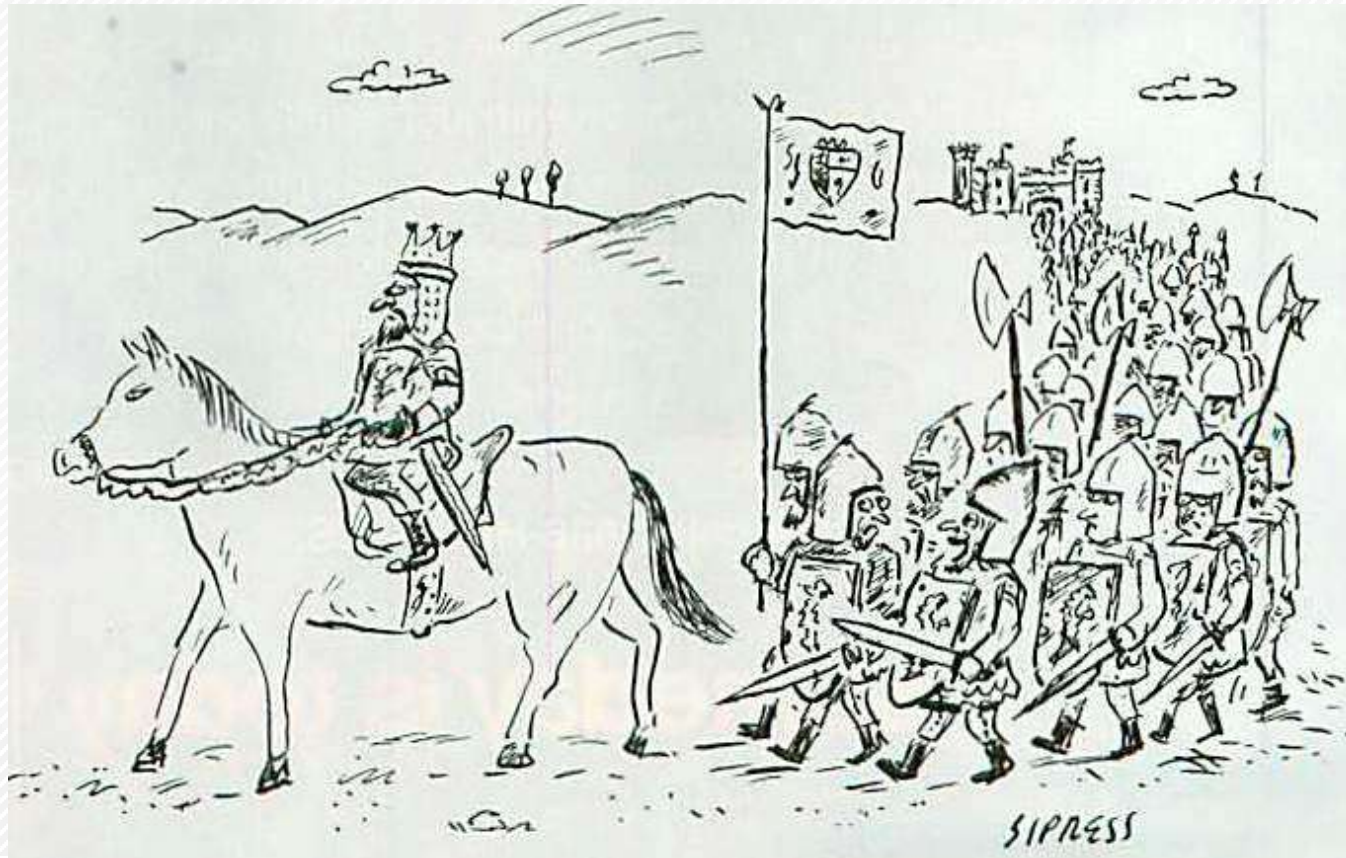# Fair Value Accounting: Perspectives for Future Research

Cathy Shakespeare

Fair Value Accounting

Fair Value Accounting….
Accounting Crusades

Can we ever coexist?

- "It is not enough even that all exposures be identified. An institution's assets must also be valued at their fair market value – the price at which willing buyers and sellers transact – not at the (frequently irrelevant) historic value"
  - To avoid crises, we need more transparency. Lloyd Blankfein October 12, 2009 Financial Times
- "Requiring banking institutions to follow mark to market accounting – simply because the nature of their business is financial – ignores the traditional bank business model and puts banks at a disadvantage."
  - American Bankers Association, Letter to U.S. Treasury Secretary Geithner and U.S. Federal Reserve Chair Bernanke Re G20 Accounting Recommendations, September 9, 2009

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Academics can co-exist right?

- "Generally speaking, fair value accounting puts a lot of faith in market prices and elevates them into an unfailing standard of correctness. This is a dangerous premise when market prices can deviate from fundamental values…"
  - Ilia Dichev, "On the balance sheet-based model of financial reporting", Accounting Horizons 22 (4), December 2008, 453-47

- "Historic cost accounting is not designed to reflect the effects of changes in interest rates as they occur. In fact, it makes no recurring provision for interest rate risk at all. Furthermore, the effects of changes in credit risk are only reflected in the historic cost model through management's estimates of impairment losses on financial assets."
  - Tom Linsmeier, "Financial Reporting and Financial Crises: The Case for Measuring Financial Instruments at Fair Value in the Financial Statements." Accounting Horizons (25), 409-417.

- "While there is discretion associated with estimating accruals in nearly all areas of accounting, we argue the subjectivity inherent in estimating the current fair value of goodwill is greater than that in most other asset classes such as accounts receivables, inventories, and plant"
  - Karthik Ramanna and Ross Watts, "Evidence on the use of unverifiable estimates in required goodwill impairment" Review Account Studies (2012) 17:749–780

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Development of Fair Value Accounting in the US

SFAS 107 issued 1991 requires disclosures of fair values of financial instruments

SFAS 115 issued 1993 requires fair value for marketable securities

SFAS 119 issued 1994 requires the disclosure of fair value of derivatives

SFAS 133 issued 1998 requires fair value for derivatives

SFAS 157 issued 2006 standardizes the definition and estimation process

SFAS 159 issued 2007 gives an option to fair value other financial instruments

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What is Fair Value?

- Since SFAS 157, fair value is defined as "The price that would be received to sell an asset or paid to transfer a liability in an <u>orderly transaction</u> between <u>market participants</u> at the measurement date"

  - Fair value is defined as a exit value

  - A hypothetical transactions in an active market that is not a forced sale

  - Fair value is "highest and best use"

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Importance of Fair Value for Financial Institutions

Fair Value of Assets
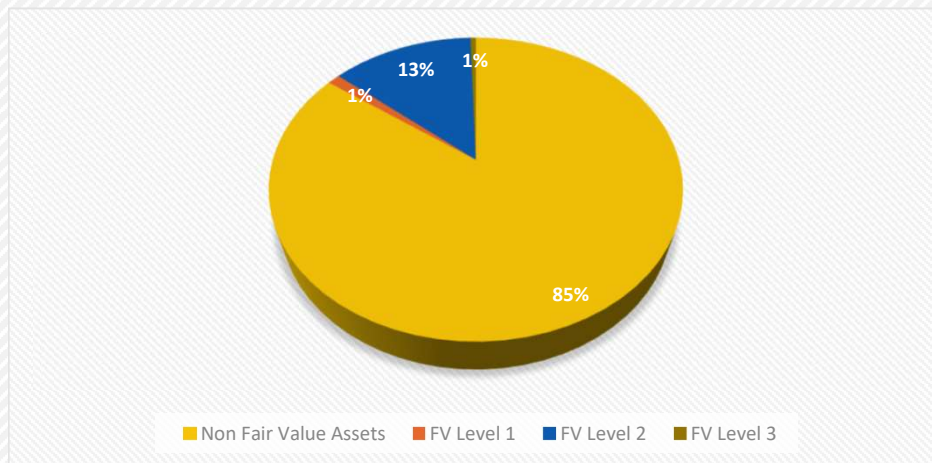
Fair Value of Liabilities
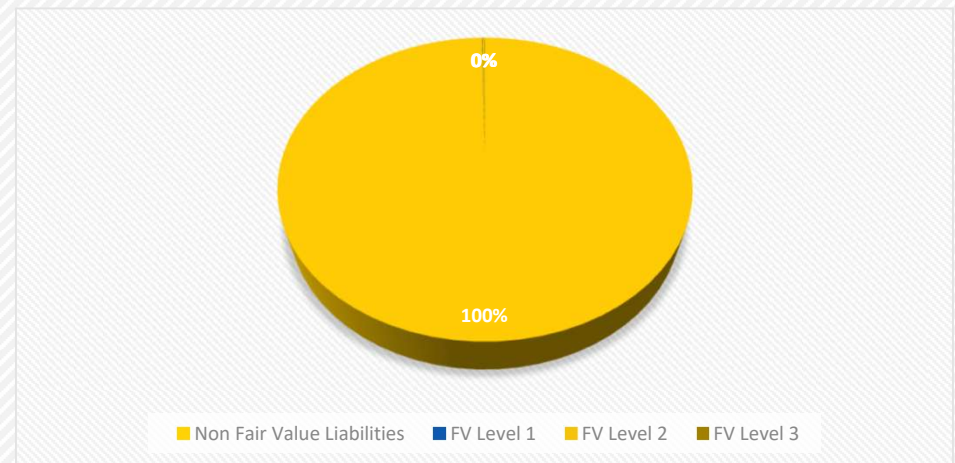
Source: Song, Thomas, Yi, The Accounting Review, 2010

Importance of Fair Value for Financial Institutions

	Large Bank Holdings Companies	Smaller Bank Holdings Companies		Large Investment Banks
Trading Assets	12.22%	0.71%	Trading Assets	33.34%
Net trading assets	6.71%	0.37%	Net trading assets	15.66%
Other Securities	14.69%	20.67%	Collateralized agreements	39.54%
Available for Sale	14.56%	17.79%	Receivables	12.15%
HTM	0.13%	2.88%	Securities received as collateral	2.83%
Loans and Leases	47.28%	61.67%	Securities segregated for regulatory and other purposes	3.99%
Repo agreements	10.04%	2.41%		
Financial Instruments	87.83%	90.02%	Financial Instruments	97.73%
Total Assets	100%	100%	Total Assets	100%

Source: Laux and Leuz, (2010)

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Are disclosed fair values useful to investors?

- Some of the earliest studies examine the fair value disclosures. It was unclear whether the potential lack of reliability of fair value measures would subsume any relevant information for investors. Findings generally support that the disclosures provide significant explanatory power for bank share prices beyond that provided for book values.
    - For example, Barth (1994), Barth, Beaver, Landsman (1996), Eccher, Ramesh, Thiagarajan (1996), Nelson (1996)
- The results hold for a broad range of assets including derivatives
    - Venkatachalam (1996)

Are recognized fair value useful to investors?

- The introduction of SFAS 115 allowed for management to have some control over classification, i.e., intent based accounting. Intent based accounting is a double edged sword. Managers could use it to reveal information to investors or to manage results. Findings continue to show value relevance of fair value information incremental to historical costs
  - For example, Park, Park, Ro (1999), Khurana and Kim (2003)
- SFAS 157 not only standardized how fair values have been measured but also introduced disclosures that are designed to bucket the fair values by reliability of the measure, i.e., from observable prices to unobservable inputs into a valuation model. Results confirm the varying reliability of different levels but also show that other factors can influence the valuation coefficient
  - For example, Song, Thomas, Yi (2010)

But fair value amplified the credit crisis of 2008 right….

- Accounting rules require assets to be fair valued at market prices. In periods of falling prices, this causes significant reductions in equity, depleting a bank's capital. Banks are forced to sell assets to maintain capital and potentially solvency. These forced sales put further downward pressure on prices starting a spiraling down process.

- However, generally the empirical evidence is that fair value accounting did not exacerbate the crisis (Laux and Leuz, 2010).
  - Modifications to SFAS 157 in April 2009 were a response to political pressure.

Three areas of my research interest

- Relevance of fair value

- Fair Value and risk

- Fair values on a global stage

Koonce, Nelson, Shakespeare (2011)

- Holding constant the reliability of the measure, we examine the relevance of fair value for the valuation of financial instruments.
  - Archival tests are a joint test of relevance and reliability
- We investigate whether and how investors' judgements of fair value relevance for financial instruments are sensitive to three contexts
  - Whether fair values lead to losses versus gains
  - Whether fair values are applied to assets versus liabilities
  - Whether management intends to sell/settle soon versus hold to maturity

Relevance of Fair Value

- Proponents argue that, no matter the circumstances, fair value provides information about forgone opportunities, i.e., such information is always relevant to evaluation a firm.
  - Firm issues a fixed rate bond. Interest rates decline. Fair value loss is relevant as it represents a foregone opportunity
- If this is how investors consider fair value gains and losses, they are engaging in counterfactual reasoning (Roese, 1997).
  - Individuals undo outcomes by changing/mutating the cause that led to them.
- Counterfactual reasoning theory suggest when investors' judgements are likely to depend on context

Context Matters: What did we predict?

- Individuals will judge fair value losses as more relevant than fair value gains
  - Counterfactual reasoning is less likely with desirable outcomes
- Individuals will judge the fair value of financial assets as more relevant than the fair value of liabilities
  - Financial assets are more mutable than financial liabilities
    - In a sense, we are "asset thinkers"
- Individuals will judge the fair value of financial instruments that are to be sold/settled soon as more relevant than those that are to be held to maturity
  - Management intent likely influences investors' judgements about fair value relevance.

What do we find?

- Context matters.

- Investors consider fair value as more relevant for assets than for liabilities, even when the underlying economics of the instrument are held constant.

- These differential fair value judgments translate into differences about firm value.

Things that I still ponder

- Assets versus liabilities
  - I think we still have lots more to do in this area to really understand how investors perceptions and beliefs are impacted by whether the instrument is an asset or liability.
  - Additionally what can be done to aid investors understanding.

Fair Value and Risk

- At the heart of the ABA comments on fair value is the idea that fair value does not fairly represent a bank's business model.

  - Non-traded financial instruments should not be maintained at fair value if a bank intends to hold the instrument until collection/payment. Fair values are transitory and therefore will reverse before the instrument is fully collected at maturity.

- What is the relationship between fair value and risk?

Risk and Income: Hodder, Hopkins, Wahlen (2006)

- How do the volatilities of various income measures compare? Are the different measures of income volatility associated with market-based risk measures?
  - Net income
  - Comprehensive income
  - Full fair-value income: Constructed measure of income that includes unrealized gains and losses on all financial instruments and derivatives
- It is not clear that full fair-value income would be more volatile in a sample of commercial banks in the US due to the banks risk management strategies
  - Banks could have a natural hedge between the asset and liability sides of their balance sheets.
- Does the incremental components of the three income volatility metrics moderate the capitalization of earnings in banks' share prices and explain capital-market pricing of bank risk?

Risk and Income: Hodder, Hopkins, Wahlen (2006)

- Full fair value income volatility is significantly greater than net-income volatility for 90 percent of the sample banks, and significantly greater than comprehensive-income volatility for 77 percent of the sample banks.
  - Furthermore the evidence suggests that there is not a hedge as the fair value adjustments in comprehensive income do not negatively covary with the incremental fair value adjustments for full fair value income.
  - The volatility of the incremental full fair value-income adjustments greatly exceeds the volatility of fair-value adjustments recognized in comprehensive income

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Risk and Income: Hodder, Hopkins, Wahlen (2006)

- The volatilities of all three income measures exhibit varying degrees of positive correlation with market-risk factors and disclosed measures of market-risks.
  - Net income volatility exhibits the most consistent and robust correlations across the risk factors
- Full fair value income volatility correlates positively with the standard deviation in stock returns and banks' exposure to derivatives.
- The incremental volatility in full fair value income (beyond volatility in net income and comprehensive income) is positively associated with the
  - Standard deviation in stock returns
  - Market-model beta
  - Long-term interest-rate beta
- The incremental volatility in full fair value income negatively moderates the capitalization of abnormal earnings in bank share prices. Furthermore, the expected returns on bank equity are increasing in the incremental volatility in full fair value income.

Risk and Income: Hodder, Hopkins, Wahlen (2006)

- Banks are not fully hedged against year-to-year changes in fair values of their reported financial instruments.

- The volatility of incremental full fair value income captures elements of bank risk that the capital markets price, but that the volatilities of net income and incremental comprehensive income omit.

Information Risk: Riedl and Serafeim (2011)

- Does variation in the information risk across level 1 through 3 fair values lead to a higher cost of capital?

  – Predict opacity is increasing across the level 1 through 3

  – Predict variation in the information environment will lead certain groups of firms to exhibit relatively larger differences in opacity

  – Predict firms with ex ante higher-quality information environments better mitigate differences in information risk across the fair value designations

Information Risk: Riedl and Serafeim (2011)

- Results show that implied betas for level 3 financial assets are significantly larger relative to those for either level 1 or 2 financial assets, with implied betas increasing monotonically across the level 1, 2, and 3 categories consistent with increasing opacity.

- Furthermore, results show that firms with lower-quality information environments exhibit larger differences across the level 1, 2, and 3 designations relative to firms with higher-quality information environments.

- Combined, these results suggest that while greater information risk is associated with level 3 financial assets, this risk is mitigated through the firm's information environment

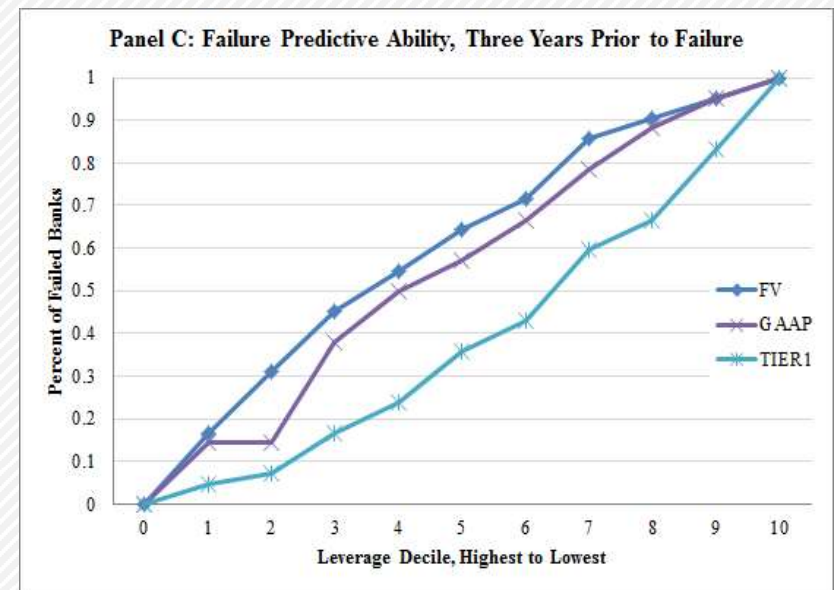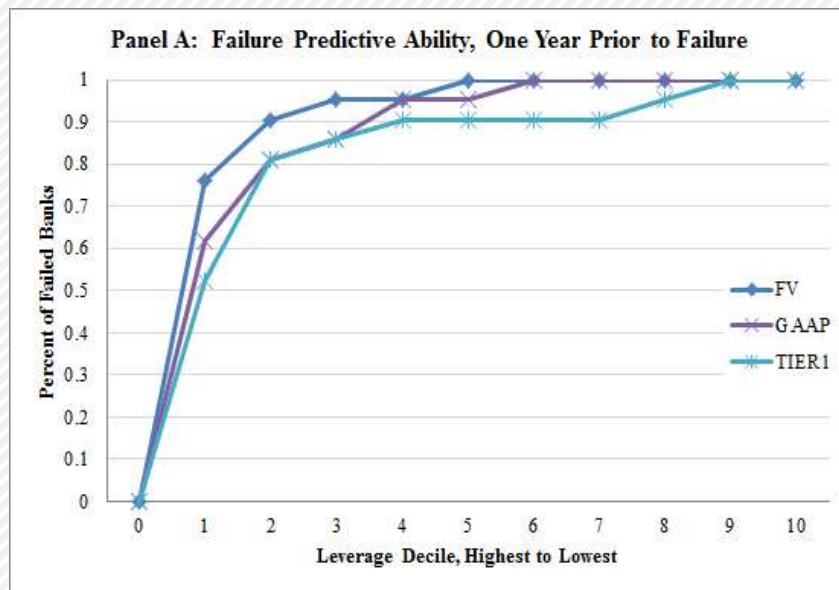# Risk and Leverage: Blankespoor, Linsmeier, Petroni, Shakespeare (2013)

- We examine whether financial statements using fair values for financial instruments better describe banks' credit risk than less fair-value based financial statements.
- Leverage ratios include financial instruments measured at
  - Fair value
  - US GAAP
  - Tier 1 regulatory capital
- Credit risk is measured
  - Bond yield spreads
  - Future bank failure

Risk and Leverage: Blankespoor, Linsmeier, Petroni, Shakespeare (2013)

	FV	GAAP	TIER1
Financial Assets			
Cash	FV	FV	FV
Trading Securities	FV	FV	FV
Available-for-Sale Securities	FV	FV	Cost[2]
Held-to-Maturity Securities	FV	Cost	Cost
Loans	FV	Cost	Cost
Derivatives	FV	Cost[1]	Cost[3]
Financial Liabilities			
Deposits	FV	Cost	Cost
Short-Term Borrowings	FV	Cost	Cost[4]
Long-Term Debt	FV	Cost	Cost[4]

Risk and Leverage: Blankespoor, Linsmeier, Petroni, Shakespeare (2013)

Failure Predictive Ability of Leverage Using Different Measurement Systems

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Risk and Leverage: Blankespoor, Linsmeier, Petroni, Shakespeare (2013)

- Bond yield results show the same pattern.
  - Our results hold for both complex banks and banks with more traditional books of business, primarily loans and deposits, and within both the expansionary and recessionary phases of our test period
- The strongest results occur for banks with more traditional books of business and during the recessionary phase of the most recent cycle
- Interestingly, the current Tier 1 capital leverage ratio generally is least descriptive of credit risk and, in some instances, even has a negative relationship with credit risk
  - Including loans and deposits at fair value has the greatest effect in improving the ability of tier 1 capital to reflect credit risk in banks.

Things that I still ponder

- Assets versus liabilities
- Historical cost versus fair value
  - Most recent financial instrument standard in the US keeps loans at amortized historical cost.
  - Bank analysts look for more information around losses on the loan portfolio
  - But market measures of risk are most highly correlated with fair value.
  - Are fair value and amortized historical cost numbers substitutes or complements? Does this vary in time and with the condition of the financial institution of the bank?
  - Dong, Ryan, Zhang (2014) provide evidence that the reclassification adjustment for AFS is permanent component of net income and help investors predict banks's future perfromance

Fair Values on a Global Stage:
Plumlee, Shakespeare, Yohn (2017)

- IFRS 13, issued in 2011, adopted the fair value measurement requirements of SFAS 157.
- We asked the following two questions:
  - Do the reported fair values of assets and liabilities by firms that apply IFRS reflect an increase in the consistency of how those fair values are reported after the adoption of IFRS13?
  - Do the reported fair values of assets and liabilities by firms that apply IFRS reflect convergence with the reported fair values of assets and liabilities by US firms that apply US GAAP?

Fair Values on a Global Stage:
Plumlee, Shakespeare, Yohn (2017)

- We look at the consistency of application both within and across countries
  - We examine changes in the associations between MVE and the assets and liabilities measured at fair value.
    - Compare standard error of the coefficients for one country pre and post adoption to examine the within country consistency changes
    - Compare the standard error of all the coefficients across the sample countries pre and post to examine across country consistency changes
    - We calculate pairwise (country by country) differences in coefficients
- We look at the convergence between IFRS countries and US by looking at the pairwise differences in coefficients.

Fair Values on a Global Stage:
Plumlee, Shakespeare, Yohn (2017)

- We consider cross sectional differences in countries that could impact the adoption and potential improved consistency in fair value measurement
    - EU versus non EU
    - G20 versus non G20
    - Quality of the regulatory environment of the country
    - Dispersion in measurement prior to adoption
    - Efficiency of price formation within the country

Fair Values on a Global Stage:
Plumlee, Shakespeare, Yohn (2017)

- Our results suggest that
  - Consistency improved within and across countries, particularly for the fair value of liabilities
  - The largest improvements are in countries that had weaker regulatory environment and less developed
  - Weak evidence at best of convergence with US GAAP

Things that I still ponder

- Assets versus liabilities
- Historical cost versus fair value
- Valuation process
  - What do we really know about the valuation process for instruments that are not actively traded?
  - How does the valuation process work in countries that perhaps lack some of the sophistication of the US, UK, other EU countries etc?

"It's up to you now, Miller. The only thing that can save us is an accounting breakthrough."