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# The relevance of the value relevance literature for financial accounting standard setting: another view<sup>☆</sup>

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## Abstract

This paper explains that value relevance research assesses how well accounting amounts reflect information used by equity investors, and provides insights into questions of interest to standard setters. A primary focus of financial statements is equity investment. Other uses of financial statement information, such as contracting, do not diminish the importance of value relevance research. Value relevance questions can be addressed using extant valuation models. Value relevance studies address econometric issues that otherwise could limit inferences, and can accommodate and be used to study the implications of accounting conservatism. © 2001 Elsevier Science B.V. All rights reserved.

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## **1. Introduction**

This paper offers a view of the relevance of value relevance research for financial accounting standard setting that contrasts with the view offered in Holthausen and Watts (2001) (hereafter HW). A key conclusion of HW is that value relevance research offers little or no insight for standard setting. As active participants in value relevance research and standard setting, our purpose is to clarify the relevance of the value relevance literature to financial accounting standard setting. Because we are discussants of HW, we only address issues raised in that paper. In particular, HW is limited in scope to a discussion of the relevance of the value relevance literature for financial accounting standard setting; it does not comprehensively review the value relevance literature. Accordingly, our discussion is similarly limited. A key conclusion of our paper is that the value relevance literature provides fruitful insights for standard setting.

This paper also clarifies several misconceptions articulated in HW regarding value relevance research. In particular, we make six points, which contrast with statements in HW. First, value relevance research provides insights into questions of interest to standard setters and other non-academic constituents. Although there is no extant academic theory of accounting or standard setting, the Financial Accounting Standards Board (FASB) articulates its theory of accounting and standard setting in its Concepts Statements. Using well-accepted valuation models, value relevance research attempts to operationalize key dimensions of the FASB's theory to assess the relevance and reliability of accounting amounts. Second, a primary focus of the FASB and other standard setters is equity investment. Although financial statements have a variety of applications beyond equity investment, e.g., management compensation and debt contracts, the possible contracting uses of financial statements in no way diminish the importance of value relevance research, which focuses on equity investment.

Third, empirical implementations of extant valuation models can be used to address questions of value relevance, despite the simplifying assumptions underlying the models. Fourth, value relevance research can accommodate conservatism, and can be used to study the implications of conservatism for the relation between accounting amounts and equity values. In fact, value relevance research is a basis for establishing that some financial accounting practices are perceived by equity investors as conservative. Fifth, value relevance studies are designed to assess whether particular accounting amounts reflect information that is used by investors in valuing firms' equity. Because "usefulness" is not a well-defined concept in accounting research, value relevance studies typically do not and are not designed to assess the usefulness of accounting amounts. Sixth, econometric techniques can be and are applied to mitigate the effects of common econometric issues arising in value relevance studies that otherwise could limit the validity of the inferences drawn from such studies.

The paper proceeds as follows. Section 2 discusses the hypotheses tested in value relevance research and summarizes what we have learned from the subset of value relevance research related to fair value accounting. Section 3 explains how value relevance research addresses questions of interest to accounting standard setters, in addition to a broad constituency that includes academic researchers, financial statement preparers and users, and other policy makers. Section 4 discusses key research design issues associated with value relevance research, including choosing between approaches examining levels of and changes in value, selection of variables to be included in the estimation equation, and interpreting measurement error. Section 5 summarizes and provides concluding remarks.<sup>1</sup>

## 2. Value relevance hypotheses and findings

### 2.1. Testing relevance and reliability

In the extant literature, an accounting amount is defined as value relevant if it has a predicted association with equity market values.<sup>2</sup> Although the literature examining such associations extends back over 30 years (Miller and Modigliani, 1966), the first study of which we are aware that uses the term “value relevance” to describe this association is Amir et al. (1993).<sup>3</sup>

Academic researchers are the primary producers and intended consumers of value relevance research.<sup>4</sup> Their primary purpose for conducting tests of value

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<sup>1</sup>When making reference to extant research we frequently cite studies we have authored. We do so because we feel more comfortable interpreting and explaining motivations for our own work rather than the work of others. Our discussion addresses issues raised in the various drafts of HW. Thus, any lack of direct correspondence between our discussion and the final version of HW is unavoidable.

<sup>2</sup>Throughout we use equity market values and share prices interchangeably. Scaling by number of shares outstanding is a research design issue that we do not specifically address.

<sup>3</sup>Beaver (1998, p. 116), Ohlson (1999), and Barth (2000) provide formal definitions that are closely related to the one above. The key commonality in the definitions is that an accounting amount is deemed value relevant if it has a significant association with equity market value. These definitions make no mention of standard setting motivations and, thus, in contrast to the definition in HW, the value relevance literature is not limited to studies motivated by questions of interest to standard setters. Because HW and, therefore, we focus on the relevance of the value relevance literature for standard setting, this definitional distinction does not bear on the discussion in this paper.

<sup>4</sup>Because value relevance research is intended primarily for an academic audience, non-academic constituents likely need assistance in interpreting the studies' implications for questions of interest to them. The need to facilitate this translation process is reflected in the designation of an academic seat on both the FASB and the International Accounting Standards Board. It also motivates many of the FASB's interactions between it and the academic community (Beresford and Johnson, 1995), and motivates academics to summarize their research in practitioner journals.

relevance is to extend our knowledge regarding the relevance and reliability of accounting amounts as reflected in equity values. Equity values reflect an accounting amount if the two are correlated.<sup>5</sup> Relevance and reliability are the two primary criteria the FASB uses for choosing among accounting alternatives, as specified in its Conceptual Framework. The FASB's Conceptual Framework is set forth in Statements of Financial Accounting Concepts (SFAC) Nos. 1 through 7, which articulate the FASB's objectives and criteria to guide its standard setting decisions. Under SFAC No. 5 (FASB, 1984), an accounting amount is relevant if it is capable of making a difference to financial statement users' decisions; an accounting amount is reliable if it represents what it purports to represent.<sup>6</sup> Because the Conceptual Framework sets forth the FASB's objective criteria for evaluating accounting amounts, research needs only to operationalize the criteria, and not determine them.

Value relevance as defined in the academic literature is not a stated criterion of the FASB. Rather, tests of value relevance represent one approach to operationalizing the FASB's stated criteria of relevance and reliability.<sup>7</sup> Value relevance is an empirical operationalization of these criteria because an accounting amount will be value relevant, i.e., have a predicted significant relation with share prices, only if the amount reflects information relevant to investors in valuing the firm and is measured reliably enough to be reflected in share prices.<sup>8</sup> Only if an accounting amount is relevant to a financial statement user can it be capable of making a difference to that user's decisions. Note that under SFAC No. 5 information does not have to be new to a financial statement user to be relevant. That is, an important role of accountants is to summarize or aggregate information that might be available from other sources. Note also that the concepts of value relevance and decision relevance differ. In particular, accounting information can be value relevant but not decision relevant if it is superseded by more timely information.

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<sup>5</sup>Ball and Brown (1968) recognizes that examining equity share price behavior is an effective way to study investment behavior for large groups of investors. Moreover, using equity prices removes the effects of idiosyncratic investor behavior that could confound analysis of a particular standard's effects. Although studies examining investment behavior of individual investors could provide insights relevant to standard setters, in its Concepts Statements, the FASB makes no direct mention of individual investors, in contrast to what is implied in HW. Rather, the Concepts Statements refer to investors and creditors as groups of financial statement users.

<sup>6</sup>SFAC No. 5 notes there are several dimensions of relevance and reliability. Dimensions of relevance include feedback value, predictive value, and timeliness. Dimensions of reliability include representational faithfulness, verifiability, and neutrality.

<sup>7</sup>See Barth et al. (1998c) and Aboody et al. (1999), among others, for examples of other approaches.

<sup>8</sup>This statement is subject to the power of the empirical test and conditional on the estimating equation being properly specified.

Value relevance tests generally are joint tests of relevance and reliability. Although finding value relevance indicates the accounting amount is relevant and reliable, at least to some degree, it is difficult to attribute the cause of lack of value relevance to one or the other attribute. Neither relevance nor reliability is a dichotomous attribute, and SFAC No. 5 does not specify “how much” relevance or reliability is sufficient to meet the FASB’s criteria. In addition, it is difficult to test separately relevance and reliability of an accounting amount.

By design, the FASB’s Conceptual Framework is stated in broad terms and is not context-specific. Nonetheless, the Conceptual Framework, with context added in particular financial accounting standards, leads to tests of specific null and alternative hypotheses regarding relevance and reliability. Value relevance studies use various valuation models to structure their tests, and typically use equity market value as the valuation benchmark to assess how well particular accounting amounts reflect information used by investors. The tests often focus on the coefficients on the accounting amounts in the estimation equation. For example, some studies test whether the coefficient on the accounting amount being studied is significantly different from zero with the predicted sign (e.g., Barth, 1994a, b; Barth et al., 1996; Eccher et al., 1996; Nelson, 1996).<sup>9</sup> Rejecting the null of no significance or unpredicted sign is interpreted as evidence that the accounting amount is relevant and not totally unreliable. Other studies test whether the estimated coefficient on the accounting amount being studied differs from those on other amounts recognized in financial statements (e.g., Barth et al., 1998b; Aboody et al., 1999). Rejecting the null that the coefficients are the same is interpreted as evidence that the accounting amount being studied has relevance and reliability that differ from recognized amounts.

Another group of studies tests whether the coefficient on an accounting amount differs from its theoretical coefficient based on a valuation model (e.g., Landsman, 1986; Barth et al., 1992). Rejecting the null is interpreted as evidence that the accounting amount under study fails to reflect accurately the economic characteristics of the underlying construct it purports to measure. Others studies test specific predictions relating to the magnitude of the coefficient derived from a model of relevance and reliability (e.g., Barth, 1991; Choi et al., 1997). The objective of these tests is to measure the accounting amount’s reliability.

Many of these studies also incorporate alternative hypotheses that focus on the effects of management discretion on coefficient estimates (e.g., Barth et al., 1991, 1996; Muller, 1999). For example, some of these studies predict that discretion reduces reliability and, thus, attenuates coefficient estimates. Other studies predict that signalling effects increase or reverse the sign of otherwise

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<sup>9</sup>See Lys (1996), Skinner (1996), and Lambert (1996) for discussions of value relevance research and the economic interpretations of estimated coefficients.

predicted coefficients (e.g., Beaver et al., 1989; Beaver and McNichols, 1998; Beaver and Venkatachalam, 2000). It is important to note that value relevance studies take as given some model of capital market equilibrium and, therefore, typically do not test hypotheses relating to how the capital markets operate. As with all research studies that assume an equilibrium pricing model, inferences from value relevance research depend on the descriptive validity of the pricing relation (see Section 4.1).<sup>10</sup>

## 2.2. Findings: what have we learned?

This section summarizes what we have learned from the subset of value relevance research related to fair values as the basis for accounting amounts. We summarize this subset because fair value accounting is a primary focus of a substantial number of value relevance studies, and has been a major focus of the FASB.<sup>11</sup> Although our summary is not exhaustive, it serves to illustrate what we have learned from value relevance research.

One set of value relevance studies focusing on fair values relates to pensions and other postretirement obligations (OPEB). A fundamental question relating to pensions and OPEB is whether pension assets and liabilities and OPEB liabilities are perceived by investors as assets and liabilities of the firm. Findings from studies examining these questions indicate that they are. However, the studies also find that these assets and liabilities are priced differently from other recognized assets and liabilities, and their pricing multiples tend to be smaller (Landsman, 1986; Amir, 1993). These findings are consistent with pension and OPEB assets and liabilities being less reliably measured than other assets and liabilities.

A related question addressed by this research is which of the available alternative measures of pension assets and liabilities most closely reflects the

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<sup>10</sup> Although many value relevance studies test predictions relating to coefficients, some studies focus on the proportion of variance in share prices explained by accounting amounts, i.e.,  $R^2$ . In some studies, e.g., those addressing relative value relevance of competing measures (e.g., Beaver et al., 1982; Beaver and Landsman, 1983), comparisons of  $R^2$  naturally arise. However, whether  $R^2$  is an important issue in a particular study depends upon the research question being addressed. The discussion in Section 2.2 focuses on studies testing hypotheses regarding valuation coefficients.

<sup>11</sup> Fair value accounting is a longstanding major agenda item of the FASB. Statement of Financial Accounting Standards No. 33 (FASB, 1979), which required supplemental disclosure of current cost and constant dollar estimates of tangible nonfinancial assets, can be viewed as an initial attempt at fair value accounting. More recently, the FASB has focused its fair value accounting efforts on financial instruments (SFAS Nos. 105, 107, 114, 115, 118, 119, 125, 133, and 138, and Preliminary Views, FASB, 1990a, 1991, 1993a, 1993b, 1994a, 1994b, 1996, 1998, 1999, 2000). Other topics of current interest to accounting academics and practitioners include global harmonization of accounting standards, cash flows versus accruals, and recognition versus disclosure (see Barth, 2000), as well as accounting for business combinations, including goodwill, consolidations, asset impairment, and liabilities, particularly those associated with long-lived assets.

underlying assets and liabilities of the firm. Barth (1991) compares the relevance and reliability of these alternative measures and finds that the fair value of pension assets measures the pension asset implicit in share prices more reliably than the book values of pension assets calculated under Accounting Principles Board Opinion No. 8 (APB, 1966) and Statement of Financial Accounting Standards (SFAS) No. 87 (FASB, 1985a). Relating to pension liabilities, Barth (1991) finds that the accumulated and projected benefit obligations measure the pension liability implicit in share prices more reliably than the vested benefit obligation and the book value of the pension liability under SFAS No. 87. Relating to OPEB liabilities, Choi et al. (1997) finds that the accumulated postretirement benefit obligation is marginally value relevant and measures the OPEB liability implicit in share prices less reliably than pension obligations disclosed under SFAS No. 87 measure pension liabilities.

Relating to pension and OPEB expense, other studies address questions regarding the effects of differential riskiness and persistence of pension and OPEB costs and their components (e.g., Barth et al., 1992; Amir, 1996). Finding the components have predictable pricing differences suggests that disaggregated costs are potentially more informative to investors than aggregate costs. These studies find that, consistent with predictions that pension cash flows are less risky than other cash flows, pension and OPEB costs have larger absolute pricing multiples than other components of earnings. Relating to the components of pension cost, consistent with predictions, Barth et al. (1992) finds that the transitory pension cost component, the deferred return on plan assets, has a smaller pricing multiple than other more permanent cost components, i.e., service cost, interest cost, and the realized return on plan assets. The amortization of the transition asset or liability, which has no permanent earnings implications, has a zero pricing multiple.<sup>12</sup> Amir (1996) tests predictions relating to components of OPEB cost and finds that the components also have pricing multiples that differ from each other. In particular, as with pension cost, the amortization of the transition liability has a zero pricing multiple.

Another set of value relevance studies addresses questions relating to fair values of debt and equity securities, particularly those held by banks and insurance companies (e.g., Barth, 1994a, b; Ahmed and Takeda, 1995; Bernard et al., 1995; Petroni and Wahlen, 1995; Barth et al., 1996; Eccher et al., 1996; Nelson, 1996; Barth and Clinch, 1998). The fundamental question these studies

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<sup>12</sup>This finding was of interest to the FASB in developing OPEB disclosures. Despite the fact that the FASB does not ordinarily cite academic research in its standards, in SFAS No. 106 (FASB, 1990b), paragraph 341, the FASB states that “some studies of the pension disclosures required by Statement 87 have suggested they are valuable for the information provided.” In addition, at the FASB’s request, one of the authors of Barth et al. (1992) presented its findings to the FASB and its staff while the FASB was deliberating SFAS No. 106. Unlike SFAS No. 87, SFAS No. 106 requires separate disclosure of this amount.

address is whether fair values of these securities are reliably estimated. The studies consistently find that investors perceive fair value estimates for these securities as more value relevant than historical cost amounts. Some studies also find that the reliability of the securities' fair value estimates varies predictably across types of securities with the extent of expected fair value estimation error. In particular, they find that thinly traded securities, which have more fair value estimation error than more actively traded securities, evidence less reliability. Finally, some studies address the question of whether the asset fair value estimates and fair value securities gains and losses are equally reliable. In particular, Barth (1994a, b) finds that fair value estimation error is exacerbated for securities gains and losses, which are based on changes in fair values, relative to estimation error associated with fair values themselves. In fact, the estimation error in securities gains and losses can be substantial enough to eliminate its value relevance.

Another set of value relevance studies addresses questions relating to fair value estimates of bank loans. Reliability of loans fair values is questionable because bank managers who report them assert that the estimates' purported lack of reliability is sufficient to fail the FASB's reliability criterion. Contrary to bankers' assertions, Barth et al. (1996) finds that investors perceive fair values of bank loans as reflecting underlying values with more relevance and reliability than historical cost amounts, although Eccher et al. (1996) and Nelson (1996) do not find this. Because bank managers have incentives to exercise their discretion in estimating loan fair values, some studies address whether exercise of this discretion reduces the estimates' reliability. Barth et al. (1996) finds evidence consistent with discretion reducing reliability in that pricing multiples on loan fair values are predictably lower for banks with lower regulatory capital. However, management discretion in estimating loan fair values does not completely eliminate their value relevance. In contrast, Beaver and Venkatachalam (2000) finds that pricing multiples on the discretionary component of loan fair values are higher than those on the non-discretionary component, which is consistent with a signalling motivation for the discretionary behavior (Beaver et al., 1989).

Another set of value relevance studies addresses questions relating to fair value estimates of derivatives. As with all financial instruments, a fundamental question these studies address is whether derivative fair value estimates are reliable. However, the reliability of derivatives' fair values is particularly questionable because estimation technology and markets for these instruments are only developing. The studies find that investors perceive derivatives' fair values as reflecting underlying economic amounts with more precision than their notional amounts (e.g., Venkatachalam, 1996). However, Wong (2000) shows that the estimation error inherent in derivatives' fair values permits notional amounts to convey incremental information.



The fair value accounting value relevance literature also addresses questions relating to non-financial intangible assets. Some studies test whether historical costs related to purchased or internally developed intangible assets reflect the intangible assets' values. The alternative hypothesis of these amounts not reflecting the assets' values is plausible because intangible asset costs do not necessarily bear any relation to their values, except for purchased intangibles at the date of purchase. These studies generally find that costs of intangible assets, e.g., capitalized software and goodwill, are relevant to investors and reflect intangible asset values implicit in share prices with some reliability (e.g., Jennings et al., 1993; Aboody and Lev, 1998; Chambers et al., 1999). Other studies find that research and development and advertising expenditures are perceived by investors as capital acquisitions, presumably relating to technology assets and brands, and that bank core deposits are perceived by investors as assets of the firm (e.g., Abdel-khalik, 1975; Hirschey and Weygandt, 1985; Bublitz and Ettredge, 1989; Landsman and Shapiro, 1995; Barth et al., 1996; Eccher et al., 1996; Lev and Sougiannis, 1996; Healy et al., 1997).

Because fair values of intangible assets are not disclosed under US Generally Accepted Accounting Principles (GAAP), studies investigating the characteristics of intangible asset fair values focus on disclosures under GAAP of other countries where asset revaluations are permitted, i.e., the UK and Australia, or on estimates of fair values obtained from other public sources, such as those published by brand valuation experts (e.g., Barth et al., 1998b; Barth and Clinch, 1998; Higson, 1998; Kallapur and Kwan, 1998; Muller, 1999). As with the literature focusing on financial instruments, these studies generally address the question of whether fair value estimates are reliable. Typically, the studies assume that current asset values are relevant to investors. Fair value estimate reliability for intangible assets is of particular concern because, in most cases, no market exists for these assets. Thus, the fair value estimates cannot be determined by reference to market prices, as often they can be for financial instruments. Rather, the estimates often are determined by management or appraisers selected by management, exacerbating the potential for estimation error, intentional or unintentional.

These studies find that available estimates of intangible asset values reliably reflect the values of the assets as assessed by investors in that the estimates have a significantly positive relation with share prices. This finding holds for a variety of revalued intangible assets and brands. These studies also find that discretion does not completely eliminate value relevance for intangible assets with revalued amounts determined by companies' boards of directors, rather than outside appraisers, and for revalued intangibles or brand value estimates made by firms with incentives to exercise discretion in determining the estimate, e.g., firms with high debt-to-equity ratios.

Some studies also address the question of whether fair value estimates of tangible long-lived assets are reliable. As with intangible assets, the reliability

of these estimates is open to question because typically no market for these assets exists and, thus, the estimates are determined by management and are prone to estimation error. One set of studies addressing this question focuses on current cost and constant dollar estimates of tangible assets provided under SFAS No. 33. These studies generally fail to find value relevance, although some find value relevance in particular settings, suggesting that the asset values are not always reliably estimated (e.g., Beaver and Landsman, 1983; Beaver and Ryan, 1985; Bublitz et al., 1985; Murdoch, 1986; Bernard and Ruland, 1987; Haw and Lustgarten, 1988; Hopwood and Schaefer, 1989; Lobo and Song, 1989). One likely explanation for the lack of reliability is the exercise of management discretion in determining the estimates; unbiased estimation error is another.

Another set of studies addressing the question of whether fair value estimates of tangible long-lived assets are reliable focuses on asset revaluations under UK or Australian GAAP (e.g., Brown et al., 1992; Whittred and Chan, 1992; Cotter, 1997; Barth and Clinch, 1998; Lin and Peasnell, 1998; Aboody et al., 1999). These studies generally find that revalued asset amounts are relevant and estimated with at least some reliability. Although discretion or unbiased estimation error appears to play a role in reducing the value relevance of value estimates disclosed under SFAS No. 33, it does not completely eliminate the value relevance of tangible asset revaluations.

### 3. Non-academic constituents of value relevance research

In this section, we first discuss why value relevance research is of potential interest to non-academic constituents, particularly standard setters. In doing so, we then clarify some of the misconceptions in HW about the relevance of value relevance research for standard setting.<sup>13</sup>

#### 3.1. *Why is value relevance research of interest to standard setters?*

Value relevance research is of potential interest to a broad constituency comprising not only academic researchers, but also standard setters such as the FASB and the International Accounting Standards Board (IASB), other policy makers and regulators such as the Securities and Exchange Commission (SEC) and the Federal Reserve Board, firm managers, and financial statement users, including financial and information intermediaries. Value relevance research questions often are motivated by an aspect of a broad question raised by these non-academic constituents.

For example, when it issued SFAS No. 107, the FASB was concerned with questions such as: Are SFAS No. 107 disclosures useful to financial statement

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<sup>13</sup>Section 4 clarifies misconceptions in HW relating to value relevance research designs.

users incremental to items already in financial statements? Are fair value estimates, especially those relating to loans, too noisy to disclose? Academic research generally avoids such normative questions because they require a more comprehensive analysis than is possible in a typical academic study. Instead, value relevance research provides insights regarding answers to these questions by asking questions such as: Do SFAS No. 107 fair value estimates provide significant explanatory power for bank share prices beyond book values? Evidence relating to this question can update standard setters' beliefs about the relevance and reliability of fair value estimates. Not surprisingly, there are differing opinions regarding what constitutes an interesting and addressable research question, and different questions result in selection of different research designs.

Studies addressing questions of interest to a particular non-academic constituent often are of interest to other non-academic constituents. For example, Barth et al. (1996) examines the value relevance of financial instruments' fair value estimates disclosed under SFAS No. 107. Even though Barth et al. (1996) does not specify a non-academic constituent, one can interpret the study's primary non-academic constituent as being the FASB. However, the study's findings are of obvious interest to financial statement preparers, i.e., bank managers, bank analysts, and regulators of financial institutions because Barth et al. (1996) examines specific contentions regarding the inability to estimate accurately loans' fair values. As another example, in examining the value relevance of investment securities, Barth (1994a, b) specifically mentions the FASB as the primary non-academic constituent for the research. However, again the findings are of obvious interest to financial statement preparers, i.e., bank managers, bank analysts, and regulators of financial institutions.<sup>14</sup>

Non-academic constituents, including the FASB, find a variety of research topics and approaches informative in their activities.<sup>15</sup> For example, because only one-half of the studies cited by the FASB in its Research Supplements are

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<sup>14</sup>As evidence of interest in Barth (1994a) and Barth et al. (1996) by bankers and their investors, a summary of each is published in *Bank Accounting & Finance*, a publication of Institutional Investor, Inc. (Barth, 1994b; Barth et al., 1997). Evidence of the FASB's interest in value relevance research is, in part, reflected in the first two FASB Research Supplements, which summarize published academic accounting research articles "that address a relevant FASB issue and that contain conclusions that could be useful in our [i.e., the FASB's] decision-making process" (FASB Research Supplement, June 29, 1999; see also FASB Research Supplement, September 30, 1999). One-half of the studies cited in these Research Supplements are value relevance studies (Vincent, 1997; Aboody and Lev, 1998; Pfeiffer, 1998; Harris and Muller, 1999). Evidence of bank regulators' interest is reflected in Jackson and Lodge (2000), published by the Bank of England.

<sup>15</sup>See Leisenring and Johnson (1994) and Beresford and Johnson (1995) for descriptions of how the FASB finds academic research to be informative for evaluating the ex post effects of accounting standards and for gaining insight into potential effects of new standards. Both articles emphasize the role of academic research in the FASB's activities.

value relevance studies, obviously the other half are not (Botosan, 1997; Hirst and Hopkins, 1998; Barth et al., 1998c; Sengupta, 1998). As another example, research addressing bankruptcy prediction and bond ratings is of potential interest to bank managers and bank regulators (e.g., Beaver, 1966; Altman, 1968; Pinches and Mingo, 1973; Kaplan and Urwitz, 1979; Iskandar-Datta and Emery, 1994; Barth et al., 1998a).

Although findings from the value relevance literature often have implications for issues of interest to non-academic constituents, value relevance studies typically do not draw normative conclusions or make specific policy recommendations. In fact, several studies explicitly provide caveats that policy inferences cannot be drawn. For example, Barth (1991) states, “The focus in this research is on relevance and reliability of the alternative measures for investors’ use. The definitions of relevance and reliability are complex and judgmental, and may not be fully captured in their operationalization in the research design.” As another example, Barth et al. (1998b) notes that “Because brand values likely are relevant to investors, finding that estimates of brand values are reflected in share prices and returns calls into question concerns that estimates of brand values are unreliable. Whether their reliability is sufficient to warrant financial statement recognition is left to accounting standard-setters to determine.” Drawing policy implications from academic research is typically not possible because the studies generally do not incorporate all of the factors the FASB must consider in promulgating standards, e.g., complex social welfare judgments.

### *3.2. Misconceptions in HW relating to standard setting relevance*

HW criticizes value relevance research as being neither necessary nor sufficient for standard setters’ decision making. Although value relevance research is neither necessary nor sufficient for standard setting, this does not diminish its relevance to standard setters. No single value relevance research study claims to be either necessary or sufficient for standard setting. Moreover, taken as whole, the value relevance literature should not be viewed as and is not intended to be necessary or sufficient input for standard setting. Value relevance cannot be a necessary condition for standard setters because equity investors are not the only users of financial statements. Value relevance cannot be a sufficient condition for standard setters because they must make social welfare tradeoffs that cannot be captured by value relevance. Although use of the terms “necessary” and “sufficient” conditions is appropriate in the context of logic and formal mathematical proofs, it is not appropriate in the context of empirical evidence designed to affect conditional probabilities where probabilities equal to zero or one rarely, if ever, obtain. Value relevance research is designed to provide evidence to accounting standard setters that can update their prior beliefs about how accounting amounts are reflected in

share prices and, thus, can be informative to their deliberations on accounting standards.

The value relevance literature should not be and is not intended to be viewed as the sole source of information for any constituent, academic or non-academic. However, this is not a shortcoming of value relevance research. The extent and pervasiveness of the value relevance literature in the leading academic accounting journals, as HW's reference lists document, as well as the adaptations of several of the studies in professional journals and the FASB Research Supplements, are testimony to its perceived contribution to academic research and relevance to accounting practice.

HW also criticizes value relevance research because it focuses on equity investors, who are not the only users of financial statements. Of course other uses of financial statements exist beyond equity investment, e.g., management compensation and debt contracting.<sup>16</sup> Thus, research relating directly to management compensation and debt contracting also can inform standard setting (Watts and Zimmerman, 1986).<sup>17</sup> Contrary to the assertion in HW, value relevance research does not assume an accounting measure's role in non-equity investment uses of financial statements is necessarily captured by its association equity market value. More importantly, the possible contracting uses of financial statements in no way diminish the importance of value relevance research. The FASB was created in 1972 as the accounting standard setting successor to the Accounting Principles Board, with delegated authority from the SEC. The SEC's authority derives from the Securities Act of 1933, which was enacted as a result of the stock market crash of 1929 to protect investors from misleading and incomplete financial statement information necessary to make informed investment decisions. Although the SEC is concerned about equity and debt investors, the dominant focus of the SEC and, thus, the FASB is on equity investors. Moreover, a current focus of the IASB is acceptance of its standards by the SEC so that non-US entities can register equity securities on US stock exchanges.

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<sup>16</sup> However, general purpose financial statements are not designed explicitly for these purposes. The objectives of financial reporting by business enterprises as stated in SFAC No. 1 (FASB, 1978) relate to general purpose external financial reporting. Therefore, financial statements are not intended to apply directly to management compensation contracts. Although external users of financial statements include creditors, creditors often are concerned with liquidation values. But, a fundamental assumption underlying general purpose financial statements is that the firm is a going concern. Thus, although creditors may be able to obtain from financial statements some information about firm value in liquidation, it is indirect (Barth et al., 1998a, b).

<sup>17</sup> Obviously, research addressing these questions also is neither necessary nor sufficient for standard setting. But, as with value relevance research, this should not be construed as a criticism of this research.

HW further criticizes value relevance research because it makes no attempt to predict actions the FASB will take when setting accounting standards. As noted above, the objective of value relevance research as it relates to standard setting implications is to provide evidence that can inform the FASB's deliberations, not to prescribe or predict FASB actions or decisions. Although the FASB's Conceptual Framework offers testable hypotheses relating to the FASB's decision-making criteria, the obvious complexities arising from social welfare and other real world considerations with which the FASB must deal result in the Conceptual Framework not being a theory in the sense that researchers and others could predict the FASB's standard setting decisions. To our knowledge, there is no academic theory of accounting that derives a demand for accounting information as arising from equilibrium forces and provides a mapping of accounting information into share prices. As a result, there is no academic theory of standard setting that describes how standards should be optimally determined.<sup>18</sup> Nonetheless, findings from value relevance research are inputs to the FASB's decision-making process. For example, the finding that net pension obligations are obligations of the firm lends support to the view that pension assets and liabilities should be recognized as assets and liabilities in firms' financial statements.

Finally, it is important to note that value relevance studies do not attempt to estimate firm value. This is the objective of fundamental analysis research (e.g., Penman, 1992; Frankel and Lee, 1998), which HW refers to as "direct equity valuation" research. Value relevance research that provides insights to accounting standard setters corresponds to what HW refers to as "inputs-to-equity valuation" research. The focus of value relevance research on particular accounting amounts mirrors the FASB's focus on individual assets and liabilities or components of earnings, not on the value of the firm as a whole. Although both types of studies use share prices as a valuation benchmark, their differing objectives result in testing different hypotheses and using different specifications of the estimating equations. In fundamental analysis studies, estimating equations include all variables that can help explain current or predict future firm value, including those not yet reflected in financial statements. For example, fundamental analysis research is not concerned with whether information relevant to valuing the firm appears in financial statements or can otherwise be obtained. However, the information included in financial statements, not all available information, is the primary concern of the FASB. In value relevance studies, estimating equations selectively include variables to learn about the valuation characteristics of particular accounting amounts. For example, studies typically condition inferences regarding the

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<sup>18</sup> If and when such a unified theory is developed that conflicts with the FASB's Conceptual Framework, undoubtedly subsequent academic research will incorporate its implications for research questions and designs.

accounting amount being studied on financial statement amounts, consistent with the FASB's primary interest. Because of these contrasting differences, we believe that HW's conclusion that "widespread use of the inputs-to-valuation theory in standard setting will generate the same result as use of the direct valuation theory in standard setting" is without basis. Section 4.2 below develops this point in the context of a study examining financial instruments' fair values.

#### **4. Research design issues**

In this section, we discuss the choice of valuation model and research design issues relating to its implementation raised in HW. The implementation issues we address include estimation of the regression in price levels or returns, the selection of conditioning variables, and the role of measurement error.

##### *4.1. Choice of valuation model*

A primary research design consideration for value relevance research is the selection of the valuation model that is used in the tests. This section addresses points raised in HW relating to the role of perfect and complete markets, concepts of permanent earnings and market efficiency, the effects of economic rents, nonlinearities, asset separability and saleability, and conservatism, and the need for identification of an optimal accounting system.

Currently, a frequently employed model is that based on Ohlson (1995) and its subsequent refinements (e.g., Feltham and Ohlson, 1995, 1996; Ohlson, 1999, 2000). The Ohlson model represents firm value as a linear function of book value of equity and the present value of expected future abnormal earnings. The model assumes perfect capital markets, but permits imperfect product markets for a finite number of periods. With additional assumptions of linear information dynamics, firm value can be re-expressed as a linear function of equity book value, net income, dividends, and other information. Ohlson (1995) shows that balance sheet-based and earnings-based valuation models represent the two extreme cases resulting from limiting assumptions regarding the persistence of abnormal earnings. The Ohlson model does not depend on a concept of permanent earnings or asset and liability values; the model is expressed in terms of accounting earnings and equity book value. Thus, empirical implementations using the Ohlson model do not require specifying a link between accounting amounts and economic constructs such as permanent earnings.

The Ohlson model, as with all models, is based on simplifying assumptions that permit parsimonious representations of the complex real world. Consistent with this, it is a partial equilibrium model that takes the accounting system as given. As HW points out, it does not derive an optimal accounting system. To do so would require deriving a general equilibrium in a multi-person, regulatory context.<sup>19</sup> However, although none of the valuation models explicitly derives an optimal accounting system or even a demand for accounting information, this does not preclude use of such models to assess the value relevance of accounting amounts and to provide insights relevant to standard setters, as HW claims. By analogy, even though the capital asset pricing model does not include a role for financial intermediaries, this does not preclude financial intermediaries from viewing as relevant the risk-return predictions and evidence derived from that model.<sup>20</sup>

HW criticizes value relevance research for being based on a valuation model that does not include the possibility of economic rents. However, a key feature of the Ohlson model and its extensions (e.g., Feltham and Ohlson, 1996) is that economic rents, i.e., returns in excess of the cost of capital for a finite number of periods, are captured by the persistence parameter on abnormal earnings as well as by other information. Although economic rents can be viewed within the Ohlson framework as being reflected in the persistence of abnormal earnings, rents also can be reflected in the model by including the present value of the future cash flows attributable to those rents—incremental to those cash flows attributable to recognized assets—as a component of equity book value. In fact, many intangible assets, e.g., customer lists, brand names, core deposit intangibles, and research and development, are attributable to economic rents.

HW also criticizes value relevance research for being based on a linear, rather than nonlinear, valuation model. However, although the Ohlson model represents firm value as a linear function of equity book value and abnormal earnings, the persistence of abnormal earnings enters into the model nonlinearly. That is, for given levels of equity book value and abnormal earnings, marginal differences in persistence are not associated with constant marginal differences in equity value. Studies that permit valuation coefficients to vary cross-sectionally or across components of equity book value and abnormal earnings are explicit attempts to control for nonlinearity, and can be

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<sup>19</sup>The Ohlson model assumes clean surplus. Although modeling dirty surplus as arising from an equilibrium model of accounting standard setting is potentially interesting, it is not a question addressed by value relevance research. However, empirical research indicates that adjusting for dirty surplus, which can be large for some firms, has negligible effects on estimates or inferences (Hand and Landsman, 2000).

<sup>20</sup>See Bernard (1995), Lundholm (1995), Dechow et al. (1999), Morel (1999), Myers (1999), Lo and Lys (2000), and Ohlson (2000) for a more complete discussion of issues relating to empirical implementation of the Ohlson model.



viewed as being implicitly based on the nonlinearity in abnormal earnings in the Ohlson model. Many empirical studies adopt such methodologies (e.g., Barth et al., 1992, 1996, 1998a; Burgstahler and Dichev, 1997; Aboody et al., 1999; Barth et al., 2000).

The Ohlson model yields a particular form of nonlinearity in the valuation equation. However, because perfect and complete capital markets and the discounted cash flow model are assumed, the resulting valuation relation is linear in discounted cash flows. There is no well-accepted model of equity valuation in imperfect and incomplete markets. Thus, value relevance research uses perfect and complete market models, e.g., the Ohlson model, as a basis for tests, but often makes modifications to estimating equation specifications to incorporate potential effects of nonlinearities in the particular setting being examined. For example, Barth et al. (1992) permits coefficients on non-pension earnings components to vary by industry, risk, and taxpayer status to determine whether its inferences relating to pension cost coefficients are robust to these forms of nonlinearity. Barth et al. (1998a) permits coefficients on earnings and equity book value to vary with financial health and industry membership. Permitting coefficients to vary cross-sectionally with these factors relaxes the linearity assumption in a particular way, and maintains linearity within each partitioning.

HW expresses concern that value relevance research assumes assets of the firm are additively separable and saleable and, with market incompleteness, they may not be. Lack of separability is likely to be particularly true for assets for which active markets do not exist. For example, active markets exist for many financial instruments, resulting in financial instruments being additively separable from other assets and, thus, separable from the firm. However, for many intangible assets active markets do not exist and, hence, intangible assets may not be additively separable from other assets or separable from the firm and saleable. Lack of additive separability and saleability for a particular asset in no way implies it is not an asset of the firm and, thus, does not pose any particular problems for value relevance research. Note that separability and saleability are not criteria in the FASB's definition of an asset. In SFAC No. 6 (FASB, 1985b), an asset is defined as "probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events... That is, assets may be acquired without cost, they may be intangible, and although not exchangeable, they may be usable by the entity in producing or distributing other goods or services." Also, to the extent that assets under study are not separable from other assets of the firm, the regression coefficients on the assets under study, which might not be separable from other assets of the firm or from the firm itself, capture the incremental effect on firm value of the assets under study, i.e., there is no "double counting."

HW states that conservatism undermines what can be learned from value relevance research. However, valuation models used in value relevance research can accommodate and be used to assess the effects of accounting conservatism.<sup>21</sup> For example, the Ohlson (1995) model reflects in the abnormal earnings term both unrecognized assets and assets with fair values in excess of book value. Subsequent refinements of the Ohlson model explicitly model the effects of conservatism (Feltham and Ohlson, 1995, 1996). Thus, extant valuation models provide a basis for examining the empirical implications of conservative accounting. Empirical value relevance studies directly incorporating conservatism and assessing its effects on the relation between accounting amounts and firm value include Stober (1996), Barth et al. (1999), and Beaver and Ryan (2000). More generally, many empirical studies seek to explain why equity market value exceeds equity book value. These studies, including those discussed in Section 3 that examine the value relevance of fair value estimates and intangible assets, can be viewed as examining conservatism in accounting. One reason that fair value estimates and intangible assets currently are not recognized in financial statements is that the FASB is concerned about the reliability of such amounts.<sup>22</sup> Thus, conservatism can be a by-product of applying the FASB's reliability criterion, and not necessarily the result of an explicit objective that accounting be conservative.

Value relevance research need only assume that share prices reflect investors' consensus beliefs. Investors' consensus beliefs are of interest because of the extensive literature, beginning with Ball and Brown (1968), documenting that share prices impound quite accurately the valuation implications of publicly available information. With the assumption that share prices reflect investors' consensus beliefs, resulting inferences relate to the extent to which the accounting amounts under study reflect the amounts implicitly assessed by investors as reflected in equity prices. Value relevance research does not require assuming market efficiency.<sup>23</sup> That

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<sup>21</sup> Value relevance research relating to conservatism typically does not seek to explain or predict the existence of conservatism. If this were the research objective, it is likely the researcher would select a different research design.

<sup>22</sup> It is interesting to note that HW cites Basu (1997), a value relevance study, as evidence that accounting is conservative. Basu (1997) is a value relevance study because it examines the association between earnings, an accounting amount, and equity market value. Basu (1997) adopts a returns framework because timeliness is a key dimension of the research question it addresses (see Section 4.2.1). It seems inconsistent for HW, on the one hand, to assert that value relevance research is fraught with conceptual and methodological problems and, as a result, cannot inform standard setting and, on the other hand, to cite value relevance research and present its own value relevance evidence to support the inference that accounting is conservative, a characteristic of accounting amounts of obvious interest to standard setters.

<sup>23</sup> Some hypotheses tested in value relevance studies do require assuming market efficiency. In particular, assuming market efficiency is necessary in tests of whether estimated coefficients on accounting amounts differ from theoretical benchmarks derived from a valuation model based on economic constructs. See Section 4.2.3.

is, the research need not assume that equity market values are “true” or unbiased measures of the unobservable “true value” of equity, or that they reflect unbiased measures of unobservable “true” economic values of firms’ assets and liabilities or income generating ability.<sup>24</sup> With the further assumption of market efficiency, the resulting inference relates to the extent to which the accounting amount under study reflects the true underlying value.<sup>25</sup>

## 4.2. Model implementation

### 4.2.1. Price levels or returns

Value relevance research examines the association between accounting amounts and equity market values. This suggests testing whether accounting amounts explain cross-sectional variation in share prices. For the most part, valuation models that form the basis for tests in the value relevance literature are developed in terms of the level of firm value (e.g., Miller and Modigliani, 1966; Ohlson, 1995).<sup>26</sup> Examining changes in share prices, or returns, is an alternative approach to assessing value relevance, where the precise specification of the valuation equation depends on the valuation model adopted (see, e.g., Ohlson, 1995). Selection of which approach to use depends jointly on the hypotheses dictated by the research question and on econometric considerations (Landsman and Magliolo, 1988).

The key distinction between value relevance studies examining price levels and those examining price changes, or returns, is that the former are interested in determining what is reflected in firm value and the latter are interested in determining what is reflected in changes in value over a specific period of time. Thus, if the research question involves determining whether the accounting amount is timely, examining changes in value is the appropriate research design choice. However, non-academic accounting constituents are interested in a wide variety of questions, most of which do not involve timeliness. For example, the FASB identifies timeliness as an “ancillary aspect of relevance” (SFAC No. 2, FASB, 1980). Thus, limiting research questions to those relating

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<sup>24</sup> For example, Barth (1994a) refers to “true” variables as those amounts implicit in share prices as a means of assessing measurement error in the accounting amounts being studied. The amounts implicit in share prices are not assumed to be unbiased and error-free measures of economic assets or liabilities; they represent the benchmarks against which measurement error is assessed. Typically, in measurement error models, the benchmark amounts are labeled as “true,” and the amounts under study are assumed to be measured with error relative to the benchmark amounts. See Section 4.2.3 for further discussion of measurement error in value relevance research.

<sup>25</sup> Although the interpretation of results differs depending on whether market efficiency is assumed, note that there is no way to verify whether equity prices or accounting amounts equal “true” values because true values are unobservable.

<sup>26</sup> A limited number of studies base their tests on price-level versions of the capital asset pricing model, which is developed in terms of stock returns (Litzenberger and Rao, 1971; Bowen, 1981).

to timeliness severely limits the set of value relevance research questions that can be addressed.<sup>27</sup>

Because price levels and price change approaches address related but different questions, failure to recognize these differences could result in drawing incorrect inferences. For example, Easton et al. (1993) and Barth and Clinch (1998) address the value relevance of asset revaluations under Australian GAAP. Both studies find a significant association between the level of revaluation reserves and share prices, but a weak association between the change in the valuation reserves and returns. Australian GAAP permits considerable discretion in the timing of revaluing assets. As a result, Easton et al. (1993) appropriately conclude that asset revaluations are value relevant but not timely. Had the asset revaluation studies only estimated returns specifications, they might have concluded erroneously that asset revaluations are valuation irrelevant.

Econometric concerns associated with specifications based on price levels are the subject of several research studies, and therefore we do not discuss the concerns here (see e.g., Miller and Modigliani, 1966; White, 1980; Bernard, 1987; Christie, 1987; Landsman and Magliolo, 1988; Kothari and Zimmerman, 1995; Barth and Kallapur, 1996; Easton, 1998; Brown et al., 1999; Lo and Lys, 2000; Easton and Sommers, 2000; Gu, 2000; Guo and Ziebart, 2000; Barth and Clinch, 2001). These concerns include coefficient bias induced by correlated omitted variables, measurement error, and cross-sectional differences in valuation parameters, and inefficiency and potentially incorrectly calculated coefficient standard errors induced by heteroscedasticity. The literature not only acknowledges these problems, but, fortunately, also is replete with the potential remedies that are typically employed in value relevance research.

#### 4.2.2. Selection of conditioning variables

Determining which variables to include in the estimation equation is critical to value relevance research design. Selection of included variables depends on the research question, and often is guided by the valuation model that forms the basis for the estimation equation. An example of a study that describes this variable selection process is Barth et al. (1996; BBL), which examines the value relevance of banks' financial instruments' fair value estimates disclosed under SFAS No. 107. Specifically, BBL examines whether differences between fair value estimates

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<sup>27</sup> Although not all accounting information is timely, it can summarize information investors use when valuing the firm. For example, whereas disclosure of depreciation expense might not be timely, it is a component of income and, hence, is part of the information system used by investors when valuing the firm. Moreover, as pointed out by Lambert (1996) in his review of the value relevance literature: "It seems clear...that the FASB is not interested in confining financial reporting activities to include only those items that are not already adequately conveyed by other sources on a more timely basis...Stated in more extreme fashion, would they eliminate items from the annual report if they were already available from other sources? Probably not."

and book values for assets and liabilities covered by SFAS No. 107 explain differences in market and book values of equity. BBL conditions inferences regarding the fair value estimates only on book values, i.e., financial statement amounts, because the FASB's primary interest is financial statements, not all publicly available information. That is, the FASB is concerned with whether financial statements contain relevant and reliable information about all assets and liabilities, regardless whether such information can be obtained elsewhere.

BBL identifies two other sets of conditioning variables, assets and liabilities specifically excluded from the provisions of SFAS No. 107 and variables that are potential competitors to the fair value estimates because they reflect key determinants of fair value. Omission from the estimating equation of assets and liabilities excluded from SFAS No. 107 could lead to inference problems relating to the fair value estimates because they likely are correlated with the fair value estimates and financial instruments' fair values are not intended to summarize the information they contain.<sup>28</sup>

The competitor variables reflect default risk and interest rate risk, two major factors associated with changes in financial instruments' fair values. Excluding the competitor variables from the estimating equation permits determining whether the fair value estimates are value relevant. Whether the competitor variables reduce or eliminate the value relevance of the fair value estimates when they are included in the estimating equation provides insights into how well the fair value estimates reflect default risk and interest rate risk. Specifically, if the fair value estimates lose explanatory power in the presence of these variables, then the fair value estimates reflect default risk and interest rate risk, as they should. If the fair value estimates retain explanatory power, then they reflect dimensions of fair value beyond default risk and interest rate risk as reflected in the competitor variables.

#### 4.2.3. Role of measurement error

Many value relevance studies operationalize reliability in terms of measurement error and seek to determine the extent of measurement error in particular accounting amounts (e.g., Barth, 1991; Easton et al., 1993; Barth, 1994a, b; Petroni and Wahlen, 1995; Barth et al., 1996; Venkatachalam, 1996; Choi et al., 1997; Aboody and Lev, 1998; Aboody et al., 1999). Thus, measurement error is the subject of study and, thus, it is necessary to specify the underlying construct that is the object of measurement.<sup>29</sup>

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<sup>28</sup> BBL also examines the sensitivity of inferences to other omitted variables that potentially could cause inference problems, and estimates a first-difference specification as an alternative approach to control for potential correlated omitted variables (see Landsman and Magliolo, 1988).

<sup>29</sup> Measurement error that, in contrast, is an econometric problem potentially causing inference problems can be mitigated by using well-established econometric techniques such as instrumental variables (Miller and Modigliani, 1966).

Two underlying constructs are used in the extant literature. The first construct is economic assets, liabilities, and income (e.g., Miller and Modigliani, 1966; Bowen, 1981; Landsman, 1986). Using this construct requires making specific assumptions about the economic characteristics of markets, e.g., that they are perfect and complete, which subsumes market efficiency. Measurement error is the difference between these economic amounts and the related accounting amounts such as book values of assets and liabilities and accounting net income. Accounting research adopting this construct is aimed at studying how well these accounting amounts reflect their corresponding economic amounts. The second construct is the asset, liability, and income amounts that are implicitly assessed by investors when valuing the firm (e.g., Barth, 1991, 1994a, b; Barth et al., 1996; Choi et al., 1997). Using this construct requires only that accounting amounts summarize information investors use to set share prices.

## **5. Summary and concluding remarks**

This paper presents a view regarding the relevance of value relevance research for financial accounting standard setting that differs from that presented in HW. A key conclusion of HW is that value relevance research offers little or no insight for standard setting. As active participants in this research and standard setting, we clarify the relevance of the value relevance literature to financial accounting standard setting. A key conclusion is that the value relevance literature provides fruitful insights for standard setting. We first discuss the hypotheses tested in value relevance research and summarize the major findings from the subset of value relevance research related to fair value accounting. We then explain how value relevance research addresses questions of interest to accounting standard setters, as well academic researchers and other non-academic constituents of the research. Finally, we discuss key research design issues associated with value relevance research.

We also clarify several misconceptions articulated in HW regarding value relevance research. In particular, in contrast with HW, we conclude: (1) value relevance research provides insights into questions of interest to standard setters and other non-academic constituents. (2) A primary focus of the FASB and other standard setters is equity investment. The possible contracting and other uses of financial statements in no way diminish the importance of value relevance research. (3) Empirical implementations of extant valuation models can be used to address questions of value relevance despite their simplifying assumptions. (4) Value relevance research can accommodate conservatism, and can be used to study its implications for the relation between accounting amounts and equity values. (5) Value relevance studies are designed to assess whether particular accounting amounts reflect information that is used by

investors in valuing firms' equity, not to estimate firm value. (6) Value relevance research employs well-established techniques for mitigating the effects of various econometric issues that arise in value relevance studies.

It is important to emphasize that conducting value relevance research that provides insights into questions of interest to academics and non-academics alike is not an easy task. It takes considerable time and effort to learn about questions of interest to various financial reporting constituencies, to understand the institutional details of the accounting amounts being studied, and to develop research designs capable of addressing research questions that correspond to questions of interest. As financial markets expand and become more complex and accounting standards attempt to keep pace with these changes, it is a challenge for accounting research to make a substantive contribution in addressing questions relevant to standard setting.

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