was disclosed to the public through 10K reporting, while the detailed information on fair value inputs was not disclosed but still available to auditors. This lack of detailed disclosure of pension assets made it hard for the users of financial statements to access the risk and reliability associated with the reported fair value of pension assets prior to FAS 132(R)-1. However, the detailed information on fair value measures of pension assets that was only available to the auditors became available to the public under FAS 132(R)-1. This accounting disclosure rule change provides a unique setting where we can investigate the *disclosure* effect of fair value measurement of pension assets with the adoption of FAS 132(R)-1 on audit fees with a pre- and post-FAS 132(R)-1 sample, spanning years from 2005 to 2010, which is the focus of our second hypothesis.

To measure the impact of the new disclosure requirement on audit fees, we compare the changes in audit fees in the pre- and post-FAS 132(R)-1 periods for firms holding more Level 3 assets to the changes in audit fees for the control firms over the same period (i.e., firms holding Level 3 assets less than the sample median Level 3 assets). We find that audit firms increase their fees for client firms with higher percentages of Level 3 pension assets than the other control firms in the post-FAS 132(R)-1 period. This finding is consistent with our interpretation that a simple disclosure requirement of more detailed fair value of pension assets can increase auditors' audit efforts in their attempt to reduce audit risk or/and litigation risks associated with detailed disclosures.

This study makes a couple of important contributions to accounting literature. First, while there is a long line of research that examines audit fee determinants, there are very few that examine the association between audit fees and fair value estimates in the pension plan. One notable exception is Cullinan (1997). Our finding of a positive association between audit fees and Level 3 assets is consistent with Cullinan (1997), but we extend his study by looking at the fair value inputs of pension assets and comparing the effects of each input. In addition, by focusing on single-employer pension plans with S&P500 firms we complement Cullinan (1997) which investigates audit fees with multi-employer pension plans composed of many small sponsoring firms.

More importantly, pension assets have been measured with fair values and the fair value of pension assets information was available to auditors even in the pre-FAS 132(R)-1 period. Therefore, our research design enables us to investigate the effect of a simple fair value disclosure of pension assets on audit fees with the adoption of FAS 132(R)-1. Findings of this study should help standard setters evaluate how a simple reporting rule change can affect auditor's audit efforts associated with pension plans.

Section 2 provides a background of fair value disclosure of pension assets, related literature review, and hypotheses. Section 3 presents research design used to test our hypotheses. Sections 4 and 5 describe the data, and empirical results. Section 6 summarizes our findings with concluding remarks.

## 2. Background, literature review and hypotheses development

### 2.1. Background of the disclosure about fair value hierarchy of pension assets

The FASB has required firms to report pension plan assets on a fair-value basis since the adoption of FAS 87 *Employers' Accounting for Pensions* that took effect in December 1985. However, the fair value disclosure of pension assets under the FAS 87 does not require the disclosure of specific measurements and inputs for the fair value hierarchy. In an effort to improve reporting transparency associated with pension plan assets, the FASB adopted FAS 132(R)-1, effective as of December 15, 2009. Under FAS 132(R)-1, firms are required to disclose not only specific categories of pension assets but also information about fair value hierarchy of pension assets with the valuation techniques used to develop fair value measurements.<sup>1</sup>

More specifically, the FASB requires firms to disclose fair value measurements using quoted prices in active markets for identical assets or liabilities (Level 1), significant other observable inputs (Level 2), and significant unobservable inputs (Level 3) (FASB, 2008). The FAS 132(R)-1 also requires a reconciliation of the beginning and the ending balance of Level 3 pension assets. These disclosure requirements for fair value pension assets are similar to the disclosure about fair value measurements under FAS 157, *Fair Value Measurements*. However, the FASB clearly notes that FAS 157 should not be applied for pension assets because gains or losses on pension assets do not directly affect net income due to the provision under FAS 87 called the corridor approach.<sup>2</sup> While the disclosures about fair value measurements of pension assets are not within the scope of FAS 157, the definition for fair value inputs and valuation techniques used for measurements in FAS 157 are applied to the fair value measurements of pension assets. It is worthwhile to note that under the FAS 157, observable inputs are required to reflect market data obtained from sources independent of the reporting entity, and unobservable inputs are required to reflect reporting entity's own assumptions and estimates (FASB, 2006). For example, when a plan-sponsoring firm uses 'the present value measurement' defined in FAS 157 for its Level 3 pension assets, the measurement includes the firm's own assumptions and estimates, such as estimates of future cash flow and its timing, and discounted value.

Overall, while the newly required disclosure about the fair value measurements of pension assets is expected to facilitate users of financial statements to assess the reliability of fair value measurements, at the same time, the new disclosure requirements may increase the audit risks that result in more audit efforts in auditing pension plan assets.

### 2.2. Literature review and hypothesis development

Audit fees are often analyzed by the audit risk model: inherent risk, control risk, and detection risk. Charles et al. (2010) document that based on the audit risk model, auditors are to increase the level of audit efforts to reduce the detection risk when client firms have more accounts and disclosures that are more likely to be manipulated or misstated. They also find a strong relationship between audit fees and risk of material misstatement, and conclude that audit fees are adjusted in response to risks faced by the auditors. Prior studies also find a positive

<sup>1</sup> The FASB provides the example of major categories as follows: cash and cash equivalents, equities (segregated by industry type, company size, and investment objective), debt securities (segregated by issuers), asset-backed securities, structured debt, derivatives (segregated by type of underlying risk in the contract), investment funds (segregated by type of fund) (FASB, 2008).

<sup>2</sup> FAS 87 requires recognition of gains and losses in excess of 10% of the greater amount between the projected benefit obligation and the fair value of pension assets. In addition, the excess over the 10% is amortized over the average remaining expected service period of active employees (FASB, 1985).

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