

“Cost of Capital – Impact of Market Conditions”
Property Tax Perspective

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AGENDA

SEATA 2010

- What is the Cost of Capital?
- Market Conditions
- Impact of Recent Market Conditions on Inputs
 - Capital Structure
 - Cost of Debt
 - Cost of Equity
- Summary

What is it?

- The expected rate of return that market participants require in order to attract funds to a particular investment (Pratt & Grabowski, *The Value Examiner*, Jan/Feb, 2009)
 - Opportunity cost
 - Discount Rate
- Overall Cost of Capital Calculation:
 - $WACC = K$ and $K = Wd(K_d) + We(K_e)$
- Requires market data inputs, models, estimations, and judgment



Importance?

- Business Decisions
 - Capital budgeting
- Regulatory Proceedings
- Valuation
 - Appraisals for Property Tax Purposes
 - Income Approach:
 - » Convert expected income streams into an estimate of present value
 - Useful in measurement of Obsolescence/Enhancement

Difficult to Determine?

- Cost of Capital is difficult to estimate under the best of conditions
- Market conditions in recent years have created additional difficulty in estimating the Cost of Capital
- Must overcome difficulties because the WACC is 50% of the equation in the Income Approach



Cost of Capital

SEATA 2010

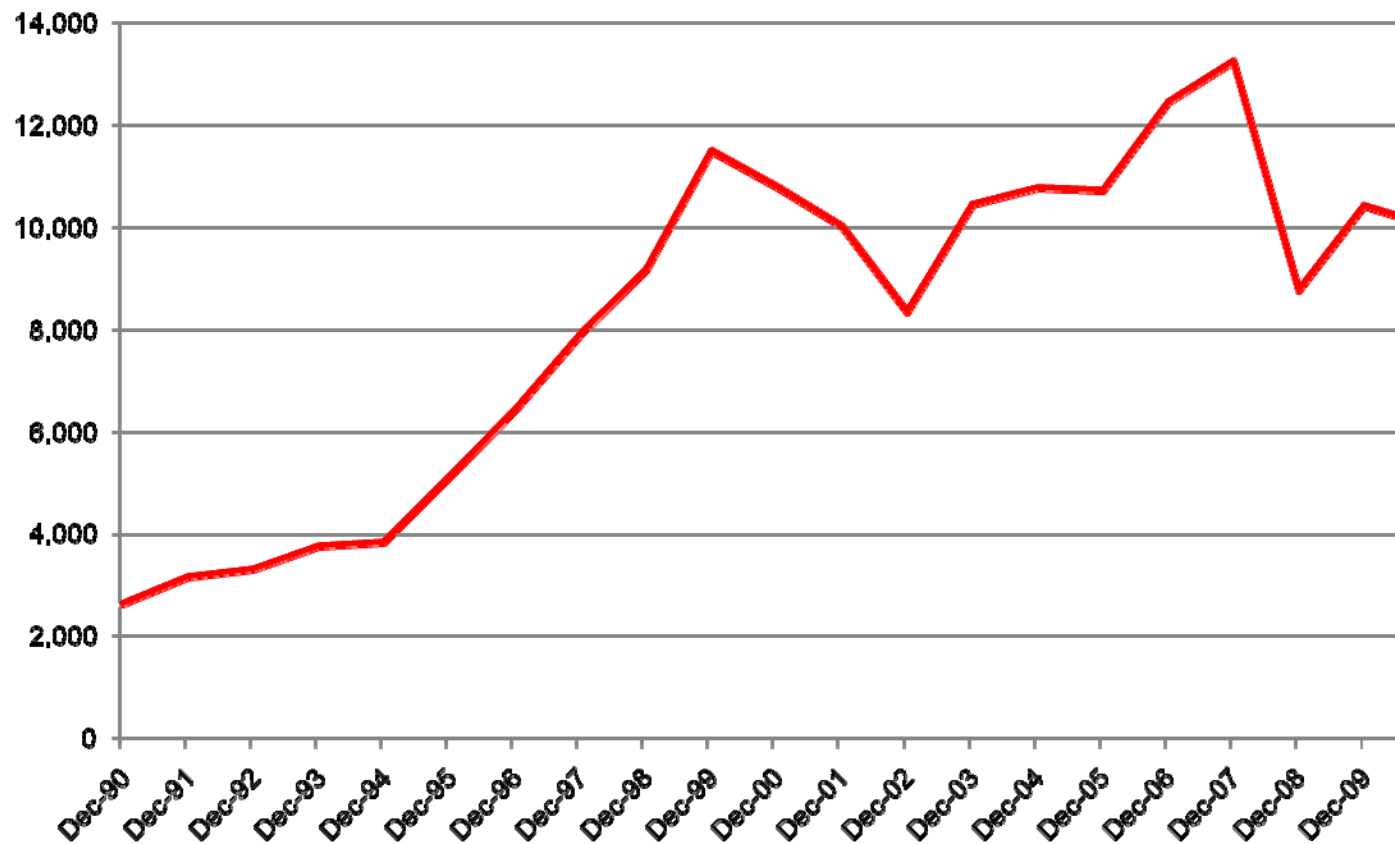
The Market's Wild Ride

Index	YE08	YE09	7/9/10
DJIA	-33.80%	+18.82%	-2.21%
S&P 500	-38.49%	+23.50%	-3.33%
NASDAQ	-40.50%	+43.89%	-3.20%

- DJIA gained 5.3% last week – *biggest weekly advance in a year....*

The Market's Wild Ride

DJIA - Yearly Closes 1990 to Date



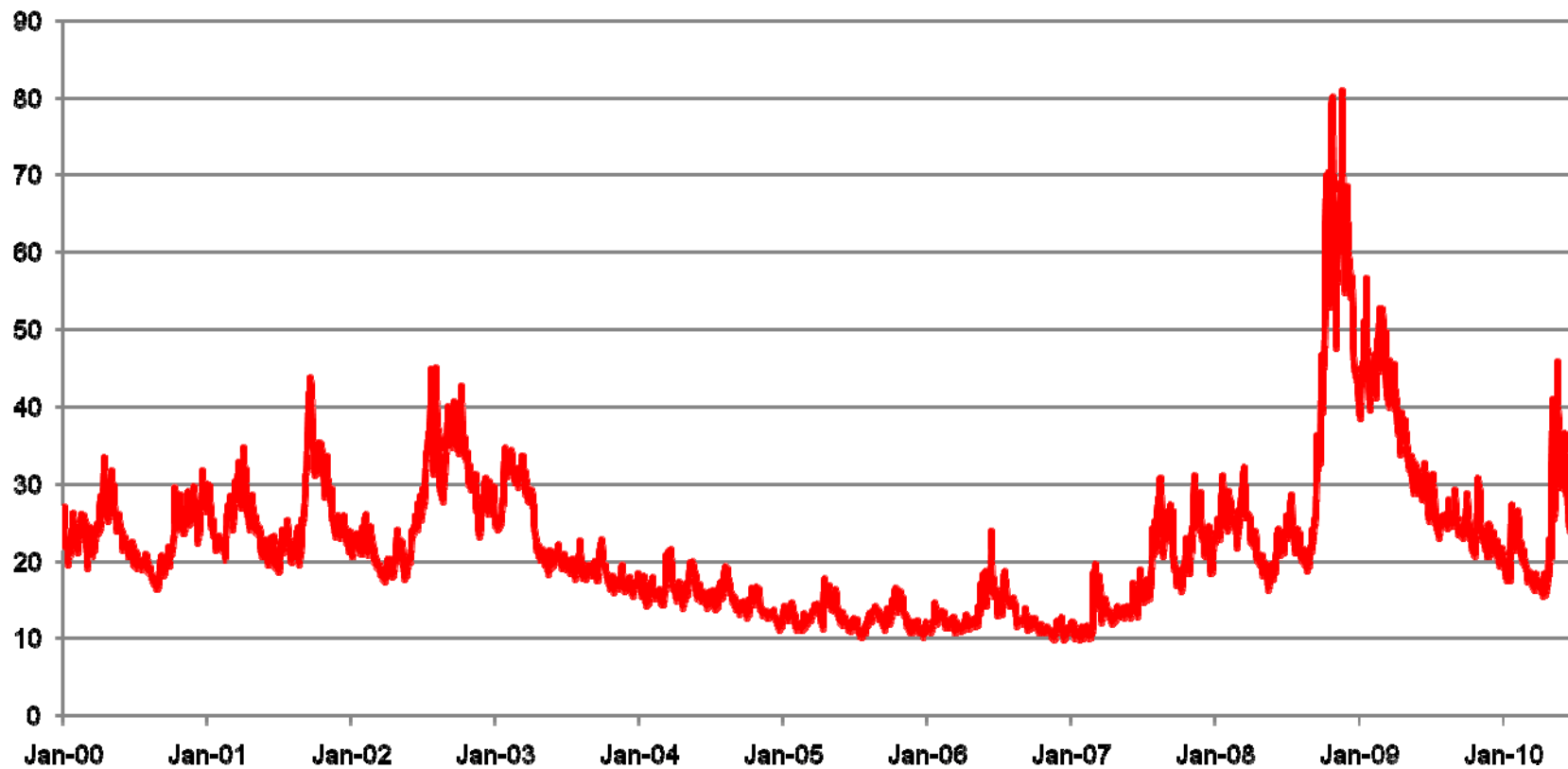
The Market's Wild Ride....More

DJIA – Past 2 Years



The Market's Extreme Volatility

S&P 500 Volatility - VIX



The Market's Wild Ride....



What about Debt?

- Treasuries -> a “Flight to Quality”

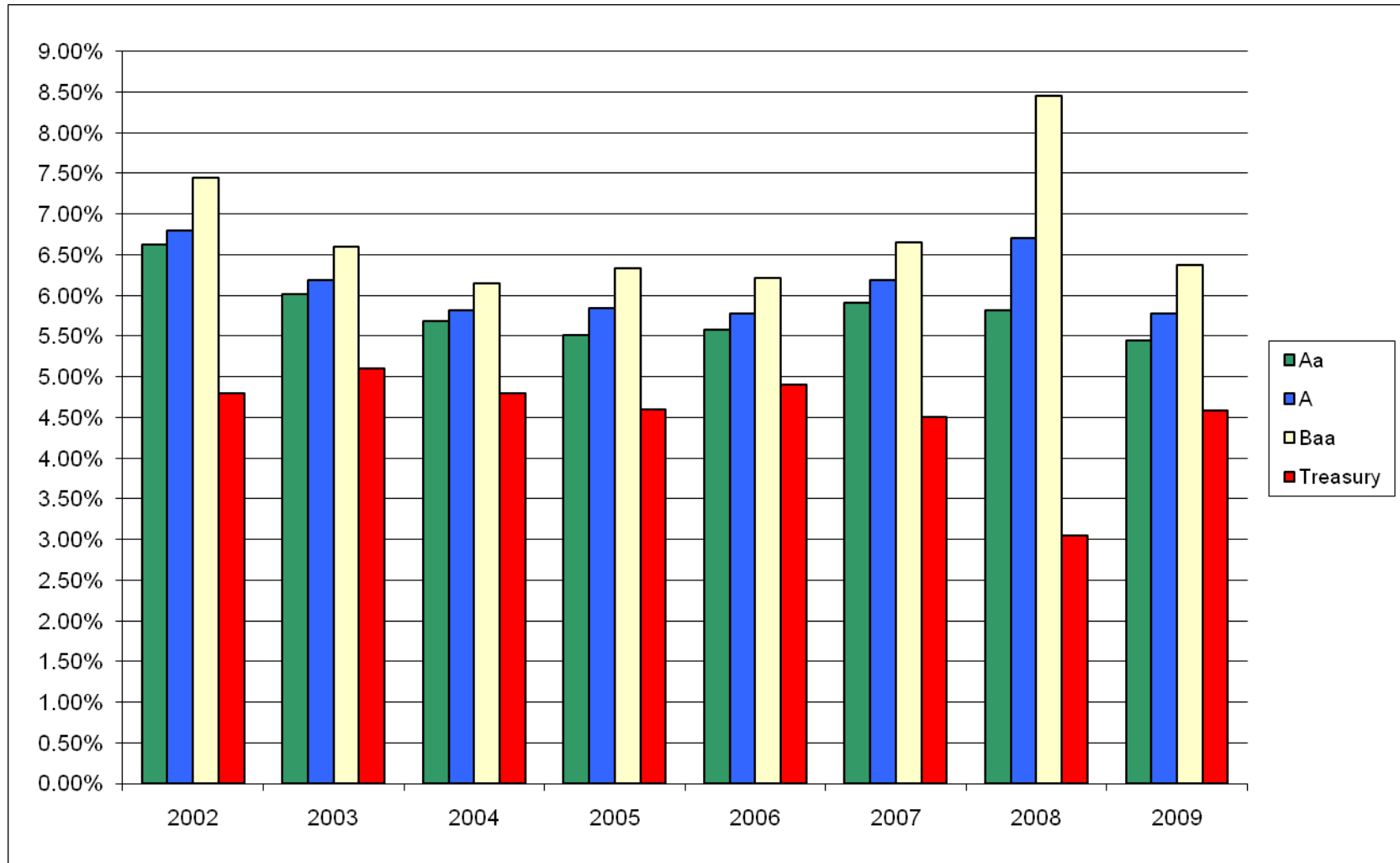
Treasury Bonds	Dec' 06	Dec '07	Dec '08	Dec '09	June '10
10-Year	4.56%	4.10%	2.42%	3.59%	3.20%
20-Year	4.78%	4.57%	3.18%	4.40%	3.95%
30-Year	4.68%	4.53%	2.87%	4.49%	4.13%

What about Debt?

- Corporate Yields jumped in late 2008

Moody's Corporate Baa	Yields
Dec '06	6.22%
Dec '07	6.65%
Dec '08	8.45%
Dec '09	6.37%
7/8/10	6.11%

What about Debt?



What about Debt?

- Availability....
- “U.S. nonfinancial corporate borrowers have more than \$1.7 trillion...in bonds and loans maturing in 2011 to 2014. We believe that some companies at the low end of the ratings scale may find it difficult to refinance at the rates they’ll need for long-term survival, if they can find financing at all.” *(Standard & Poor’s, Global Credit Portal, Ratings Direct, June 16, 2010)*
- “Unlike investment-grade entities, for which the main issue is the rising cost of capital, speculative grade borrowers may find that financial institutions and investors are wary of lending to them.” *(Ibid)*

Impact of Recent Market Conditions

- Market conditions have increased the difficulty in estimating the Cost of Capital
 - Capital Structure
 - Cost of Debt
 - Cost of Equity
 - Traditional Practices...
 - Data Sources

Capital Structure Concerns

- MV of Debt to MVIC continues to fluctuate due to volatility in equity prices
- Proportions of Equity and Debt used to determine WACC can have a material impact on “K”
 - Assume $K_e = 12\%$ and $K_d = 8\%$
 - If $W_e = 70\%$ and $W_d = 30\%$; then $K = 10.8\%$
 - Increase leverage, i.e. W_d to 50%; then $K = 10\%^*$

**Assumes no change in cost of equity or debt*

Capital Structure

- Is the amount of LTD sustainable and manageable?
- Consider Target Capital Structures
 - Review past capital structures
 - 3-year, 5-year vs. Present
- Typical and Sustainable estimates for W_d and W_e



Cost of Debt

- Yields at YE09 had returned to levels of past few years
- Best to consider multiple methods for estimating K_d
 - Ratings & YTM's; YTM's on outstanding issues
 - Spreads over a risk-free rate
 - WADP – analyze capital structure and spreads
- Does estimated K_d make sense compared to target Capital Structure, and entity/asset level for which K_d is being estimated?

Cost of Equity

- Each of traditional methods for estimating Cost of Equity (K_e) impacted by market's volatility
 - Discounted Cash Flow method (DCF)
 - Capital Asset Pricing Model (CAPM)
 - Risk Premium Method
 - Build-Up Model
- *Critical to review each model's inputs and applicability*

Cost of Equity

- Analysis of Inputs
- **Beta (b)**
 - Betas from traditional sources may, in the context of the current environment, be flawed
 - Measurements in periods of re-pricing can misrepresent actual beta when company's price has not declined to same extent as market
- Consider alternatives
 - Barra betas
 - Total betas

Cost of Equity

- Analysis of Inputs
- ERPs

Year	Long-Horizon ERP
2004	7.2%
2005	7.1%
2006	7.1%
2007	7.1%
2008	6.5%
2009	6.7%

- Consider Ex Ante ERPs
 - Multi-stage DCF on S&P 500; Merrill Lynch Implied Returns
 - Capture changing *Investor Expectations*

Cost of Equity

- Analysis of Inputs (ERPs Continued)
 - Consider measuring ERPs based on measures of Size and measures of company Risk, and using results in a Build Up model or as adjustment to CAPM
 - Duff & Phelps publishes historical ERPs determined by considering eight measures of Size and three of Risk (see Duff & Phelps, LLC *Risk Premium Report 2010*)
 - Using *Report*, ERPs can be found and added to a R_f in a BUM model to estimate K_e
 - » Data can also be used to determine SRPD
 - » Useful as directional indicator of magnitude of possible subsidiary adjustment

Cost of Equity

- Don't just "Plug and Play"
- CAPM: $K_e = R_f + (K_m - R_f) * b$

with $K_m - R_f = \text{ERP}$

- YE07 ERP = 7.1%
- YE08 ERP = 6.5%
- YE09 ERP = 6.7%
- YE07 R_f = 4.50%
- YE08 R_f = 3.05%
- YE09 R_f = 4.58%
- $b = 1.10$



» K_e :YE07 = 12.31%; YE08 = 10.20%; YE09 = 11.95%

- Result for YE08 counterintuitive; results for YE09 must also be closely analyzed

- Estimating the Cost of Capital is a challenge under normal circumstances
- Market volatility adds a layer of complexity to the process
- Process requires greater analytical rigor
- And a dose of common sense
- Finally, don't forget to focus on *Cash Flows*...