Other Comprehensive Income: A Review and Directions for Future Research

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What is Other Comprehensive Income (OCI)?

- Other Comprehensive Income (OCI)
  - "Revenues, expenses, gains and losses that under generally accepted accounting principles are included in comprehensive income but excluded from net income" (ASC Master Glossary).

- Arguments against including OCI in net income:
  - OCI is volatile and transitory.
  - Including OCI in net income would increase perceived risk.
  - Much of the variation in OCI is beyond managers' control (FASB, 1997).

- Arguments for including OCI in net income:
  - No conceptual basis for separating OCI from net income.
    - IASB ED/2015/3 is open for comment until Oct. 26, 2015.
      - Income or expenses are recognized in OCI if they "relate to assets or liabilities measured at current values; [and] excluding those items from the statement of profit or loss would enhance the relevance of the information in the statement of profit or loss for the period" (IASB 2015, p. 17).
  - Provides a more complete summary performance measure.
  - Managers choose and implement firm strategy and engage in economic transactions that result in OCI.

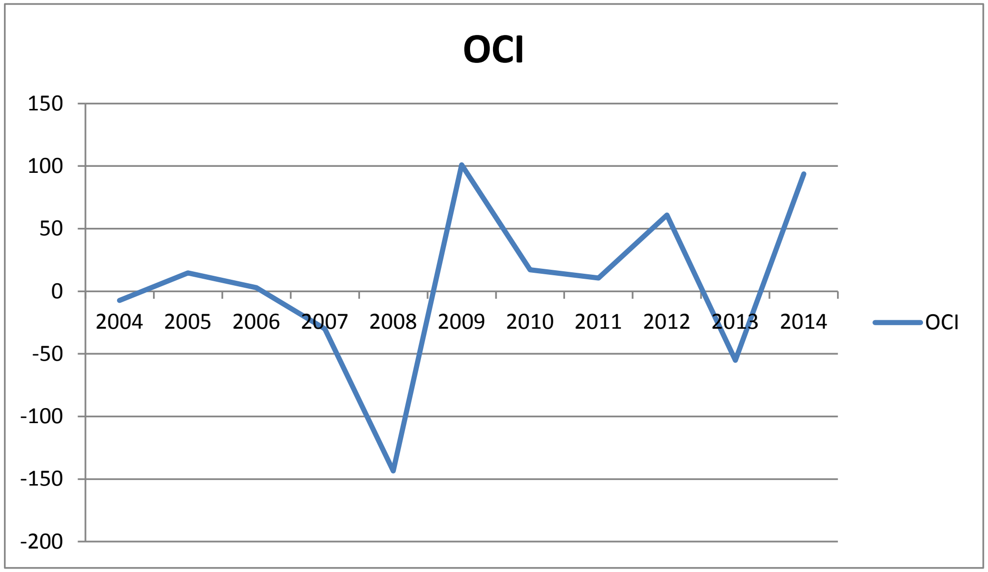
Correlations: OCI and OCI Components

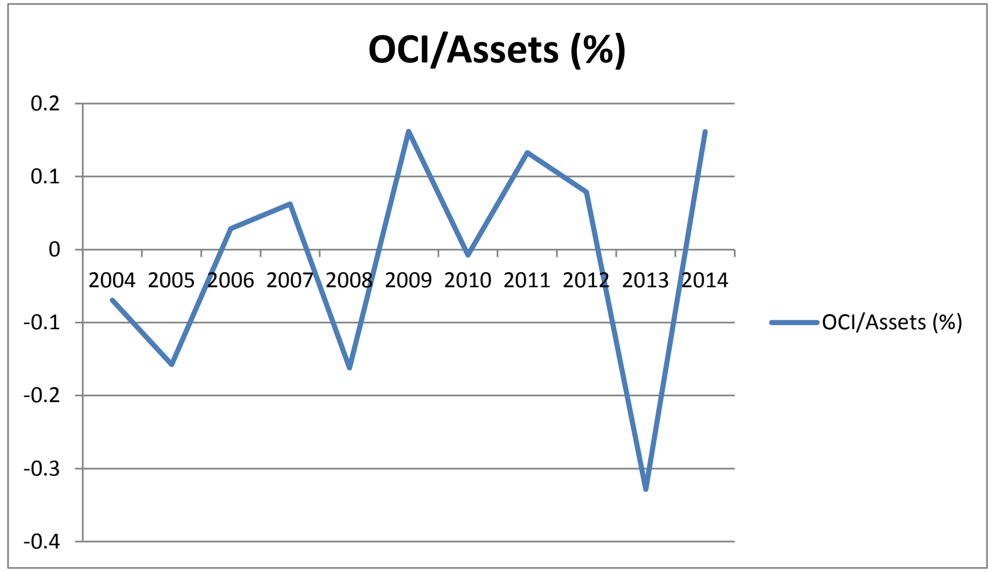
Sample	*AFS*	*DERIV*	*PEN*	*FC*	*OTHER*	Variable Measurement
Compustat Industrial Fundamentals Annual File (N = 72,801)	0.63*	0.22*	0.46*	0.63*	-0.08*	Unscaled
	0.04*	0.01	0.02*	0.77*	0.00	Scaled
Compustat Bank Fundamentals Annual File (N = 7,244)	0.85*	0.11*	0.44*	0.54*	-0.19*	Unscaled
	0.85*	0.05*	0.17*	0.07*	-0.09*	Scaled

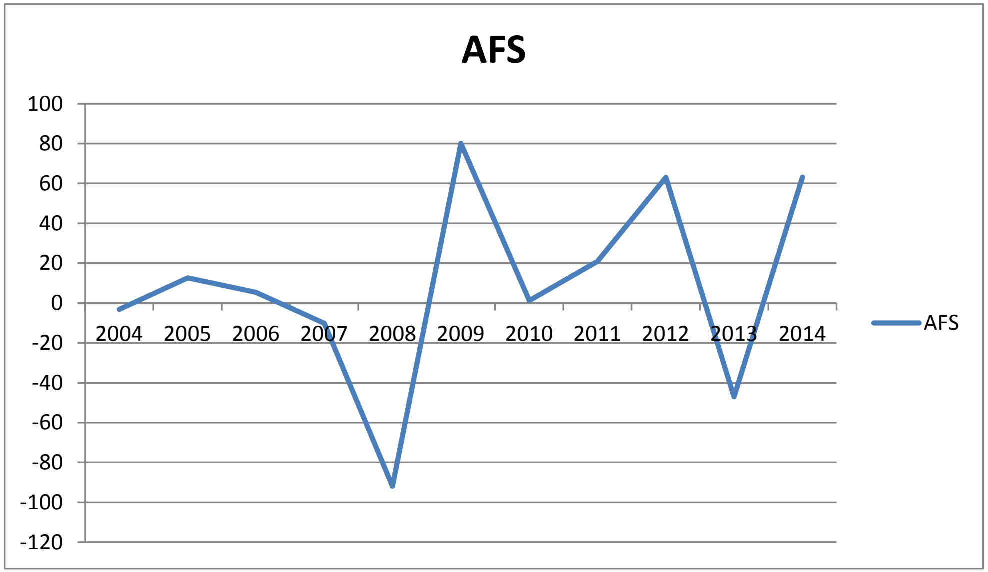
Scaled: (OCI component / Total Assets) * 100

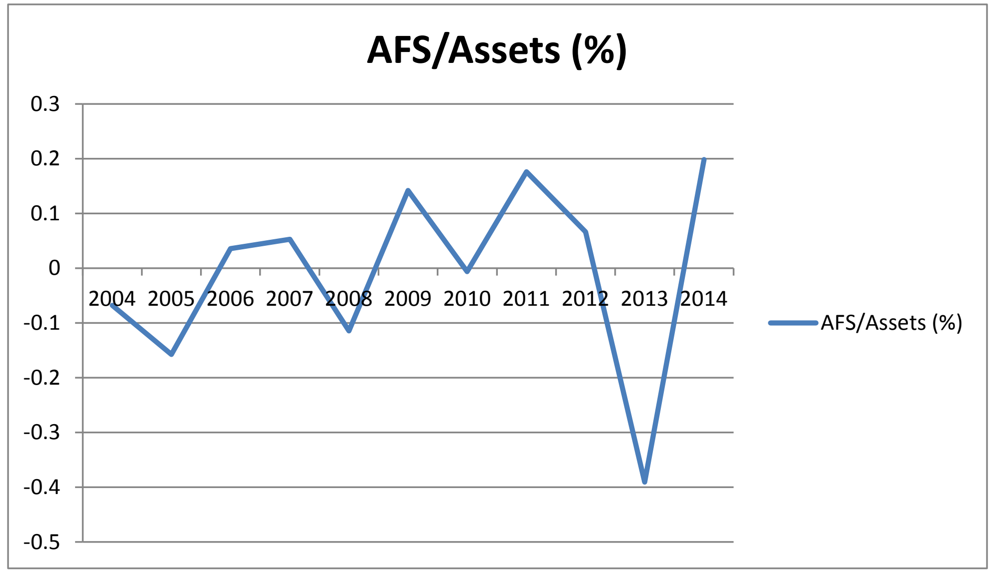
* Indicates statistical significance at the 0.05 level based on H_0: $\rho = 0$.

U.S. GAAP – Compustat Bank File

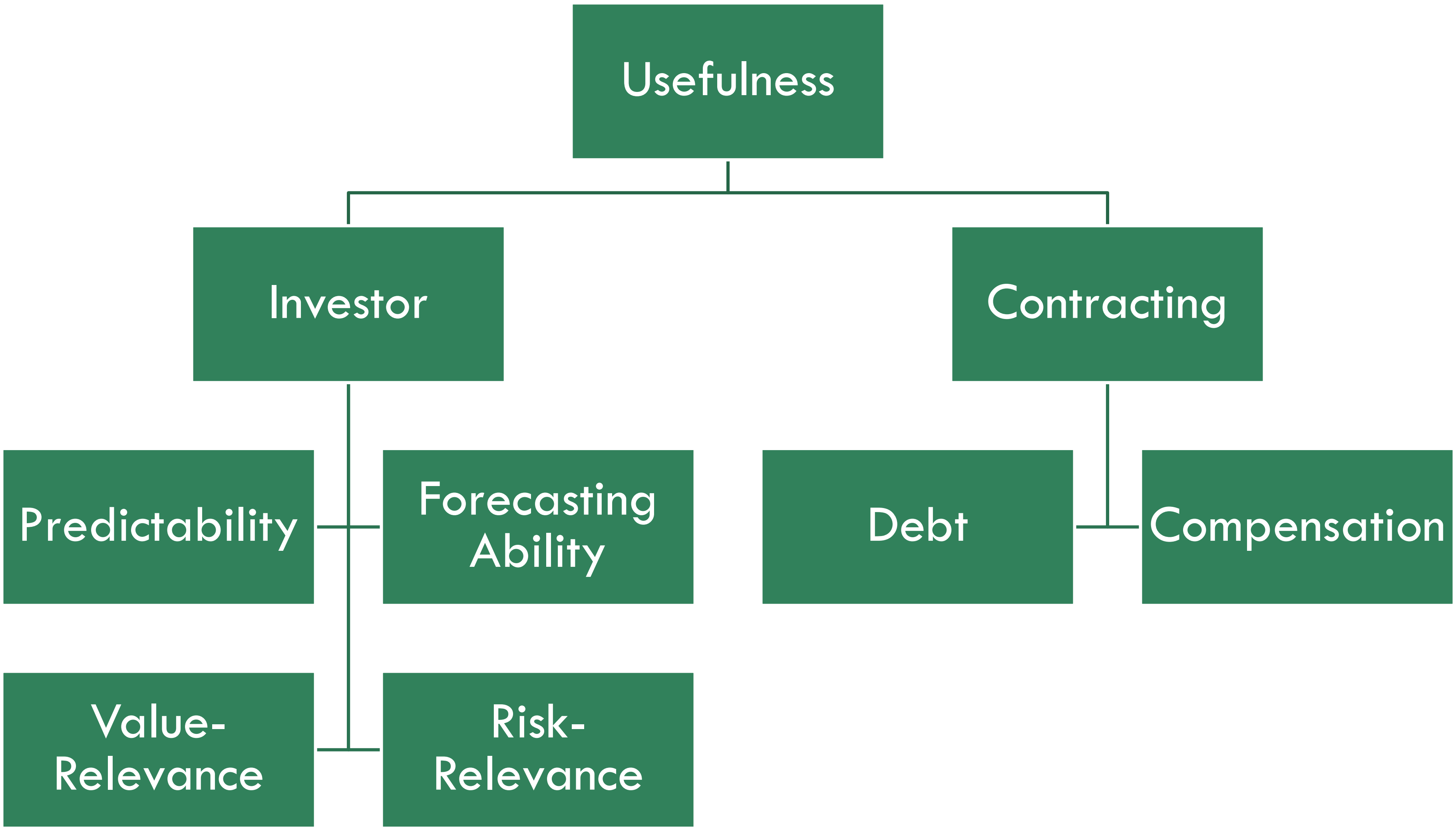








Framework for Assessing Usefulness



Predictability and Forecasting Ability

- Predictability

$$OCI_{t+1} = \beta_0 + \beta_1 OCI_t + \varepsilon_{it+1}$$

  - OCI is less persistent than special items (Jones and Smith 2011) – U.S. firms (1986-2005).

- Forecasting Ability

$$NI_{t+1} = \beta_0 + \beta_1 OCI_t + \varepsilon_{it+1}$$
$$CFO_{t+1} = \beta_0 + \beta_1 OCI_t + \varepsilon_{it+1}$$

  - OCI is a worse predictor of NI and CFO than is net income.
    - Jones and Smith (2011) – U.S. firms (1986-2005).
    - Goncharov and Hodgson (2011) – European firms from (1991-2005).
  - Unrealized gains and losses on AFS securities predict CFO (Kanagaretnam et al. (2009) – Canadian firms (1998-2003).
  - Few (if any) studies examine the ability of CI or OCI to predict abnormal net CI or abnormal net OCI (Ohlson 1999).

Value-Relevance

$$Price = \beta_0 + \beta_1 OCI + \varepsilon$$

$$Returns = \beta_0 + \beta_1 OCI + \varepsilon$$

Price-Relevance

- OCI is price-irrelevant, or not as price-relevant as NI.
  - Landman et al. (2011) – U.S. firms (1976-2006).
  - Goncharov and Hodgson (2011) – European firms (1991-2005).
- Mixed evidence on whether unrealized gains and losses on AFS securities are price-relevant.
  - Price-relevant
    - Kanagaretnam et al. (2009) – Canadian firms (1998-2003).
  - Price-irrelevant
    - Goncharov and Hodgson (2011) – European firms (1991-2005).

Returns-Relevance

- OCI is relevant, but transitory.
  - Chambers et al. (2007) – S&P 500 firms (1994-2003).
    - OCI is relevant, but transitory, when using actual financial statement data rather than estimating OCI.
  - Jones and Smith (2011) – U.S. firms (1986-2005).
    - OCI is relevant, but less relevant than special items.
  - Goncharov and Hodgson (2011) – European firms (1991-2005).
    - OCI is relevant, but less relevant than net income.
  - Investors correctly price OCI (Landsman et al. 2011) – U.S. firms (1976-2006).

OCI Component Returns-Relevance

- Unrealized gains and losses on AFS securities are returns-relevant.
  - Chambers et al. (2007) – S&P 500 firms (1994-2003).
    - Coefficient greater than zero, one, and the coefficient on net income.
    - Dong et al. (2014) explain this large coefficient by considering reclassification adjustments.
  - Kanagaretnam et al. (2009) – Canadian firms (1998-2003).
  - Goncharov and Hodgson (2011) – European firms (1991-2005).

Value-Relevance and Presentation

- Do performance statements improve OCI value-relevance?
  - Improves
    - Hirst and Hopkins (1998) – Experiment with analysts.
  - Does not improve
    - Maines and McDaniel (2000) – Experiment with MBA students.
    - Chambers et al. (2007) – S&P 500 (1994-2003).
      - SCE presentation is the most returns-relevant presentation for OCI.
      - But, presentation is only matters for pension-related adjustments.
    - Schaberl and Victoravich 2015 – U.S. firms (2010-2013).
      - Firms transitioning from SCE to performance statement presentation experience a loss in OCI value-relevance.
- Unclear whether clarity in presentation or experience with a given presentation method matters most.
- Firms that manage earnings and firms with low disclosure quality are less likely to report earnings in a performance statement (Lee et al. 2006).

Future Research on Value-Relevance

- Do investors respond to:
  - OCI news?
  - Presentation choice?
- How are the findings in prior work affected by considering reclassification adjustments for OCI components other than AFS securities adjustments?
- Do investors differentially price:
  - Parent and non-controlling interest portions of OCI?
  - Tax effects of OCI components presented on the face of the financial statements versus the notes?
  - OCI components that may be reclassified versus those that may not be?

Risk-Relevance

$$Risk = \beta_0 + \beta_1 \sigma OCI + \varepsilon$$

$$Price = \beta_0 + \beta_1 AE + \beta_2 AE \times \sigma OCI + \varepsilon$$

Risk-Relevance

- Is OCI Risk-Relevant?
  - No
    - Hodder et al. (2006) – U.S. bank holding companies (1996-2004).
    - Khan and Bradbury (2014) – U.S. non-financial firms (2005-2010).
    - Khan and Bradbury (2015) – New Zealand non-financial firms (2003-2010).
    - Black (2014) – U.S. bank holding companies (1998-2012).
      - OCI volatility measured directly has no association with risk.
      - Incremental CI volatility has a significant negative relation with risk.

- Are OCI components risk-relevant?
  - Black (2014) – U.S. bank holding companies from 1998-2012.
    - Volatilities of unrealized gains and losses on AFS securities and cash-flow hedges, typically deemed beyond managers' control, are negatively associated with risk.
    - Volatilities of OTTI losses, over which managers have relatively more control, are positively associated with risk.
    - Consistent with Badertscher et al. (2014, p. 812)
      - OTTI are "negative signals about investment strategy or quality."
      - Non-credit OTTI losses "may be viewed as a less negative signal about investment strategy or quality."

Risk-Relevance and Presentation

- Investors better incorporate AFS adjustment volatility in stock risk judgments when OCI is presented in a performance statement
  - Maines and McDaniel (2000) – MBA students.

- Managers do not "hide" the volatility of comprehensive income (or OCI) using presentation method choices.
  - Lee et al. (2006) – Insurance firms (1998).

Risk-Relevance and Basel III

- Prior to Basel III, only unrealized gains and losses on AFS equity securities and foreign currency translation adjustments were included in Tier 1 Capital (FDIC 2013).
- Basel III recommends the inclusion of substantially all of AOCI in Tier 1 Capital (Basel 2011).
- The U.S. FDIC required adoption of Basel III as of January 1, 2014 for the largest U.S. banks.
  - 20% inclusion in 2014, 40% in 2015, 60% in 2016, 80% in 2017, and 100% in 2018.

Risk-Relevance and Basel III

- Black (2014) finds:
  - Tier 1 Capital as calculated per the requirements of Basel III is no more volatile than pre-Basel III Tier 1 Capital.
  - Volatilities of AOCI components new to Tier 1 Capital are not positively associated with risk.

Future Research on OCI Risk-Relevance

- To what extent do associations between OCI component volatilities and risk reflect hedging?
- Managers disclose estimates of future reclassification adjustments.
  - Does the market respond to these estimates?
  - Does greater predictive ability for reclassification adjustments represent greater expertise or greater opportunity to manage performance measures?
- Unrealized gains and losses on similar financial instruments are recognized in different places.
  - Does the risk-relevance of similar financial instruments (and their associated gains and losses) vary by where the gains and losses are recognized (net income versus OCI)?
  - Is OCI volatility more beyond managers' control than is net income volatility?

Future Research on Risk-Relevance: Basel III

- More data means more research opportunities.
- Commenters to the U.S. FDIC predicted that banks would: (FDIC, 2013, p. 146-147):
  - Invest “excessively in securities with low volatility.”
  - “Increase their overall capital levels to create a buffer above regulatory minimums.”
  - “Hedge or reduce the maturities of their AFS debt securities.”
  - “Shift more debt securities into their HTM [held-to-maturity] portfolio[s].”
  - Cancel or curtail their defined benefit pension plans.
- Is Basel III especially costly for small banks?
- Does Basel III lead to a decrease in lending due to banks’ keeping more capital on hand?

Contracting Usefulness

- Skinner (1999) recommends examining the contracting usefulness of CI (and thereby OCI).
- Ohlson (1999) indicates that the usefulness of CI and OCI depends on:
  - Manager effort informativeness.
  - Predictability and predictive ability.
- IASB ED/2015/3 (p. 7) "clarifies that the information needed to meet the objective of financial reporting includes information that can be used to help assess management's stewardship of the entity's resources."

Debt Contracting

- Li (2010) – U.S. loan agreements (1996-2005).
  - Very few financial firm borrower observations in the sample.
  - No debt covenants are written on comprehensive income.
  - However, 90% of contracts with a net worth covenant include AOCI in net worth.
  - AOCI (a “stock” measure) is useful for debt contracting, while OCI (a “flow” measure) appears to be less useful.

Compensation Contracting

- Biddle and Choi (2006)
  - CI, relative to NI, performs worse in explaining cash compensation.

- Bamber et al. (2010)
  - CEOs with strong equity incentives and low job security are more likely to report CI in a statement of changes in equity.

Future Research on Contracting Usefulness

- Is the use of OCI in debt contracts increasing in OCI persistence (Li 2010)?
- Do compensation committees adjust pay for OCI?
  - No direct evidence exists on whether executives are evaluated or paid based on OCI levels, changes, or volatilities.
  - Are financial firms more likely to adjust CEO pay for OCI?
- Managers may "discount earnings realized beyond their anticipated tenure with the firm" (Baber et al. 1999, p. 462).
  - Market measures of performance better reflect the expected value of investors' cash flows, and thus should be better measures of executive performance from an equity investor perspective.
  - Are performance measures that approach "full-fair-value income" more useful than net income for compensation contracting?

Research Design Issues

- Econometric Techniques
  - Most papers examine average associations between OCI and prices or returns.
    - Do these associations vary by firm, industry, time, or within the distributions of OCI, prices, and returns?
    - Are results robust to quantile and robust regression?
  - Returns, pay, and OCI evolve simultaneously and relatedly.
    - Instrument variables (Larcker and Rusticus, 2010).
    - Structural modeling (Gow et al. 2015).
  - OCI components are not reported randomly.
    - OCI may be reported sporadically or not at all (the OCI transaction choice).
    - Managers choose OCI presentation format (the OCI presentation choice).
    - Self-selection can be addressed using:
      - Heckman (1979) two-step procedures.
      - Propensity-score matching (Armstrong et al. 2010).

Research Design Issues

- Research Setting
  - Multi-Period Analysis
    - OCI transactions derive from managers' attempts to implement strategy.
      - For instance, when making a decision on whether to use a cash-flow hedge, a manager may consider the duration of the hedge contract and what percentage of a cash inflow or outflow to hedge if some (non-zero) amount of overall risk exposure is desirable for a firm.
    - Strategies vary over time.
    - Managers' incentives vary over time.
    - A dynamic, multi-period analysis relating firm strategy to transactions, and then to OCI reporting, could yield new insights into how firm strategy, manager horizon, and changes in strategy affect OCI reporting, and through OCI reporting, the assessed value and risk of the firm and manager pay.

Research Design Issues

- Research Setting
  - Sample Selection
    - Most evidence comes from large publicly available datasets.
    - Could the literature benefit from focused small sample studies?
    - For example, to learn more about the relation between OCI and contracting, one could perform a detailed analysis of proxy statements.
      - Post-2006 in the U.S. because SEC compensation disclosure rules were enhanced.
      - CFOs vs. CEOs.
    - Like banks, insurance companies engage in large volumes of securities and derivatives transactions.
      - The insurance regulatory environment is evolving at different speeds in different parts of the world (Solvency II in Europe, for example).

Conclusion

- OCI and AOCI continue to be at the center of both standard setting and regulatory debate.
- Our understanding of OCI could be enhanced by:
  - More direct evidence on the value of OCI recognition and disclosure for investing and contracting.
  - More evidence on the types of firms for which OCI is important, and whether this importance varies with microeconomic and macroeconomic conditions.
  - More sophisticated research methods.

U.S. GAAP

Other Comprehensive Income Component (ASC 220-10-45-10A)	**Reference**
Unrealized holdings gains and losses on available-for-sale securities.	*ASC 320-10-45-1*
Unrealized holdings gains and losses that result from a debt security being transferred into the available-for-sale category from the held-to-maturity category.	*ASC 830-30-45-12*
Amounts recognized in other comprehensive income for debt securities classified as available-for-sale and held-to-maturity related to an other-than-temporary impairment recognized in accordance with ASC 320-10-35 if a portion of the impairment was not recognized in earnings.	*ASC 320-10-35*
Subsequent decreases (if not an other-than-temporary impairment) or increases in the fair value of available-for-sale securities previously written down as impaired.	*ASC 320-10-35-18*
Gains and losses (effective portion) on derivative instruments that are designated as, and qualify as, cash-flow hedges.	*ASC 815-20-35-1(c)*
Gains or losses associated with pension or other postretirement benefits (that are not recognized immediately as a component of net periodic benefit cost).	*ASC 715-20-50-1(j)*
Prior service costs or credits associated with pension or other postretirement benefits.	*ASC 715-20-50-1(j)*
Transition assets or obligations associated with pension or other postretirement benefits (that are not recognized immediately as a component of net periodic benefit cost).	*ASC 715-20-50-1(j)*
Foreign currency translation adjustments.	*ASC 830-30-45-12*
Gains and losses on foreign currency transactions that are designated as, and are effective as, economic hedges of a net investment in a foreign entity, commencing as of the designation date.	*ASC 830-20-35-3(a)*
Gains and losses on intra-entity foreign currency transactions that are of a long-term-investment nature (that is, settlement is not planned or anticipated in the foreseeable future), when the entities to the transaction are consolidated, combined, or accounted for by the equity method in the reporting entity's financial statements.	*ASC 830-20-35-3(b)*

IFRS

Other Comprehensive Income Component (http://www.iasplus.com/en/standards/ias/ias1)	Reference
Changes in revaluation allowance for property, plant, and equipment and intangible assets.	*IAS 16, IAS 38*
Remeasurement changes in a net defined benefit asset or liability.	*IAS 19*
Exchange rate differences arising from translating functional currencies to presentation currency.	*IAS 21*
Unrealized gains and losses on available-for-sale securities.	*IAS 39*
Gains and losses on effective portion of cash flow hedge instruments.	*IAS 39, IFRS 9*
Unrealized gains and losses on equity investments chosen to be presented in OCI.	*IFRS 9*
Adjustments related to changes in credit risk of a financial liability measured at fair value through net income.	*IFRS 9*
Correction of errors and changes in accounting policy required to be recognized outside of net income.	*IAS 8*