

US corporate pension accounting and stakeholder reaction

Traditional GAAP versus Mark-to-Market (MTM) pension accounting

- How do these approaches differ?
- What are implications for plan sponsors?

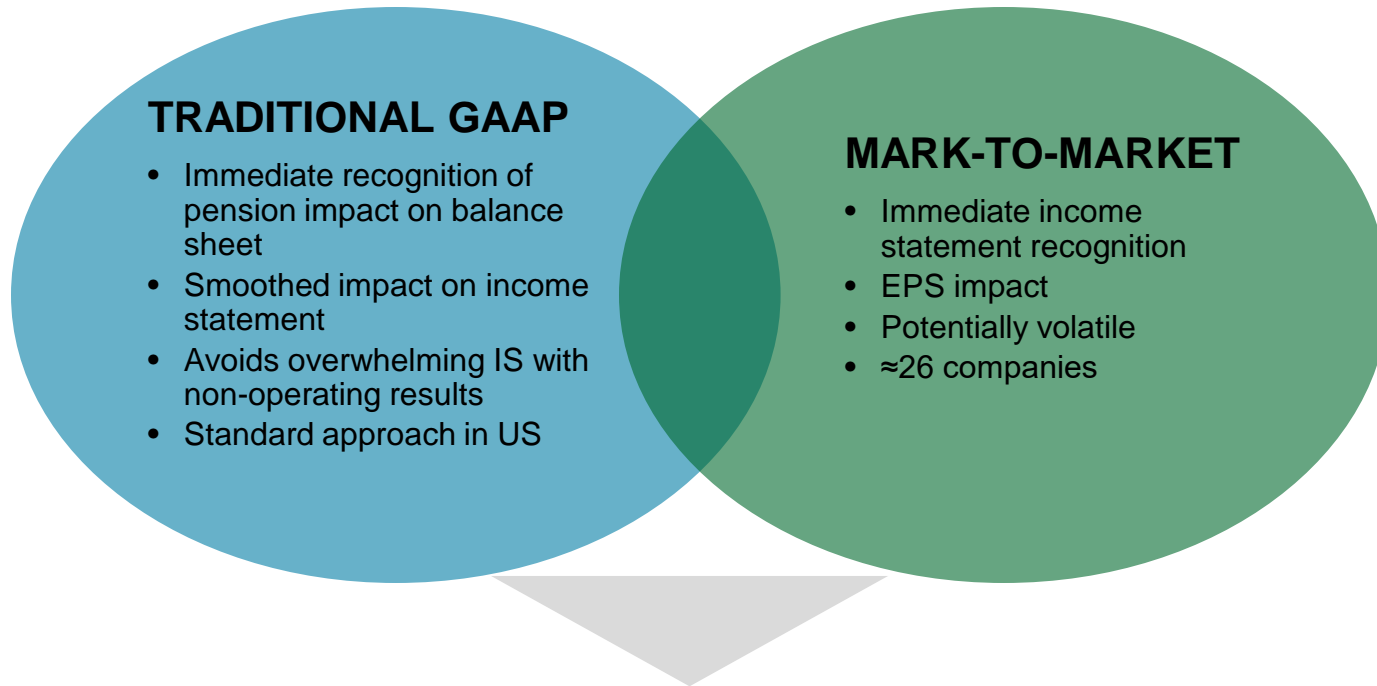
Impact of Change on Corporate Constituents

- Why do plan sponsor resist implementation of MTM?
- Why do some plan sponsors adopt MTM?
- What is impact on ratings, investors, analysis, management?

Options for better integrating accounting and investments

- Does accounting choices impact investment strategy?
- Are alternative investment strategies a better match?

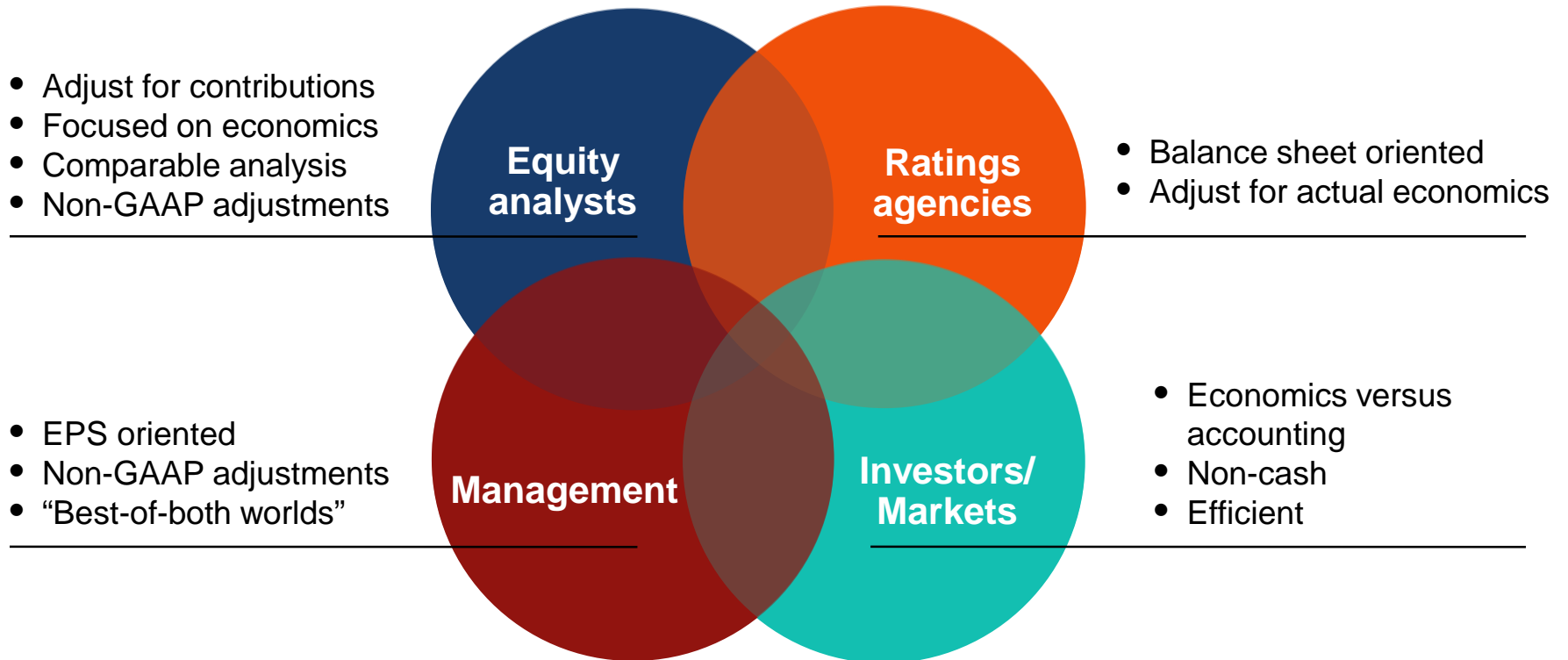
Traditional GAAP versus MTM



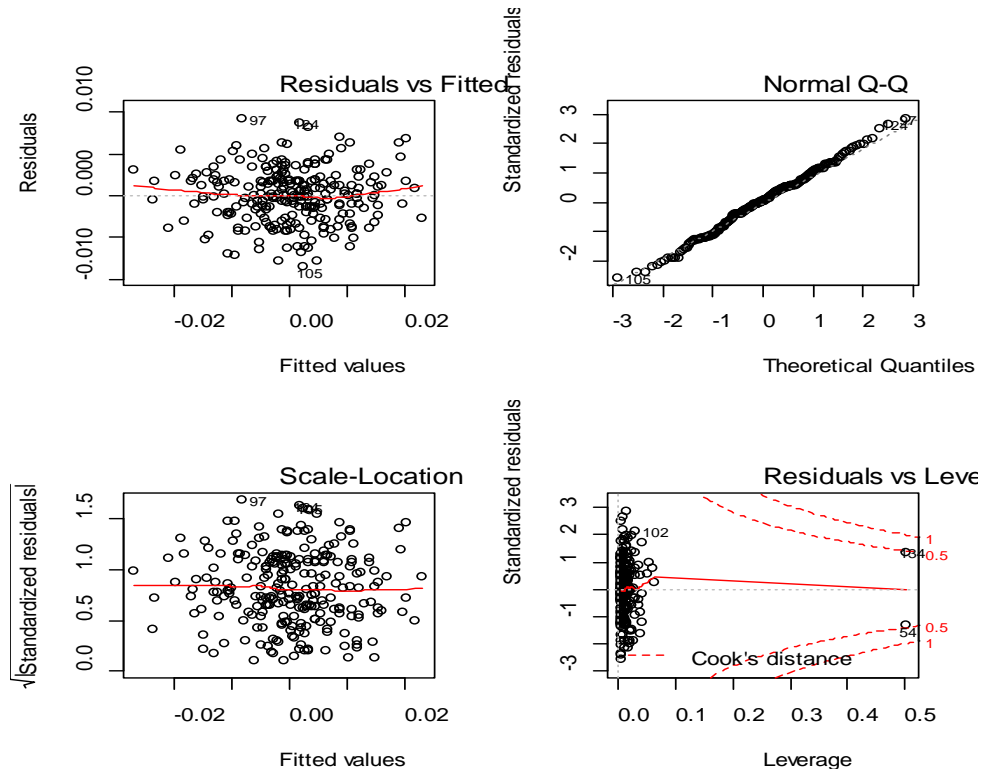
Economics versus stability

- **Period-to-period comparability:** core-earnings performance
- **Management performance evaluation:** Balance sheet and income statement
- **Asset Allocation:** accounting & investment choices

Key stakeholder reactions



Model assumption check example – AT&T



AT&T Model fit controlling for an earnings call that may have affected trading on 7/23/2010 and another around 3/30, possibly the one time charge associated with healthcare law. After fitting the model, we can see that the model is valid.

Model fit on 252 trading days prior to announcement on January 13, 2011.

Prediction Model

```
Call:
lm(formula = ATT ~ SP500 + Telecomm + Div, data = X)

Residuals:
      Min       1Q   Median       3Q      Max
-0.0084578 -0.0021613  0.0000579  0.0019188  0.0092251

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) -0.0001231  0.0002075   -0.593  0.553549
SP500        -0.1166065  0.0313896  -3.715  0.000251 ***
Telecomm      1.1114206  0.0397915  27.931 < 2e-16 ***
Div          -0.0144004  0.0023295  -6.182  2.58e-09 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.003279 on 249 degrees of freedom
Multiple R-squared:  0.8828,    Adjusted R-squared:  0.8814
F-statistic: 625.4 on 3 and 249 DF,  p-value: < 2.2e-16
```

$$\mu_{att} = -0.000 + r_{SP500} * -0.117 + r_{Telecomm} * 1.111 + \text{Announcement} * -.0144$$

Expected AT&T return as a function of S&P 500, Telecommunication and significant announcement (1=Yes, 0=No)
Variance inflation factors of predictors = 2.5, therefore no multi-collinearity issues, inflated variance still gives very significant pvalues

Predicted/Actual Comparison

date	fit	lwr	upr	Y	lb	ub
1/11/2011	-0.0169976693	-0.023613670	-0.010381668	-0.015277172	TRUE	TRUE
1/12/2011	0.0037696148	-0.002710338	0.010249568	0.004875887	TRUE	TRUE
1/13/2011	-0.0097775212	-0.017695023	-0.001860019	0.001323335	TRUE	FALSE
1/14/2011	-0.0002160052	-0.006701080	0.006269069	0.012334802	TRUE	FALSE
1/18/2011	-0.0141205370	-0.020679846	-0.007561228	-0.003481288	TRUE	FALSE
1/19/2011	-0.0005378275	-0.007030468	0.005954813	0.000000000	TRUE	TRUE

As the last column demonstrates there are 3 trading days where AT&T experienced greater results than would have been predicted by the model, they are the day of the announcement and the 2 trading days following it.

In the paper we noted that many companies did not see a benefit in return on share price for an announcement of a switch to mark to market. However, we noted that several large, early movers such as Verizon and AT&T did see a benefit. The conclusion was that except for large early movers, there wasn't a benefit for the announcement.

Mark to market pension accounting

•Traditional Accounting

- Funded status is reported as net asset or liability on companies balance sheets (over funded is an asset, underfunded is a liability)
- A change in this amount leads to an adjustment to shareholder's equity through the accumulated other comprehensive income account on the balance sheet
- The amount held in the accumulated other comprehensive income is then amortized through income over time.
 - Loss amortization: credit AOCI on balance sheet, immediate offset through income debit, therefore no shareholder equity effect, only P&L and EPS outcomes
 - Gain amortization: debit AOCI on balance sheet, immediate offset through income credit, again no shareholder equity effect.

•Mark to Market Accounting

- Mechanics are similar but boils down to:
 - Shareholder equity the same under both, income now will recognize full loss or gain, no more partial recognition

Gain/Loss amortization

Assets BOY	210,924,414
Liabilities BOY	197,555,096
Funded Status BOY	13,369,318
Assets EOY	216,200,000
Liabilities EOY	207,000,000
Funded Status EOY	9,200,000
Decrease in funded status	4,169,318
(Gain)/Loss	
Reconciliation	Values
MVA BOY	210,924,414
Cont.	-
EROA	14,231,420
BP	(1,000,000)
EX. MVA EOY	224,155,834
Actual	216,200,000
Expense (Gain)/Loss	7,955,834
PBO BOY	197,555,096
SC	3,490,896
IC	9,373,333
BP	(1,000,000)
EX. PBO EOY	209,419,325
Actual	207,000,000
Expense (Gain)/Loss	(2,419,325)
Expense (Gain)/Loss	5,536,509
	Prior Year's Expense
Service Cost	3,490,896
Interest Cost	9,373,333
EROA	(14,231,420)
Amortization of:	
Special Term Benefit	-
PSC	-
(Gain)/Loss	5,536,509
Net Periodic Pension Cost/(Income)	4,169,318

- Under MTM accounting Prepaid/(Accrued) pension liability is the funded status of the plan
- The (gain)/loss amortization is the actual (gain)/loss on the assets and liabilities of the plan
- This loss reconciles the funded status of the plan and hence the Prepaid/(Accrued) pension liability

Prominent Asset Portfolio Options

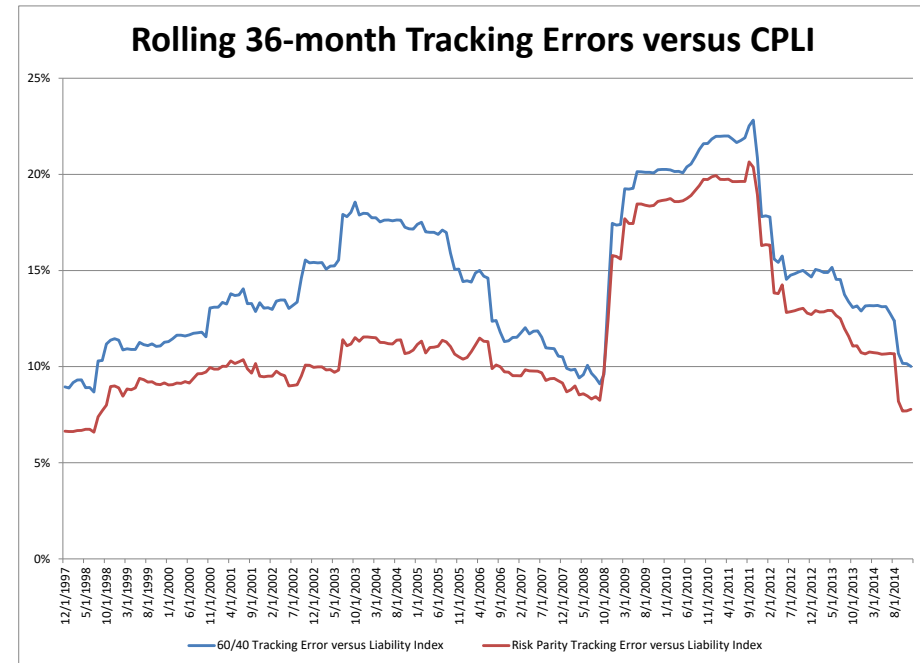
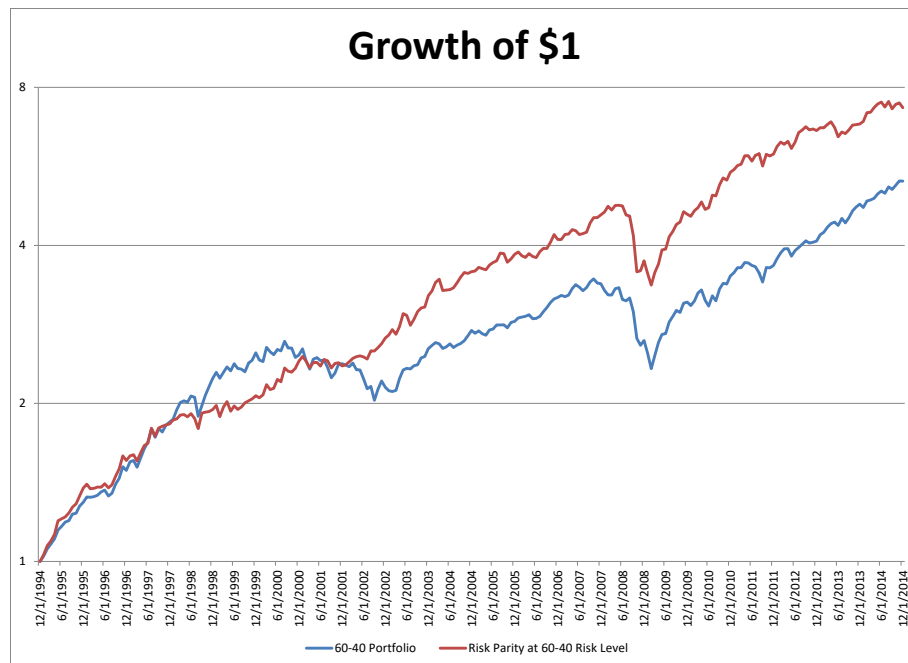
- Liability-Driven Investing
 - Minimizes surplus volatility, but many sponsors reluctant to adopt
- 60/40 (or more equity-focused portfolios)
 - Very common among plan sponsors
 - Relatively high return expectations, but produces extreme surplus volatility
- Risk parity (or risk-balanced investing more generally)
 - Can target any desired level of risk/return
 - Correlates more closely with liabilities than equity-centric portfolios
 - Higher tracking error versus liabilities than full LDI

Primer on Risk Parity

- Typical 60/40 portfolio appears balanced, but actually derives over 90% of its risk from equities
- Risk parity seeks to balance the *risk contributions* (not just the capital allocations) associated with each asset class in the portfolio
- Seeks to improve risk-adjusted returns via improved risk diversification
- Given its higher allocation to nominal fixed income, it can be expected to correlate more highly with typical plan liabilities than the 60/40
- Can be structured to target any desired level of risk/return (typically via use of derivatives)
 - So expected ROA can match or exceed that offered by the 60/40

Historical Results

- Over 20 year sample, risk parity outperformed the 60/40 portfolio both absolutely and in the context of surplus efficiency



Forward-Looking Prospects

- Risk parity's relative performance has certainly been helped by the secular decline in bond yields
- On a forward-looking basis, we still believe risk parity's return prospects to be compelling in both absolute and relative terms
 - For 60/40's 90% risk concentration to be optimal, stocks would have to offer *three times* the Sharpe Ratio of bonds (assuming zero correlation)
- Simulations based on our long-term, forward looking capital market assumptions yield the expected results
 - Risk parity offers lower median expected pension expense and lower expense volatility than the traditional 60/40 portfolio
 - LDI still offers the lowest volatility of pension expense

Simulation Results

