

CUE407 - IS PREDICTABILITY IMPROVED BY REPORTING OCI AS A PERFORMANCE METRIC ON THE STATEMENT OF COMPREHENSIVE INCOME?

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Resumo

Even before standard setters required other comprehensive income (OCI) be reported on the Statement of Comprehensive Income, accounting researchers have challenged the notion whether reporting OCI as a performance metric has predictive value. Regardless of how OCI is reported, the accounting for OCI is as a direct adjustment to equity which bypasses earnings. The research design of most studies on OCI is such that they cannot address whether requiring OCI be reported as performance has predictive value incrementally to that attributable to the accumulation of OCI in equity. Using a sample of IFRS adopting countries within the European Union, we find that including OCI as a performance metric in our model provides a modest incremental improvement in predictiveness, relative to the significant improvement attributable to the accumulation of OCI in equity, and only when OCI is decomposed into components. We do not find aggregated OCI improves predictiveness, but do find individual OCI components have predictive value which vary in magnitude and sign, suggesting that aggregation obfuscates the predictive usefulness of specific OCI components. This also raises questions about the fit of comprehensive income (CI) to serve as a summary statistic of performance. Together, our findings that the reporting of individual OCI components has predictive value, but the aggregation of these components does not, suggests that the shift towards reporting OCI as performance would more likely improve predictive usefulness under the two-statement approach for reporting CI, than under the single-statement approach that presents CI as the bottom-line summary statistic.

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ABSTRACT

Even before standard setters required other comprehensive income (OCI) be reported on the Statement of Comprehensive Income, accounting researchers have challenged the notion whether reporting OCI as a performance metric has predictive value. Regardless of how OCI is reported, the accounting for OCI is as a direct adjustment to equity which bypasses earnings. The research design of most studies on OCI is such that they cannot address whether requiring OCI be reported as performance has predictive value *incrementally* to that attributable to the accumulation of OCI in equity. Using a sample of IFRS adopting countries within the European Union, we find that including OCI as a performance metric in our model provides a modest incremental improvement in predictiveness, relative to the significant improvement attributable to the accumulation of OCI in equity, and only when OCI is decomposed into components. We do not find aggregated OCI improves predictiveness, but do find individual OCI components have predictive value which vary in magnitude and sign, suggesting that aggregation obfuscates the predictive usefulness of specific OCI components. This also raises questions about the fit of comprehensive income (CI) to serve as a summary statistic of performance. Together, our findings that the reporting of individual OCI components has predictive value, but the aggregation of these components does not, suggests that the shift towards reporting OCI as performance would more likely improve predictive usefulness under the two-statement approach for reporting CI, than under the single-statement approach that presents CI as the bottom-line summary statistic.

Keywords: comprehensive income; dirty surplus accounting; abnormal earnings; earnings predictability

1. INTRODUCTION

The International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) both express the belief that the usefulness of financial reporting depends on its ability to help investors assess the future prospects of a firm (IAS 1, par OB3; SFAS 8, par OB3). In an effort to increase the transparency of a firm's future prospects, the IASB (since 2008) and FASB (since 2012) both require net income (profit or loss, P&L) and other comprehensive income (OCI) items be reported on the Statement of Comprehensive Income (IASB 2008, par IN13; FASB ASU no.2011-05). This can be reported as one statement, where P&L and OCI are reported as subtotals and CI is reported as the bottom-line summary statistic of performance; or, as two consecutive statements with OCI components being reported on a separate statement.

Effectively, the new reporting requirements result in OCI being treated as a performance metric. Regardless of how OCI is reported, the accounting for OCI is as a direct adjustment to equity which bypasses P&L. In this study, we test whether the *reporting treatment* of including OCI (or OCI components) on the Statement of Comprehensive Income improves the predictability of future performance incrementally to the *accounting treatment* of accumulating OCI in equity.

The extant literature documents that even before the requirement that OCI be reported on the Statement of Comprehensive Income, managers were concerned that financial statement users might view information presented as performance in comprehensive income (CI) differently from that same information being reported only as part of the Statement of Stakeholders' Equity. Maines and McDaniel (2000) provide experimental evidence of this concern, finding that managers fear that reporting OCI as performance in CI would paint the firm in a more volatile light. Further, Du, Stevens, and McEnroe (2015) provide additional evidence that suggests this

tends to be more the case under the one-statement approach than the two-statement approach. Bamber, Jiang, Petroni, and Wang (2010) find that this fear was expressed in comment letters to the FASB, concluding that what managers fear is that this reporting would lead investors to assess the firm as more volatile, while adding no new information for investors.

Our study addresses whether this fear that reporting OCI as performance would mislead investors is justified. Based on the expressed goals of both the IASB and FASB, we posit that managers' fears would be justified to the extent that reporting OCI as performance lacks incremental predictive value to the accounting treatment of accumulating OCI in equity. Evidence of incremental predictive value, however, would indicate that the managers' fears are overblown and would support the standard setters' current reporting treatment of including OCI (or specific components of OCI) on the Statement of Comprehensive Income.

Theoretically, the Ohlson (1995) framework would suggest that information about OCI could enhance predictive value in two ways: (1) as an adjustment to the measurement of the investment base (i.e., net assets or book value), thus improving the ability of financial statement users to assess the expected 'normal' return on investment; or, (2) as an enhancement to reported earnings, thus improving the ability of users to assess a firm's ability to generate earnings beyond a normal rate of return (i.e., 'abnormal earnings').¹ Regardless of whether or not OCI is reported as performance, Chambers, Linsmeier, Shakespeare, and Sougiannis (2007) point out that the accounting treatment of accumulating OCI in equity results in OCI being "fully picked up by the end of period book value" (p. 562). Thus, reporting OCI as performance would have incremental predictive value only to the extent OCI enhances the predictiveness of abnormal earnings.

The basis upon which the IASB requires P&L and OCI be reported separately on the Statement of Comprehensive Income is not due to any uncertainty about whether OCI should be considered performance. Rather, the IASB makes the point in the *Conceptual Framework* that CI represents performance, and that OCI is reported separately from P&L on the statement because, "[r]ecognizing items separately in profit or loss and OCI clearly identifies different components of the return an entity has made on its resources during a period. Typically, this distinction can help communicate differences in those components in a way that is useful for assessing the prospects for future cash flows arising from them." (par. 8.43, IASB 2013).

The IASB's underlying assumption that CI represents performance has been challenged by the academic literature. The prevalent concern is that OCI does not exhibit the qualities expected of a performance metric, in that OCI items are commonly described as transitory, arising from uncontrollable and volatile market forces (Chambers et al. 2007). Others point out that the temporary or irrelevant components of OCI introduce noise and uncertainty, which ultimately limits the decision making usefulness of OCI (Brief and Peasnell 1996; Tarca 2006). Further, O'Hanlon and Pope (1999) argue that the inclusion of extraneous and opaque components in CI would reduce the ability to predict long run performance. Finally, because a significant portion of OCI is comprised of fair value adjustments, Barth, Beaver, and Landsman (1996) express concern that if OCI were to report all changes in fair value as performance, future earnings would be even more difficult to predict. Because these attributes naturally call into question the usefulness of CI, Bamber et al. (2010) argue CI fails to provide a complete representation of a firm's performance.

¹ Within the Ohlson (1995) framework, the accounting treatment of OCI results in a violation of the clean surplus assumption. Ohlson assumes clean surplus to theoretically link expectations of future earnings and firm value. By reporting OCI as a performance metric on the Statement of Comprehensive Income, the financial statements articulate creating a quasi-clean surplus relation. If OCI were not reported as a performance metric, as seems to be the preference of managers and FASB respondents (Maines and McDaniel 2000; Bamber et al. 2010), clean surplus would be violated. Ohlson (1995) does not require the clean surplus relation to express expectations of future earnings, but violations of clean surplus would limit the framework's ability to link earnings expectations and firm value.

These findings of the extant literature are in line with economic theory that suggests the gains and losses reported in OCI, by their transitory nature, would follow a random walk, thus lack any information that would improve predictability (Ohlson 1999). Easton and Zhang (2015) point out that this is the primary reason standard setters permit OCI to bypass earnings. Ohlson (1999) points out, however, that while changes in fair value follow a random walk and do not predict future changes in fair value, they could be relevant for predicting future performance. Black (2016) identifies examples in the extant literature which indicate that some components of OCI do have predictive usefulness. Black finds that the evidence is mixed, however, which he attributes to differences in industry settings, research design, and the calculation of OCI.

A shortcoming of those studies that test whether OCI (or specific components of OCI) is predictive of future performance, is that the research designs of these studies cannot address whether requiring OCI be reported as performance improves the predictive usefulness of the financial statements over the prior standards that allowed OCI to be reported only as an adjustment to equity. By testing whether reporting OCI as a performance metric improves the predictability of future performance *incrementally* to the accumulation of OCI in equity, our study is able to provide new evidence on whether this shift by the IASB and FASB towards reporting OCI as performance improves the predictive usefulness of the financial statements.

Closely related to our study is Landsman, Miller, Peasnell, and Yeh (2011), who utilize the Ohlson (1995) framework to examine the effects of violating the clean surplus relation (i.e., dirty surplus). Their focus is on whether the inclusion of dirty surplus items, such as OCI, in book value and CI enhances predictability and value relevance over the exclusion of dirty surplus items. They find that these items are not predictive of future performance, but do find these items (in aggregate) to be value relevant.

Landsman et al.'s (2011) seemingly contradictory findings that OCI is value relevant, but not predictive, could reflect the accumulation of OCI in equity having predictive value (and hence, value relevance), but being negated by the injection of noise into the earnings process by the inclusion of OCI in CI (as the extant literature suggests). Their research design, however, cannot parse out the predictive value attributable to the accumulation of OCI in equity from that attributable to including OCI as a performance metric. The design of our study, however, allows us to extend Landsman et al. by separately identifying the incremental (positive or negative) predictive value of reporting OCI as performance.

Using a sample from IFRS adopting countries within the European Union, our initial results are similar to Landsman et al.'s (2011) overall results, in that we do not find the accumulation of OCI in equity nor including OCI as a performance metric in CI increases the predictiveness of the financial statements. This suggests that their lack of results are attributable to more than just the countervailing effects of the reporting and accounting treatments for OCI. We propose that the lack of results would also be attributable to the predictive values of the OCI components varying, even in opposite directions. Thus, by aggregating the components into a single OCI metric, the potential predictive value of the individual components could offset. Such variation was anticipated by the IASB; and, was the basis for requiring the components of OCI be reported separately from P&L on the Statement of Comprehensive Income (IASB 2013).

To test whether the IASB anticipated correctly, we decompose OCI into its components and test whether reporting the components of OCI as performance metrics improves the predictability of future performance *incrementally* to the accounting treatment of accumulating the components in equity. The components of OCI reported under IFRS include: (1) gains and losses on foreign currency translations (IAS 21 *The Effects of Changes in Foreign Exchange Rates*); (2) gains and losses on the effective portion of cash flow hedges (IFRS 9 *Financial Instruments*); (3) gains and losses on available-for-sale securities (IFRS 9); (4) remeasurements of defined benefits

plans (IAS 19 *Employee Benefits*); and, (5) changes in the accumulation of upward asset revaluations (IAS 16 *Property, Plant and Equipment* and IAS 38 *Intangible Assets*).

Our results from testing the individual components of OCI does suggest that the aggregated metric of OCI obfuscates the predictive value of specific OCI components. For the accumulation of the components of OCI in equity, we find evidence of an overall improvement in predictiveness of 3.62 percent, over excluding these components from book value. Both the accumulation of foreign currency translations and the accumulation of upward asset revaluations are positively associated to future performance, where the accumulation of gains and losses from available-for-sale securities and hedging are negatively associated to future performance. We also find evidence of a modest overall improvement in predictiveness of 0.41 percent from reporting the components of OCI in CI as performance, incrementally to the improvement attributable to the accumulation of the components of OCI in equity. Specifically, we find pensions and upward asset revaluations as performance metrics are negatively associated with future performance.

While the IASB's *Conceptual Framework* regards CI as representing performance, the IASB and FASB continue to debate the usefulness of specific OCI components and whether the Statement of Comprehensive Income should follow the one-statement approach, or continue to allow two separate statements (IASB 2016). Our study contributes to this debate by providing evidence that the predictive values of specific OCI components vary in both magnitude and sign, reflecting those differences across the IASB and FASB's basis of conclusions for requiring particular OCI components be reported in OCI, rather than P&L. This variability suggests that analysts and other market participants should view OCI components individually, rather than from a bottom line approach that is typically employed with earnings; and, raises questions about the fit of CI to serve as a summary statistic of performance. Together, our findings that the reporting of individual OCI components has predictive value, but the aggregation of these components does not, suggests that the shift towards reporting OCI as performance would more likely improve predictive usefulness under the two-statement approach for reporting CI, than under the single-statement approach that presents CI as the bottom-line summary statistic.

The remainder of this paper is organized as follows. In section 2, we discuss the background relating to OCI and related literature. We develop our model, hypotheses, and research design in section 3. We present our sample selection and descriptive statistics in section 4 and the results of our tests in section 5. We conclude in section 6.

2. BACKGROUND AND RELATED LITERATURE

The extant literature on OCI, or more broadly on CI, has generally focused on their associations with market prices (value relevance) and/or the predictive usefulness. For example, Jones and Smith (2011) compare OCI to special items and find that OCI is less able to predict either future earnings or future cash flows, and is less value relevant. Dhaliwal, Subramanyam, and Trezevant (1999) find that CI is no better at predicting future performance than earnings. Further, Barton, Hansen, and Pownall (2010) show that CI has the lowest ability to predict future cash flows, relative to a wide range of performance measures, including earnings. Finally, Lin, Martinez, Wang, and Yang (2016) find OCI reported on the Statement of Comprehensive Income is value relevant only during the 2007-2008 financial crisis.

Overall, the extant literature suggests that book value is more relevant when net assets are adjusted for the accumulation of OCI, but including OCI as a performance metric in CI would likely inject noise into a firm's summary statistic for performance which would reduce predictability. Together, the findings from prior research point to the importance of parsing out the predictive value attributable to the accumulation of OCI in equity from that attributable to including OCI as a performance metric in our research design.

In determining whether an accounting transaction should be reported in P&L or as a component of OCI, neither the IASB nor the FASB relied on a principle (or concept) to segregate OCI components from other items that will be treated in P&L. The decisions were on a case-by-case basis, leading to different justifications for each component reported in OCI. In other words, the differences in the underlying reasons a component is being reported in OCI would also lead to different expectations on how a specific component would be predictive of future performance. The components of OCI are discussed below.

2.2.1 Currency translation adjustments: Louis (2003) examines the incremental value relevance of accumulated FCT for a sample of US manufacturing firms and finds it to be negatively associated with firm value. Other studies that examine the FCT component of OCI generally fail to find evidence of its usefulness. For example, O'Hanlon and Pope (1999) fail to find the FCT component value relevant for a sample of UK firms. Cahan et al. (2000) also fail to find the FCT component to be value relevant.

2.2.2 Available-for-sale securities: Dhaliwal et al. (1999) finds that the AFS component is the only one that improves the association of returns with income, and only for financial firms. Biddle and Choi (2006) also find AFS to be the best of all the OCI components at explaining returns. Easton and Zhang (2015) provides evidence that current portion of the AFS component is highly correlated with the accumulation of AFS gains and losses reported in equity.

2.2.3 Cash flow hedges: Bratten et al. (2015) report that in the US banking sector, the hedge component is negatively related to future profitability. Campbell (2015) finds that unrealized cash flow hedge gains/losses are negatively associated with future profitability.

2.2.4 Pensions: Chambers et al. (2007) finds that depending on whether the pension adjustment component of OCI is presented as an adjustment to equity or in a performance statement, investors perceive it positively or negatively, respectively.

2.2.5 Upward asset revaluations: There are conflicting results related to asset revaluations in the literature. Based on the pre-IFRS adoption standards, Aboody, Barth, and Kasznik (1999) provide evidence that upward revaluations in the UK are positively related to positive changes in future performance, which was subsequently confirmed for the post-IFRS adoption period by Costa et al. (2017).² In contrast, O'Hanlon and Pope (1999) fail to find the asset revaluation component to be value relevant for a sample of UK firms.

Taken together, the differences in how the FASB and IASB justify treating gains and losses across the components of OCI suggest that their predictive values are also likely to vary. Further, the predictive values can go in opposite directions. For example, Aboody et al. (1999) provide evidence that asset revaluations are positively related to changes in future performance while Campbell (2015) shows that unrealized gains (losses) on cash flow hedges will be negatively related to future performance. If the predictive power of revaluations and cash flow hedges are in opposite directions, then treating them in aggregate may offset their usefulness. Further, these components are likely to be correlated, thus the predictive value of any particular component will depend on the predictive value of other components, and the correlation between components.

3. MODEL AND HYPOTHESES DEVELOPMENT

We test whether reporting OCI or various components through the Statement of Comprehensive Income improves the predictability of future performance *incrementally* to the adjustment to equity. Regardless of whether the reporting is through the performance metric, including OCI in a measure of performance, by definition, would also include the adjustment to equity. Before we can explore the merits of treating OCI as performance (reporting treatment),

² Until 2000, revaluing firms were not required to perform periodic revaluations on a consistent basis.

we first determine the extent that recording OCI as an adjustment to equity (accounting treatment) improves predictability.

We begin by modeling expected earnings as in Ohlson (1995), who proposes that in the extremes, expectations of future performance can be modeled as: (i) a return on assets in place (book value model); or, (ii) the ability to sustain the current level of profitability (net income model)³. OCI is recognized strictly as an adjustment to equity, not as a component of P&L. The accounting treatment does not change when the reporting treatment requires OCI to be included in the Statement of Comprehensive Income, where OCI would be interpreted as a performance measure. As such, when OCI exists, the current accounting treatment results in an adjustment to book value in equation (1) to include the accumulated OCI (AOCI). If the inclusion of AOCI improves the predictiveness of the book value model, we would observe a significant association between AOCI and future performance, as well as less error, in the book value model.

The current treatment to only recognize OCI adjustments through equity represents a ‘dirty surplus’ adjustment that results when bypassing earnings. With IFRS requiring that the reporting of P&L be a subtotal within the Statement of Comprehensive Income, the reported accounting numbers of book value and comprehensive income quasi-satisfy the clean surplus relation. Comprehensive income would thus be net income plus OCI, and the net income model would be adjusted. Our first hypothesis examines the extent that predictability improves under dirty surplus accounting than under clean surplus accounting. We formally state this below:

H1: The power of the prediction model is greater under dirty surplus accounting that *includes* AOCI, than under clean surplus accounting that *excludes* AOCI.

By considering OCI as a performance metric, book value must also include the direct adjustments to equity, because of the articulation of the financial statements. Thus whether the IASB’s view that OCI is a performance metric, as reflected in the Statement of Comprehensive Income, improves the predictiveness of future performance would be indicative only if quasi-clean surplus accounting improves upon the predictiveness of dirty-surplus accounting, rather than clean surplus accounting. We formally state this in our second hypothesis below:

H2: The power of the prediction model is greater under quasi-clean surplus accounting that *includes* OCI as a performance metric than under dirty surplus accounting that *excludes* OCI as a performance metric but includes AOCI in book value (accounting treatment).

3.2 Empirical models

Our first step in empirically testing our hypotheses, we estimate the predictiveness of future performance ($Perf_{i,t+1}$) as earnings before interest, taxes, depreciation and amortization ($EBITDA_{t+1}$).⁴ Equation (1) presents our clean surplus model (Model C), below:

$$Perf_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t}^a + \alpha_2 BV_{i,t}^C + \eta_{i,t} \quad (1)$$

³ We do not present the development of the analytical model in this version of the paper due to the maximum number of pages allowed for submission.

⁴ Our choice of $EBITDA_{i,t+1}$ as our measure of future performance over net P&L mitigates the potential effects of recycling of OCI items through P&L in the next period. Otherwise, our results could be due to the mechanical relation. As a sensitivity check that we report in the results section, we discuss our results using future CI, future cash flows future earnings before interest and taxes, and future income before extraordinary items.

Following Ohlson (1995), we expect that the relations of $NI_{i,t}^a$ and $BV_{i,t}^C$ with $Perf_{i,t+1}$ to be positive. To test our first hypotheses, we compare the predictiveness of the clean surplus relation reflected in Model C (equation 1) to that of the dirty surplus relation (Model D). Equation (2) presents our empirical estimation of Model D, below:

$$Perf_{i,t+1} = \beta_0 + \beta_1 NI_{i,t}^a + \beta_2 rAOCI_{i,t-1} + \beta_3 BV_{i,t}^C + \beta_4 AOCI_{i,t} + \kappa_{i,t} \quad (2)$$

H1 predicts that the current accounting treatment of directly adjusting equity improves predictability beyond excluding AOCI in the prediction model. Our test of H1, therefore, tests whether the adjusted- R^2 from equation (2) is greater than the adjusted- R^2 from equation (1). To test our second hypotheses, we compare the treatment of OCI as a performance metric under quasi-clean surplus accounting (Model Q) improves the predictiveness over that of Model D. Equation (3) presents our empirical estimation of Model Q, below:

$$Perf_{i,t+1} = \gamma_0 + \gamma_1 NI_{i,t}^a + \gamma_2 OCI_{i,t} + \gamma_3 rAOCI_{i,t-1} + \gamma_4 BV_{i,t}^C + \gamma_5 AOCI_{i,t} + \mu_{i,t} \quad (3)$$

If we find that the adjusted- R^2 is greater from equation (3) to the adjusted- R^2 from equation (2), we would find support for H2. Model D and Model Q, however, consider OCI only in aggregate. Based on the expectations of both the IASB and FASB, discussed above, the predictiveness of the individual components of OCI likely vary. As such, the aggregation of the OCI components into a single measure of OCI could obscure the predictiveness of the components, as Landsman et al. (2011) found in their tests of the predictiveness of aggregated OCI.

We, therefore, test our hypotheses by testing both aggregated OCI (in equations (2) and (3)) and by disaggregating OCI into: foreign currency translations (*FCT*); gains and losses from available for sale securities (*AFS*); adjustments for pension gains and losses (*PENS*); gains and losses on cash flow hedges (*HDG*); and, upward asset revaluations (*RVL*). Equation (4) presents the disaggregation of AOCI with Model D (henceforth Disaggr D), and equation (5) presents the disaggregation of both OCI and AOCI with Model Q (henceforth, Disaggr Q), as follows:

$$\begin{aligned} Perf_{i,t+1} = & \lambda_0 + \lambda_1 NI_{i,t}^a + \lambda_2 rAFCT_{i,t-1} + \lambda_3 rAAFS_{i,t-1} + \lambda_4 rAPEN_{i,t-1} \\ & + \lambda_5 rAHDG_{i,t-1} + \lambda_6 rARVL_{i,t-1} + \lambda_7 BV_{i,t}^C + \lambda_8 AFCT_{i,t} + \lambda_9 AAFS_{i,t} \\ & + \lambda_{10} APEN_{i,t} + \lambda_{11} AHDG_{i,t} + \lambda_{12} ARVL_{i,t} + \sigma_{i,t} \end{aligned} \quad (4)$$

$$\begin{aligned} Perf_{i,t+1} = & \theta_0 + \theta_1 NI_{i,t}^a + \theta_2 FCT_{i,t} + \theta_3 AFS_{i,t} + \theta_4 PEN_{i,t} + \theta_5 HDG_{i,t} + \theta_6 RVL_{i,t} \\ & + \theta_7 rAFCT_{i,t-1} + \theta_8 rAAFS_{i,t-1} + \theta_9 rAPEN_{i,t-1} + \theta_{10} rAHDG_{i,t-1} + \theta_{11} rARVL_{i,t-1} \\ & + \theta_{12} BV_{i,t}^C + \theta_{13} AFCT_{i,t} + \theta_{14} AAFS_{i,t} + \theta_{15} APEN_{i,t} + \theta_{16} AHDG_{i,t} + \theta_{17} ARVL_{i,t} + \tau_{i,t} \end{aligned} \quad (5)$$

We first assess whether the disaggregation of OCI and AOCI improves the predictiveness of future performance by testing whether the adjusted- R^2 is greater for Disaggr D and Disaggr Q models than for Model D and Model Q, respectively. If so, equations (4) and (5) will provide insights into which components of other comprehensive income improve the predictiveness of future performance. We then retest H1 and H2 by testing if the adjusted- R^2 is greater for Disaggr D than Model C and if the adjusted- R^2 is greater for Disaggr Q than Disaggr D, respectively.

4. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

We collect data from Compustat Global for all listed firms in thirteen European Union (EU) countries from 2005 to 2015. We use the EU as our setting because all countries within the EU adopted IFRS in 2005, and IFRS permits greater use of OCI than under US GAAP, including upward asset revaluations. Further, in calculating abnormal earnings, our proxy for the required rate of return (r), based on the long-term OCED interest rates by country and year. Following

prior research, we exclude firms from the financial industry. We also exclude firms with negative book values, since we need positive values to estimate abnormal earnings. Finally, we exclude firms that do not present at least one AOCI component. We calculate aggregate OCI by summing the five individual components. We report our sample selection procedures on Table 1.

TABLE 1
Sample Selection and Screening Procedures

Panel A: Sample Selection	
Compustat Global, 2005-2015	
Initial firm-years available from	90,061
Less firm-years:	
firms from the financial industry (SIC Codes: 6000-6799)	(20,594)
firms with negative book value	(3,588)
firms without accumulated comprehensive income	(59,897)
missing data	(1,433)
values outside normal convention	(78)
Final sample	4,471

From an initial sample of 90,061 observations, 59,897 observations are deleted for not reporting OCI, 20,594 are deleted from the financial sector, and 3,588 are deleted for negative book values. We also deleted 1,433 for missing data items and 78 observations for variable values outside of normal convention, resulting in a final sample of 4,471 observations. We also report on Table 1 our sample distribution by country and by industry. We find higher concentrations of observations in the UK (1,395 observations), Germany (687 observations), and Italy (425 observations), and the greatest concentration of observations in the manufacturing industry.⁵

We present the descriptive statistics for our variables in Table 2. All variables are deflated by total assets at the beginning of the year. We report descriptive statistics on our primary measure of future performance, *EBITDA*, as well as on our alternative measure of future performance: cash flow from operations (*CFO*). The performance metric *OCI* is small (mean of -0.001, as a percentage of beginning-of-the-period total assets). The *OCI* components range in means from -0.012 for hedging (*HDG*) to 0.007 for revaluations (*RVL*).

⁵ We report our findings from performing by-country and by-industry tests, as additional tests in the results section.

TABLE 2
Descriptive Statistics

Variable	Obs.	Mean	Median	S.D.	Min.	Max.
$EBITDA_{i,t+1}$	4,471	0.136	0.112	0.111	(0.229)	0.583
$CFO_{i,t+1}$	4,471	0.100	0.083	0.096	(0.255)	0.505
$NI^a_{i,t}$	4,471	0.029	0.029	0.073	(0.330)	0.223
$BV^C_{i,t}$	4,471	0.421	0.379	0.226	0.039	0.961
$AOCI_{i,t}$	4,471	0.006	0.001	0.041	(0.108)	0.203
$OCI_{i,t}$	4,471	-0.001	0.000	0.021	-0.079	0.092
$ACFT_{i,t}$	2,389	0.000	0.000	0.031	(0.107)	0.115
$AAFS_{i,t}$	1,276	0.008	0.000	0.031	(0.035)	0.195
$APEN_{i,t}$	212	-0.016	-0.008	0.027	(0.166)	0.050
$AHDG_{i,t}$	2,783	-0.004	-0.001	0.015	(0.079)	0.036
$ARVL_{i,t}$	1,154	0.029	0.007	0.062	0.000	0.384
$FCT_{i,t}$	2,194	0.001	0.000	0.021	(0.062)	0.096
$AFS_{i,t}$	1,093	0.000	0.000	0.017	(0.072)	0.091
$PEN_{i,t}$	159	-0.005	-0.001	0.014	(0.067)	0.039
$HDG_{i,t}$	2,589	-0.012	0.000	0.011	(0.056)	0.040
$RVL_{i,t}$	262	0.007	0.002	0.015	0.000	0.087

Variables are defined as follows: $EBITDA_{i,t+1}$ = Earnings before interest, taxes, depreciation and amortization, of firm i for year $t+1$, deflated by total assets at t ; $CFO_{i,t+1}$ = Cash flow from operations, of firm i for year $t+1$, deflated by total assets at t ; $NI^a_{i,t}$ = Abnormal earnings, of firm i for year t , deflated by total assets at $t-1$; $BV^C_{i,t}$ = 'Clean' book value that excludes other comprehensive adjustments, of firm i for year t , deflated by total assets at $t-1$; $AOCI_{i,t}$ = Accumulated other comprehensive income, of firm i for year t , deflated by total assets at $t-1$; $OCI_{i,t}$ = Other comprehensive income, of firm i for year t , deflated by total assets at $t-1$; $AFCT_{i,t}$ = Accumulated other comprehensive income related to foreign currency translations, of firm i for year t , deflated by total assets at $t-1$; $AAFS_{i,t}$ = Accumulated other comprehensive income related to gains and losses from available-for-sale securities, of firm i for year t , deflated by total assets at $t-1$; $APEN_{i,t}$ = Accumulated other comprehensive income related to adjustments for pension gains and losses, of firm i for year t , deflated by total assets at $t-1$; $AHDG_{i,t}$ = Accumulated other comprehensive income related to gains and losses on cash flow hedges, of firm i for year t , deflated by total assets at $t-1$; $ARVL_{i,t}$ = Accumulated other comprehensive income related to upward asset revaluations, of firm i for year t , deflated by total assets at $t-1$; $FCT_{i,t}$ = Foreign currency translations, of firm i for year t , deflated by total assets at $t-1$; $AFS_{i,t}$ = Gains and losses from available-for-sale securities, of firm i for year t , deflated by total assets at $t-1$; $PEN_{i,t}$ = Adjustments for pension gains and losses, of firm i for year t , deflated by total assets at $t-1$; $HDG_{i,t}$ = Gains and losses on cash flow hedges, of firm i for year t , deflated by total assets at $t-1$; $RVL_{i,t}$ = Upward asset revaluations, of firm i for year t , deflated by total assets at $t-1$;

The mean of accumulated OCI ($AOCI$) is 0.006 (again, as a percentage of beginning of the period assets). As expected, the accumulated values vary widely across the five $AOCI$ components, with both $APEN$ and $AHDG$ having negative means (-0.016 and -0.004, respectively) and $ACFT$, $AAFS$, and $ARVL$ having positive means (0.0001, 0.008, and 0.029, respectively). This wide variation in means also suggests the need for financial statement users to consider individual OCI components as a basis for their earnings expectations, rather than the aggregated measure of OCI.

We calculate the correlation matrix of our regression variables relating to OCI and components of OCI⁶. The strong correlations across the OCI components again suggests that aggregation of the OCI components into a summary OCI metric would likely obfuscate the predictive usefulness of the individual components. We find $rAAFS$, $rAHDG$, $AHDG$ and HDG are all positively correlated with future $EBITDA$; and, $rAFCT$, $AFCT$ and $ARVL$ are negatively correlated with future $EBITDA$ (all significant at least at the five-percent level). We also find significant correlations across the OCI components, indicative that the components exhibit some common underlying characteristics that support exclusion of these measures from P&L. But, the significant variation in sign and magnitude also suggest that the components are unlikely to be as informative when aggregated. We demonstrate this in our disaggregated tests of H1 and H2.

5. EMPIRICAL RESULTS

5.1 Results from tests of hypotheses

In Table 3, we present our results using future $EBITDA$. We estimate three regressions in order to evaluate if AOCI and/or OCI are incrementally relevant to predict future performance. In Panel A, we present Model C (clean surplus) as our *baseline model* that tests the predictive power of current abnormal earnings (NI^t) and equity book value that excludes AOCI (BV^C). In Panel B, we present Model D as our (dirty surplus) *accounting treatment model* that tests the predictive power of including AOCI as an adjustment to book value. Finally, in Panel C we present Model Q as our (quasi-clean surplus) *reporting treatment model* that tests the predictive power of including both AOCI as an adjustment to book value and OCI as a performance metric.

⁶ We do not present the correlation matrix in this version of the paper due to the maximum number of pages allowed for submission.

TABLE 3

Panel A: Regression of clean surplus Model C, exclusive of AOCI and OCI

<u>Variables</u>	<u>Exp. Sign</u>	<u>Coeff.</u>	<u>t-statistic</u>
<i>Intercept</i>	?	-0.028	-3.57 ***
$NI_{i,t}^a$	+	0.653	34.46 ***
$BV_{i,t}^C$	+	0.179	32.08 ***
Controls included		Yes	
Year dummies included		Yes	
<i>Obs.</i>		4,471	
$R^2_{Model C}$		0.469	

Panel B: Regression of dirty surplus Model D, inclusive of AOCI and exclusive of OCI

<u>Variables</u>	<u>Exp. Sign</u>	<u>Coeff.</u>	<u>t-statistic</u>
<i>Intercept</i>	?	-0.030	-3.72 ***
$NI_{i,t}^a$	+	0.651	34.35 ***
$rAOCI_{i,t-1}$?	0.734	0.54
$BV_{i,t}^C$	+	0.179	32.03 ***
$AOCI_{i,t}$?	0.019	0.39
Controls included		Yes	
Year dummies included		Yes	
<i>Obs.</i>		4,471	
$R^2_{Model D}$		0.469	
<i>Incremental %</i> ($R^2_{Model D} - R^2_{Model C}$)		0.00%	

Panel C: Regression of quasi-clean surplus Model Q, inclusive of AOCI and OCI

<u>Variables</u>	<u>Exp. Sign</u>	<u>Coeff.</u>	<u>t-statistic</u>
<i>Intercept</i>	?	-0.030	-3.73 ***
$NI_{i,t}^a$	+	0.652	34.37 ***
$OCI_{i,t}$?	0.152	1.55
$rAOCI_{i,t-1}$		2.934	1.49
$BV_{i,t}^C$	+	0.179	31.95 ***
$AOCI_{i,t}$?	-0.061	-0.92
Controls included		Yes	
Year dummies included		Yes	
<i>Obs.</i>		4,471	
$R^2_{Model Q}$		0.469	
<i>Incremental %</i> ($R^2_{Model Q} - R^2_{Model D}$)		0.00%	

Notes:

The regression equations are:

Clean Surplus Model C:

$$Perf_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t}^a + \alpha_2 BV_{i,t}^C + \eta_{i,t}$$

Dirty Surplus Model D:

$$Perf_{i,t+1} = \beta_0 + \beta_1 NI_{i,t}^a + \beta_2 rAOCI_{i,t-1} + \beta_3 BV_{i,t}^C + \beta_4 AOCI_{i,t} + \kappa_{i,t}$$

Quasi-Clean Surplus Model Q:

$$Perf_{i,t+1} = \gamma_0 + \gamma_1 NI_{i,t}^a + \gamma_2 OCI_{i,t} + \gamma_3 rAOCI_{i,t-1} + \gamma_4 BV_{i,t}^C + \gamma_5 AOCI_{i,t} + \mu_{i,t}$$

*, **, and *** signify two-tailed significance for at the ten-, five-, and one-percent level.

See notes from Table 2 for variable definitions.

We find that the results from Model C are in line with the findings of the prior literature, in that the coefficients on abnormal earnings (NI^a) and both book value of equity (BV^C) are positively related to future performance (coefficients of 0.653 and 0.179, respectively, both are significant at the one-percent level). When we consider our dirty surplus model (Model D) where AOCI is included as an adjustment to book-value, we find the adjusted- R^2 of Model D does not significantly differ from that of Model C. Further, neither of the coefficients on $rAOCI_{t-1}$ nor $AOCI_{i,t}$ are statistically significant. We also find that including OCI as a performance metric (Model Q) does not result in a significant increase in the adjusted- R^2 , nor is the coefficient on OCI being statistically significant.

Together, the results shown in Table 3 are in line with prior literature, which finds that OCI information is forecasting-irrelevant (Landsman et al. 2011). As discussed above, however, the predictive value of each OCI component is likely to vary in magnitude and sign. It is likely, therefore, that the lack of results from aggregate OCI found in both our study and Landsman et al. (2011) reflect the predictive value of one component negating the predictive value of other components. We examine this possibility next, by disaggregating OCI and AOCI into individual components in the dirty surplus and quasi-clean surplus models.

The results from testing the predictive ability of the disaggregated dirty surplus model (Disaggr D) are presented in Table 4, Panel A. We find that the coefficients on $rAAFS_{t-1}$ is negative (-1.985, significant at the one-percent level). We also find the coefficients on $AAFS_{i,t}$ and $AHDG_{i,t}$ are negative (coefficients of -0.150 and -0.749, respectively, significant at the ten- and one-percent levels). In contrast, we find positive coefficients on both $AFCT_{i,t}$ and $ARVL_{i,t}$ (coefficients of 0.110 and 0.240, respectively, significant at the ten- and one-percent levels). The variation in magnitudes and signs of the OCI components is indicative of the aggregation of OCI negating the predictive value of the individual components, such that the predictive values of aggregate OCI and AOCI are not significant. Overall, we find that the inclusion of AOCI components as adjustments to book value in Disaggr D results in a significant improvement (at the one-percent level) of 3.62 percent in explanatory power over the clean surplus model in Model C, thus supporting H1.

TABLE 4

Tests of H1 and H2: OLS Results from regressing model Disaggr D and model Disaggr Q

Panel A: Regression of dirty surplus Disaggr D, inclusive of AOCI and exclusive of OCI com

<u>Variables</u>	<u>Exp. Sign</u>	<u>Coeff.</u>	<u>t-statistic</u>
<i>Intercept</i>	?	-0.023	-2.89 ***
$NI_{i,t}^a$	+	0.660	35.19 ***
$rAFCT_{i,t-1}$?	0.966	1.25
$rAAFS_{i,t-1}$?	-1.985	-3.63 ***
$rAPEN_{i,t-1}$?	-7.407	-0.92
$rAHDG_{i,t-1}$?	-1.374	-0.92
$rARVL_{i,t-1}$?	-0.191	-2.53 **
$BV_{i,t}^C$	+	0.177	31.82 ***
$AFCT_{i,t}$?	0.110	1.77 *
$AAFS_{i,t}$?	-0.150	-1.87 *
$APEN_{i,t}$?	0.283	1.37
$AHDG_{i,t}$?	-0.749	-6.53 ***
$ARVL_{i,t}$?	0.240	5.82 ***
Controls included		Yes	
Year dummies included		Yes	
Obs.		4,471	
$R^2_{Disaggr D}$		0.486	
Incremental % $(R^2_{Disaggr D} - R^2_{Model C})$		3.62% ***	

The results from testing the predictive ability of the disaggregated quasi-clean surplus model (Disaggr Q) are presented in Table 4, Panel B. We again find variation in magnitudes and signs of the AOCI components when testing Disaggr Q, but the variation in magnitudes and signs differ from the magnitudes and signs found testing Disaggr D. This differences across the various components we find in Disaggr Q from that in Disaggr D is indicative of high correlations among the OCI and AOCI components, as Easton and Zhang (2015) suggest.

Specifically, we find from testing Disaggr Q, the coefficient on $rAPEN_{t-1}$ continues to be negative (-2.034, significant at the one-percent level), but in contrast to the Disaggr D results, we also find a negative coefficient on $rARVL_{t-1}$ (-1.239, significant at the one-percent level) and positive coefficients on $rAFCT_{t-1}$ and $rAAFS_{t-1}$ (coefficients of 0.661 and 1.568, respectively, significant at the one- and ten-percent level). We also find consistent results between the Disaggr Q and Disaggr D models for $AHDG_{i,t}$ and $ARVL_{i,t}$ (coefficients of -0.761 and 0.292, respectively, both significant at the one-percent level). In contrast, we find the coefficients on $AFCT_{i,t}$ and $AAFS_{i,t}$ are not significant, and a positive coefficient on $APEN_{i,t}$ (0.678, significant at the five-percent level).

TABLE 4 - CONTINUED

Panel B: Regression of quasi-clean surplus Disagg Q, inclusive of AOCI and OCI component

<u>Variables</u>	<u>Exp. Sign</u>	<u>Coeff.</u>	<u>t-statistic</u>
<i>Intercept</i>	?	-0.023	-2.79 ***
$NI_{i,t}^a$	+	0.210	2.10 **
$FCT_{i,t}$?	-0.008	-0.05
$AFS_{i,t}$?	-0.145	-1.64
$PEN_{i,t}$?	-1.191	-1.67 *
$HDG_{i,t}$?	0.067	0.36
$RVL_{i,t}$?	-0.912	-2.72 ***
$rAFCT_{i,t-1}$?	0.661	35.30 ***
$rAAFS_{i,t-1}$?	1.568	1.89 *
$rAPEN_{i,t-1}$?	-2.034	-3.52 ***
$rAHDG_{i,t-1}$?	-9.584	-1.15
$rARVL_{i,t-1}$?	-1.239	-0.74 ***
$BV_{i,t}^C$	+	0.177	31.69 ***
$AFCT_{i,t}$?	0.031	0.43
$AAFS_{i,t}$?	-0.145	-1.64
$APEN_{i,t}$?	0.678	2.18 **
$AHDG_{i,t}$?	-0.761	-5.19 ***
$ARVL_{i,t}$?	0.292	6.43 ***
Controls included		Yes	
Year dummies included		Yes	
Obs.		4,471	
$R_{DisaggQ}^2$		0.488	
Incremental % ($R_{DisaggQ}^2 - R_{DisaggD}^2$)		0.41% ***	

Notes:

The regression equations are:

Clean Surplus Model C:

$$Perf_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t}^a + \alpha_2 BV_{i,t}^C + \eta_{i,t}$$

Dirty Surplus Disagg D:

$$\begin{aligned} Perf_{i,t+1} = & \lambda_0 + \lambda_1 NI_{i,t}^a + \lambda_2 rAFCT_{i,t-1} + \lambda_3 rAAFS_{i,t-1} + \lambda_4 rAPEN_{i,t-1} \\ & + \lambda_5 rAHDG_{i,t-1} + \lambda_6 rARVL_{i,t-1} + \lambda_7 BV_{i,t}^C + \lambda_8 AFCT_{i,t} + \lambda_9 AAFS_{i,t} \\ & + \lambda_{10} APEN_{i,t} + \lambda_{11} AHDG_{i,t} + \lambda_{12} ARVL_{i,t} + \sigma_{i,t} \end{aligned}$$

Quasi-Clean Surplus Disagg Q:

$$\begin{aligned}
Perf_{i,t+1} = & \theta_0 + \theta_1 NI_{i,t}^a + \theta_2 FCT_{i,t} + \theta_3 AFS_{i,t} + \theta_4 PEN_{i,t} + \theta_5 HDG_{i,t} + \theta_6 RVL_{i,t} \\
& + \theta_7 rAFCT_{i,t-1} + \theta_8 rAAFS_{i,t-1} + \theta_9 rAPEN_{i,t-1} + \theta_{10} rAHDG_{i,t-1} + \theta_{11} rARVL_{i,t-1} \\
& + \theta_{12} BV_{i,t}^C + \theta_{13} AFCT_{i,t} + \theta_{14} AAFS_{i,t} + \theta_{15} APEN_{i,t} + \theta_{16} AHDG_{i,t} + \theta_{17} ARVL_{i,t} + \tau_{i,t}
\end{aligned}$$

*, **, and *** signify two-tailed significance for at the ten-, five-, and one-percent level.
See notes from Table 2 for variable definitions.

Focusing on the performance metrics for the OCI components from Disagg Q, we find the coefficients on both $PEN_{i,t}$ and $RVL_{i,t}$ are negative (coefficients of -1.191 and -0.912, respectively, significant at the ten- and one-percent levels). These findings are indicative of the expectation that gains in both pensions and asset revaluations reverse in future periods, as suggested by prior research (Chambers et al. 2007). Overall, we find that the inclusion of OCI components as performance metrics in the quasi-clean surplus model, Disagg Q, provides a modest improvement in the adjusted-R² by 0.41 percent (significant at the one-percent level) over the adjusted-R² of Disagg D. Thus our findings supporting H2 to the extent that financial statement users focus on the individual OCI components reported on the Statement of Comprehensive income, rather CI as a bottom-line summary statistic of performance.

5.2 Additional tests of hypotheses⁷

In our main tests we use EBITDA as our measure of future performance. In order to evaluate the sensitivity of our results to different performance metrics, we rerun our tests using future earnings before interest and taxes (EBIT), future earnings before extraordinary items (IB), future comprehensive income (CI), and future cash flows from operations (CFO). We reach similar conclusions when comparing the explanatory power of each model.

We retest Model C, Disagg D, and Disagg Q to identify the variation in predictiveness of our models across countries. We find the adjusted-R²s are significantly greater (all at least at the five-percent level) from the by-country tests of Disagg D than Model C, with the exception of Finland and Ireland. As might be expected for Finland and Ireland (from untabulated results), none of the coefficients on the AOCI components are significant. We also find only four countries exhibit significant differences in the adjusted-R²s between Disagg Q and Disagg D: Ireland, Italy, Spain, and the United Kingdom (significant at the five-, ten-, five-, and one-percent level, respectively). We find (from untabulated results), OCI components that are predictive of future performance (at least at the ten-percent level) are foreign currency translations (Ireland, Italy and UK), cash flow hedges (Spain and Italy), pensions (UK), and revaluations (UK).

Together, the variations we observe across the 13 EU countries are consistent with OCI reflecting the environment in which a firm operates. The variation we find in our by-country and by-industry results reflect IASB's point from the *Conceptual Framework* that OCI provides a firm the opportunity to separately report from P&L those items that have different implications on a firm's prospects (IASB 2013).

6. CONCLUSION

Over the past decade, both the IASB and FASB moved towards reporting comprehensive income (CI) as the primary summary performance statistic, by requiring net income (P&L) and other comprehensive income (OCI) items be reported on the Statement of Comprehensive Income. This reporting requirement effectively results in OCI being treated as a performance metric. The IASB points out that the reason OCI items are reported separately from P&L on the Statement of Comprehensive Income is because this separation identifies how the return on equity differs across

⁷ We do not present the tables in this version of the paper due to the maximum number of pages allowed for submission.

each component (IASB 2013). Focusing on CI as a summary performance statistic, or even aggregating the various components of OCI into a single measure, therefore, would be counter to the IASB's goal of providing information about the decision usefulness of each component.

In this study, we examine the decision usefulness of the components of OCI by testing the predictive value of reporting OCI items as a performance metric, incrementally to the predictive value of the accounting treatment of accumulating OCI items in equity. The IASB and FASB both express the belief that the usefulness of financial reporting depends on its ability to help investors assess the future prospects of a firm (IAS 1, par OB3; SFAS 8, par OB3). Based on a sample of firms from IFRS adopting countries within the EU, we provide evidence that reporting OCI components as performance provides a modest incremental improvement in predictiveness, relative to the significant improvement attributable to the accumulation of OCI in equity.

We find that the predictive value of specific OCI components vary, and vary by country and industry. This variation we document supports the IASB's reasoning for requiring OCI items to be reported separately on the Statement of Comprehensive Income. Importantly, we find no predictive value to the reporting of OCI items in aggregate, either in terms of a performance metric or through the accumulation of OCI in equity, similar to the findings of Landsman et al. (2011) and others. Our finding that aggregation of OCI components into a single summary statistic obfuscates the predictive value of specific OCI components, therefore, provides an explanation for why the extant literature has failed to find CI providing predictive value beyond that of P&L.

Currently, both the IASB and FASB allow the Statement of Comprehensive Income to be reported as one statement, where CI is reported as the bottom-line summary statistic of performance; or, as two consecutive statements with OCI components being reported on a separate statement. The IASB is contemplating, however, eliminating the two-statement approach (IASB 2016). Our finding that aggregation of OCI components into a single summary statistic obfuscates the predictive value of specific OCI components, raises questions about the fit of CI to serve as a summary performance statistic and the decision usefulness of the one-statement approach.

In summary, our findings that the information reported about specific OCI components on the Statement of Comprehensive Income has predictive value suggests that the managers' fears that reporting components of OCI as performance would mislead investors are overblown. We conclude that by allowing firms to continue using the two-statement approach, the IASB would meet their goal of providing decision useful information, while mitigating the concern of managers and others that financial statement users would focus on a bottom-line summary statistic that obfuscates the predictive value of specific OCI components.

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