# Identifying Rick Factors in Telecomm

**Tuesday, July 31, 2012**
**8:30 a.m.**

## Speaker

**DR. HAL B. HEATON** is a professor of finance at Brigham Young University where he teaches advanced corporate finance and capital markets. He has also served on the finance faculty at the Harvard Business School and the University of Santa Clara. Dr. Heaton holds a Ph.D. in finance from Stanford University, a Masters degree in economics from Stanford University, an MBA from Brigham Young University, and a bachelors degree in mathematics/computer science also from BYU.

Following the completion of his MBA, Dr. Heaton was a consultant with the Boston Consulting Group where he dealt with strategic planning issues for major firms in the paper, farm equipment, lumber, oil, banking, and electronics industries. He currently serves as a consultant to a number of multinational organizations on issues in corporate finance, valuation, exposure management, capital markets and as an expert witness in hearings and court proceedings for cases involving business valuation.

An author of several articles, Dr. Heaton has research interest in valuation and related topics including optimal capital structure, cost of capital, mergers/acquisitions, and capital markets. He has authored articles dealing with business appraisal techniques, the impact of taxation on valuation and firm behavior, and capital market efficiency.

## Moderators

**ROBERT D. BUTTERBAUGH,** CMI, is a Senior Manager in Ernst & Young's Philadelphia office and a leader of the firm's East Central Property Tax practice specializing in property tax consulting and credits and incentives. He has over 26 years of property tax and incentives experience in public accounting and industry where he has provided a range of real and personal property tax services including valuation, litigation support, expert testimony, research, planning and compliance. He has provided property tax administration or consulting services in thirty-eight states. Mr. Butterbaugh received his Bachelor's degree in Accounting from Indiana University and MBA in Finance from DePaul University. Prior to joining Ernst & Young, Bob managed the global grants and incentives and property tax practices for E.I. du Pont de Nemours and Company and was a Partner with another Big 4 accounting firm. Mr. Butterbaugh has been active in the Institute for Professionals in Taxation (IPT), having served as the President for the 2010-2011 term and currently serving on the Board of Governors and the

Professional Designation Committee - Property Tax. He has lectured on various property tax issues for the IPT, Appraisal Workshop for Ad Valorem Taxation of Communications, Energy and Transportation Properties, Broadband Tax Institute, Chicago Tax Club, IBC - Tax Minimization and Compliance for Electric and Gas Utilities and EXNET Utility Tax Conference.

**MARK F. SEMERAD, C.M.I.**, is Senior Manager, Property Tax for Level 3 Communications, Inc. in Broomfield, Colorado. Prior to joining Level 3 in October, 2000, he was Director, Property Tax for ConAgra, Inc. in Omaha, Nebraska for over 16 years where his duties included tax incentive negotiation and lobbying as well as overall property tax management. Prior to joining ConAgra, he served as Attorney, Property Tax Division, Nebraska Department of Revenue. He holds a B. A. degree from Creighton University and a J. D. degree from the University of Nebraska.

Mr. Semerad is an inactive member of the Nebraska Bar Association and is an inactive Certified Public Accountant. He is a certified member of the Institute for Professionals in Taxation and has been a registered lobbyist in the Nebraska Legislature. Mr. Semerad has served as Chair, Board of Trustees, Nebraska Tax Research Council and President, Nebraska Tax Forum. He has spoken at the Institute for Professionals in Taxation annual conference and property tax symposium and before other local and regional groups. He was formerly a member of the IPT Board of Governors and served as Overall Chair of Property Tax Education. He is also an instructor of the IPT Intermediate Real Estate Tax Management course. He has previously served as chair of that committee.

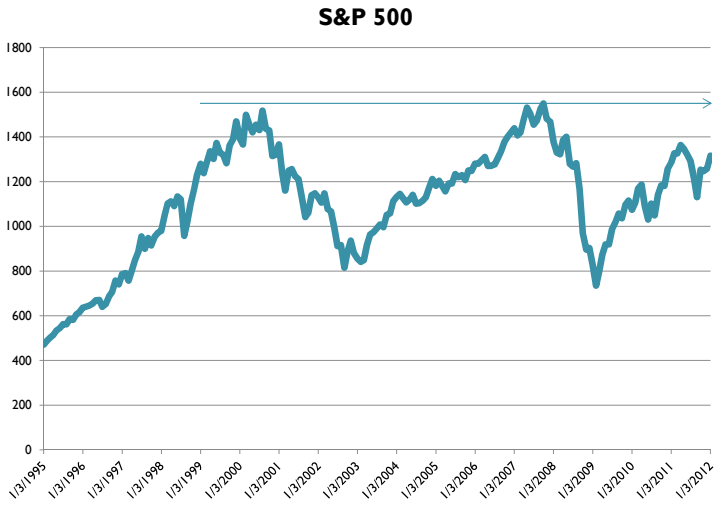
# Telecom Cost of Capital Issues: January 1, 2012

Hal Heaton, PhD

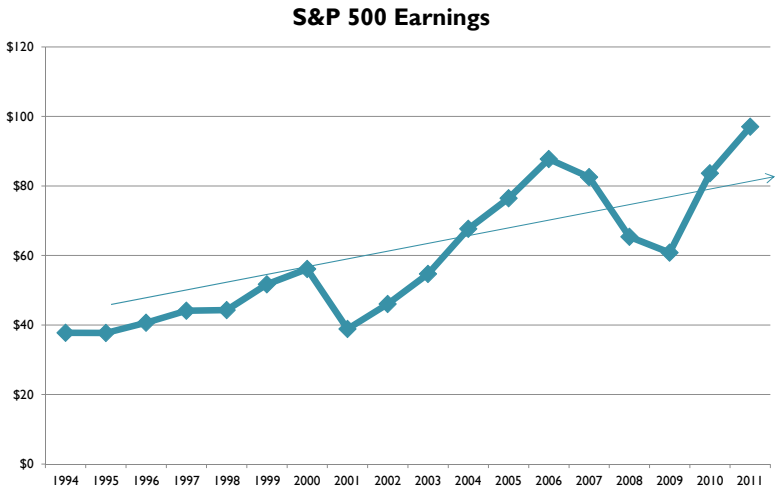
## Issues in 2012

- In typical capitalization model, parameters must be long term
  - Must not reflect short term distortions
  - NOI/k requires that ***both*** NOI and k be long term
- Debt as percent of capital
  - Debt less available for landline telco with declining customer base
- Appropriate risk premiums
  - Historical average still biased low due to massive negative return in 2008
  - Market evidence suggests investors require higher risk premiums than historically
  - CAPM estimates unacceptably low
  - Dividend Growth Model better
  - Decomposing the beta
- Liquidity is a critical issue
  - Adjustments to final value or discount rates essential
  - Estimated Cost of Capital

# The stock market is lower than 12 years ago…




# But earnings have risen dramatically … discount rates must be higher!



Headlines are clear that obtaining credit is difficult …

- Wall Street Journal: February 24, 2010

"**Lending Falls at Epic Pace**

U.S. banks posted last year their sharpest decline in lending since 1942, suggesting that the industry's continued slide is making it harder for the economy to recover. … According to the FDIC, the number of U.S. banks at risk of failing hit a 16-year high at 702. More than 5% of all loans were at least three months past due, the highest level recorded in the 26 years the data have been collected. And the problems are expected to last through 2010. … …The struggling U.S. banking industry remains a problem for policy makers eager for banks to lend again."

## Smaller, undiversified properties have greater difficulty obtaining debt

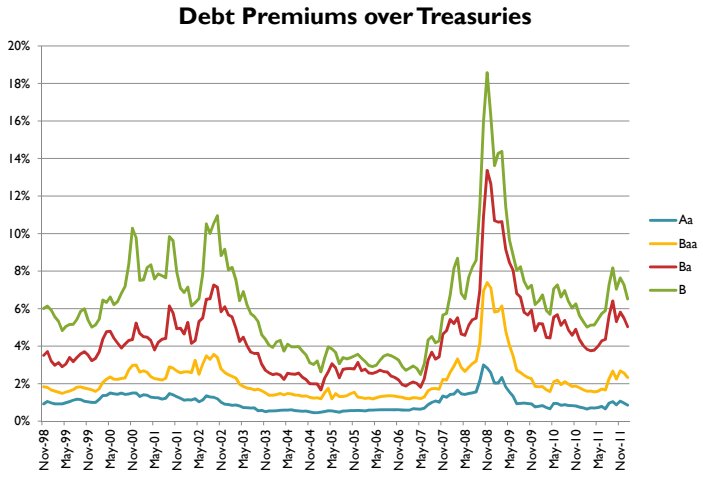
- "Company size and diversification often plays role. While we have no minimum size criterion for any given rating level, company size tends to be significantly correlated to rating levels. This is because larger companies often benefit from economies of scale and/or diversification, translating into a stronger competitive position. Small companies are, almost by definition, more concentrated in terms of product, number of customers, and geography. To the extent that markets and regional economies change, a broader scope of business affords protection."

[Standard and Poor's, "Corporate Ratings Criteria" page 22.]

## Ibbotson risk premium still biased by 2008 return

- Return on large stocks in 2008: -37.0%
- Return on long term Treasury bonds in 2008: +25.9%
- One year risk premium
  = Rm – Rf = -37.0% - 25.9% = -62.9%
- Historical average risk premium fell almost a full 1% as a result of one year's number

## Risk spreads for debt elevated …



# CAPM Data

| | Share Price 12/31/2011 | Shares Outstanding (millions) | Market Value of Equity ($millions) | Debt ($millions) | Percent Debt | Bloomberg Beta | Unlevered Beta* |
|---|---|---|---|---|---|---|---|
| Alaska Communications | $3.01 | 45.3 | $136 | $570 | 80.7% | 0.74 | 0.21 |
| Cincinnati Bell | $3.03 | 195.2 | $591 | $2,534 | 81.1% | 1.13 | 0.31 |
| Consolidated Communications | $19.05 | 29.9 | $570 | $885 | 60.8% | 1.00 | 0.51 |
| CenturyLink | $37.20 | 618.5 | $23,009 | $21,836 | 48.7% | 0.78 | 0.49 |
| Frontier Communications | $5.15 | 995.1 | $5,125 | $8,300 | 61.8% | 0.98 | 0.49 |
| Metro PCS | $8.68 | 362.5 | $3,146 | $4,744 | 60.1% | 1.08 | 0.56 |
| Sprint Nextel | $2.34 | 2996.0 | $7,011 | $20,274 | 74.3% | 1.24 | 0.45 |
| AT&T | $30.24 | 5926.5 | $179,218 | $64,753 | 26.5% | 0.82 | 0.67 |
| Verizon Communications | $40.12 | 2835.5 | $113,761 | $55,152 | 32.7% | 0.79 | 0.61 |
| Windstream | $11.74 | 586.3 | $6,883 | $9,150 | 57.1% | 0.90 | 0.50 |

# CAPM Estimate

- ***Required Return*** $= R_f + \beta(R_m - R_f)$
- **Morningstar/Ibbotson**
  - **Using 20% debt and relevering .5 unlevered beta**
  - **2.48% + .58 x 6.62% = 6.3%**
- **Treasury Rates absurdly low**
  - **Lower than inflation**
  - **Due to demand from foreign banks**
  - **…and foreigners terrified of European meltdown**
  - **…Foreign governments keeping currencies low for employment reasons**
- **6.3% equity rate is lower than the rate on long term telecom debt—impossible!**
- **As shown earlier, these results not supported by the market evidence.**

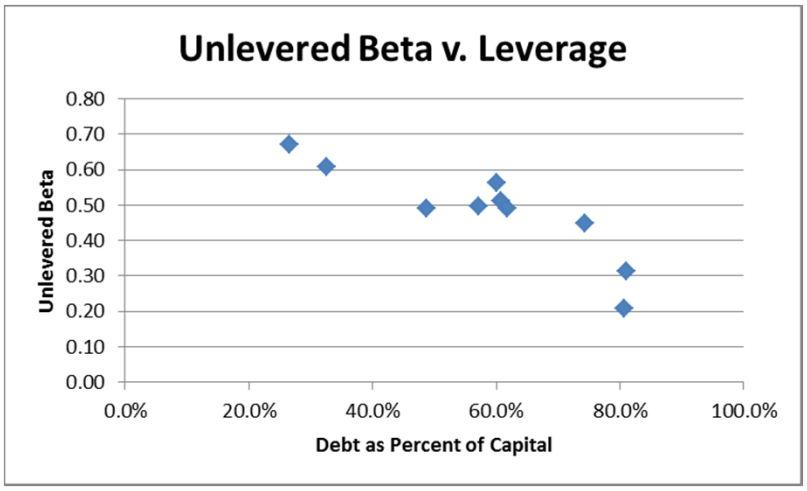
# Dividend Growth Model

| | Share Price 12/31/2011 | Bloomberg 2012 Cash Distribution Forecast | Yield | Value Line Projected Growth | Bloomberg Projected Growth | Estimated Return |
|---|---|---|---|---|---|---|
| Alaska Communications | $3.01 | $0.20 | 6.6% | NMF | 9.0% | 15.6% |
| Cincinnati Bell | $3.03 | $0.00 | 0.0% | 18.4% | 3.0% | 10.7% |
| Consolidated Communications | $19.05 | $1.55 | 8.1% | 10.8% | 1.5% | 14.3% |
| CenturyLink | $37.20 | $2.90 | 7.8% | 16.1% | -1.3% | 15.2% |
| Frontier Communications | $5.15 | $0.75 | 14.6% | 21.4% | -5.9% | 22.3% |
| Metro PCS | $8.68 | $0.00 | 0.0% | 15.3% | 19.5% | 17.4% |
| Sprint Nextel | $2.34 | $0.00 | 0.0% | NMF | 4.0% | 4.0% |
| AT&T | $30.24 | $1.77 | 5.9% | 9.9% | 4.9% | 13.2% |
| Verizon Communications | $40.12 | $2.05 | 5.1% | 11.5% | 8.8% | 15.3% |
| Windstream | $11.74 | $1.00 | 8.5% | 17.8% | 0.2% | 17.5% |
| | | | | | | |
| Average | | | | | | 14.6% |

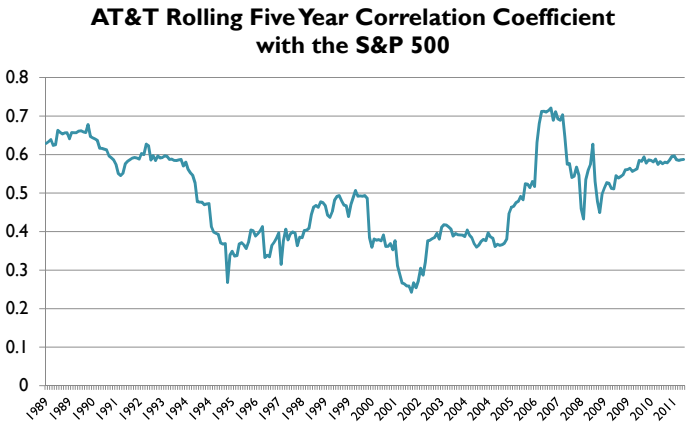
# Deeper analysis of beta

- DGM model estimates better, but still not very reliable
  - Growth estimates exhibit wide range
  - Affected by extreme leverage of some telcos
- Beta estimates composed of two elements:
  - $\beta_i = \rho_{im} \times (\sigma_i/\sigma_m)$
  - $\rho_{im}$ = ***correlation with the market***
  - $\sigma_i/\sigma_m$ = ***volatility relative to the market***

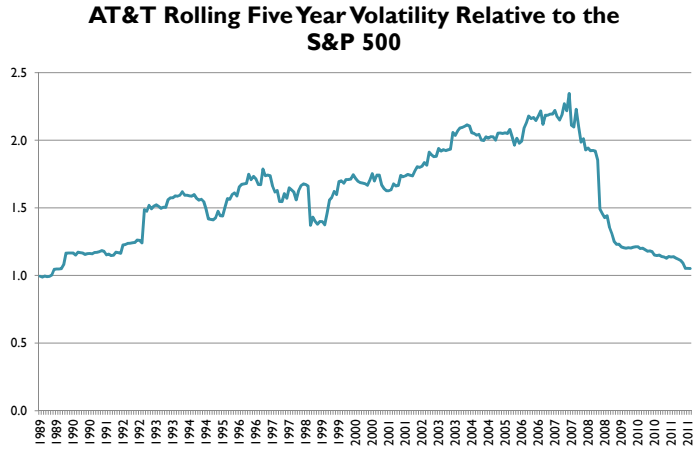
# Leveraging Formula Assumes Debt Essentially Risk Free




# Example: AT&T rolling five year correlation to the S&P 500



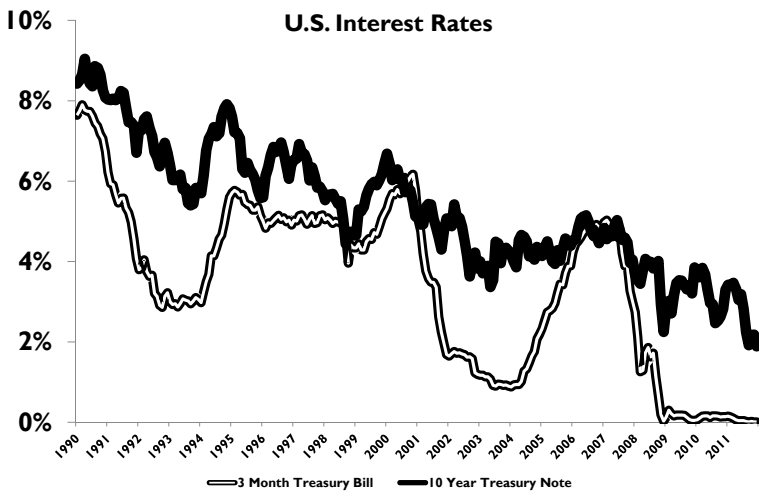
## Example: AT&T rolling five year relative volatility to the S&P 500




## Discussion of beta

- Correlation fell during the merger mania of the 1990's
- …But came back to normal levels
- Relative volatility rose as competition intensified but plunged with economic meltdown in late 2008
  - Why?

# Treasury Rates



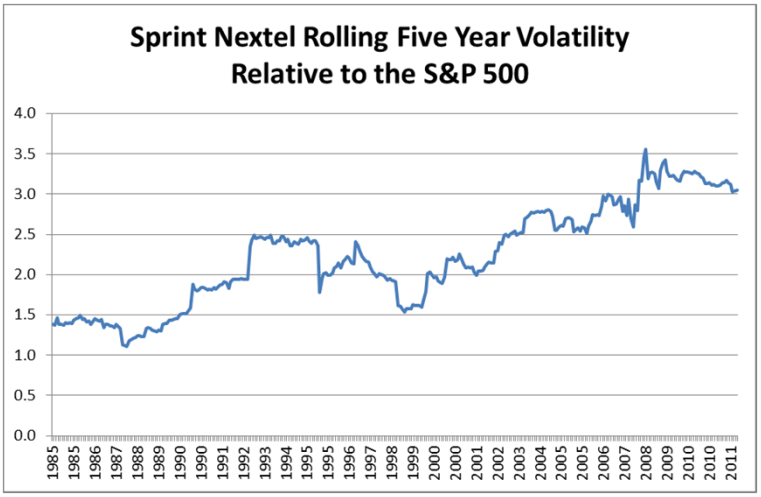

# Example: Investors buying AT&T for yield

- "With tens of millions of people -- particularly retiring baby boomers -- looking for investment income and fed up with dismally low interest rates on bank accounts and bonds, brokerages and money managers believe there's a huge and growing audience for the dividend pitch." [Los Angeles Times February 26, 2012]
- "Dividends are winning new respect now that yields on U.S. Treasuries are near record lows. …The focus on dividend-paying stocks could intensify, as investors look to Inflation protection. …AT&T, for instance, has a dividend yield of more than 6% …" [USA TODAY August 24, 2011]
- "THE first security I was ever aware of was a dividend-paying stock, the AT&T shares that my grandfather, a retired postman, owned when I was little. … So when I heard recently that some advisers were using dividend-paying stocks to coax people who still hold their money in cash or low-yielding bonds back into the equity markets, my ears perked up. …These stocks also offer at least some sort of hedge against inflation." [The New York Times June 4, 2011]

## Example: AT&T Relative Volatility

- Investor's treating AT&T more like a bond
  - Inflation protection
  - Will end when Treasury rates rise
  - Long run, relative volatility will reflect risk of telecommunications industry
- Low relative volatility applies even less to current risk in telecoms
  - Declining demand as consumers shift to cellular = high risk for landlines
  - Other telecoms showing increasing volatility

## Other telecoms show rising relative volatility …



## Beta estimate

- $\beta_i = \rho_{im} \times (\sigma_i/\sigma_m)$
  - Historically telecommunications have a correlation of about .6 with the S&P 500
  - Telecoms are historically about 2 to 3 times as volatile as the (diversified) S&P 500
  - $\beta = .6 \times 2.5 = 1.5$
  - ***Cost of Equity (for security)***
    - ***CAPM 2.48% + 1.5 x 6.62% = 12.4%***
    - ***DGM 14%***
    - ***Choose 13%***
  - ***WACC (for securities)***
    - ***.2 x 5.43% x (1-.39) + .8 x 13% = 11.0%***

## Liquidity

- Liquidity refers to the ability to sell an investment easily, quickly, and at low cost
  - A ***liquidity discount*** refers to the lower value of an illiquid asset compared to a liquid asset of similar risk
  - A ***liquidity premium*** refers to the higher return that investors will require for an illiquid asset
- Liquidity became critical in January 2009
  - Ability to generate cash to meet obligations critical
  - Treasury bills were offering virtually zero interest
  - 30-day Treasury bills briefly offered ***negative*** interest

## Liquidity: Illustration

- Build a pipeline/refinery/power plant …
  - Cost $800 million
- Hire managers, train a work force, market to obtain contracts and customer base
  - Cost $200 million
- If property generates $100 million per year and 10% is required rate
  - Value = $1000 = $100 / 10%
- May need intangibles such as patents, licenses, copyrights, intellectual property
  - Higher revenue/cash flow/value to compensate
- Problem: what is value for property taxes?

## Liquidity Illustration (continued)

- Issue and sell stock (debt) claims on the property
  - Incur substantial costs to issue
  - Incur ongoing costs to stay listed
    - Exchange listing fees
    - Disclosure costs
    - Regulatory costs
    - Additional auditing costs
- Compare owning the property versus buying shares ….

## Liquidity Illustration (continued)

- If you own the property you must
  - Have substantial knowledge of how to operate facility, market products or services
  - Worry about hiring, firing, training
  - Take care of all regulatory, licensing, disclosure, and other issues
- If you own the property you do not have limited liability
  - Environmental, accident, other litigation may lead to losing other assets
- Selling property takes time, expense, …

## Liquidity Illustration (continued)

- If you buy the shares
  - You do not have to know anything about managing, operating, marketing, regulations ….
  - You can buy a few shares or a lot
    - Easy to diversify
- Shareholders have absolute limited liability
- You can turn your ownership into cash in seconds with the click of an icon
- Which you would rather own?

## Liquidity Illustration (continued)

- If the shares sell for, say, $1.5 billion due to all the conveniences and advantages
  - The property is still only generating $100 million a year
  - Hence the discount rates extracted from stock and bond data must be lower than 10%
- In addition, shares can trade at higher values due to property which does not even exist on the assessment date!
  - Wynn Resorts example

## Liquidity

- We are dealing with a **property** tax …
- Not what highly liquid claims on property will sell for
- If the data obtained and used comes from stocks and bonds …
- Which are so liquid they can be sold in seconds with the click of an icon …
- The estimated discount rates must be adjusted to make them useful to value illiquid property which is expensive to sell, takes months to sell, and carries substantial risk that securities don't

# Using Securities Data

- Securities are very liquid
- Securities can be sold in small or large amounts
- Operating property requires dealing with management hassles
- Securities have absolute limited liability
- Securities represent ownership in companies than can expand, enter new businesses
- Securities capture value from assets that do not even exist on the lien date
- Securities capture all intangible values
- Not only do these facts affect extracted rates, it means measures of "market/book" do not mean there is no 'economic obsolescence'

# Assessors recognize need for liquidity adjustments

- California State Board of Equalization, *Assessors' Handbook*, Section 502, Advanced Appraisal, p. 63.
  - "Most financial assets are liquid. Real estate and most business assets, however, are relatively illiquid, and real estate investors must be compensated for this reduced liquidity."
- California State Board of Equalization, *Assessors' Handbook*, Section 502, Advanced Appraisal, pp. 183-184.
  - "The argument based on lack of liquidity is a much stronger one. There is no question that financial assets are significantly more liquid than real estate assets. ... An adjustment for lack of liquidity can be made in two ways: (1) consider lack of liquidity as an added risk factor and add a premium for it to the cost of equity estimated by the CAPM; or (2) value the real estate asset using the CAPM/WACC without any liquidity adjustment, and then apply a liquidity discount to the estimated value."

## Appraisal texts require adjustment:

- 13th Edition Appraisal of Real Estate
  - "If there are differences between a comparable property and the subject property that could affect the overall capitalization rate concluded, the appraiser must account for these differences."
- The word "must" is a very strong word

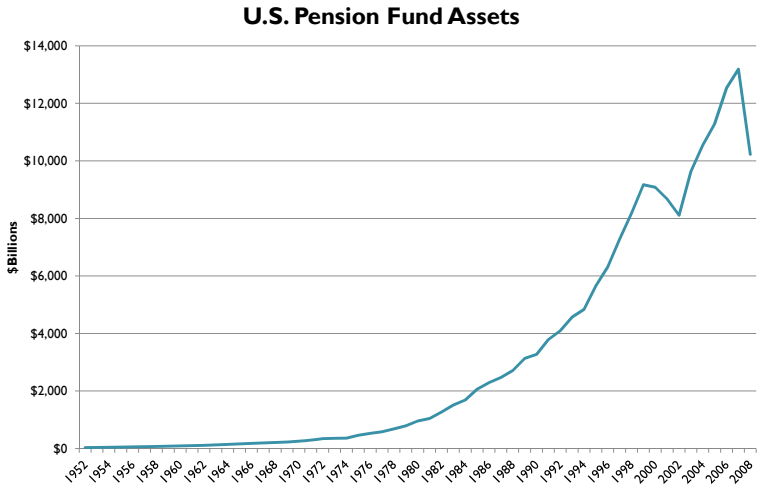
## Size premium represents a minimum adjustment …

**Size Premia (market capitalization in millions)** [4]

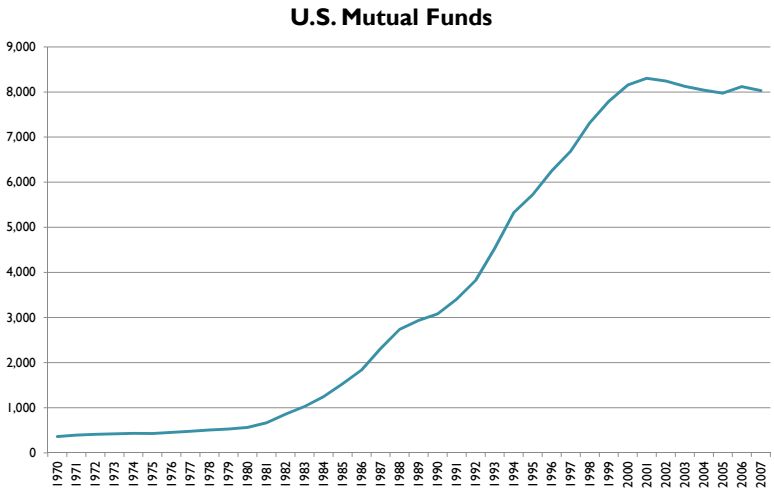
| Decile | Smallest Company | | Largest Company | Size Premium (Return in Excess of CAPM) |
|---|---|---|---|---|
| Mid-Cap (3–5) | $1,621.096 | – | $6,896.389 | 1.14% |
| Low-Cap (6–8) | 422.999 | – | 1,620.860 | 1.88 |
| Micro-Cap (9–10) | 1.028 | – | 422.811 | 3.89 |
| **Breakdown of Deciles 1-10** | | | | |
| 1-Largest | 15,484.940 | – | 354,351.912 | -0.38 |
| 2 | 6,927.557 | – | 15,408.314 | 0.78 |
| 3 | 3,596.535 | – | 6,896.389 | 0.94 |
| 4 | 2,366.464 | – | 3,577.774 | 1.17 |
| 5 | 1,621.096 | – | 2,362.532 | 1.74 |
| 6 | 1,090.652 | – | 1,620.860 | 1.75 |
| 7 | 683.059 | – | 1,090.515 | 1.77 |
| 8 | 422.999 | – | 682.750 | 2.51 |
| 9 | 206.802 | – | 422.811 | 2.80 |
| 10-Smallest | 1.028 | – | 206.795 | 6.10 |

Datasource: Morningstar/Ibbotson Annual Yearbook 2012

# Why is liquidity becoming such a critical issue now?




# Why is liquidity becoming such a critical issue now?



# Damadoran Liquidity Adjustment

- Capital Asset Pricing Model (CAPM)
  - Required return
    = Risk Free Rate + Beta x Market Risk Premium
- Beta = $\beta_i = \rho_{i,m} \times (\sigma_i / \sigma_m)$
- Adjusted Beta = $\beta_i / \rho_{i,m}$
- Adjustment =
  - (Adjusted Beta – Beta) x Market Risk Premium

# Damodaran liquidity adjustment

| | Bloomberg Beta | R-squared | Damodaran Adjusted Beta | Difference in Equity Return | Percent Debt | Difference in WACC |
|---|---|---|---|---|---|---|
| Alaska Communications | 0.74 | 0.114 | 1.20 | 3.03% | 80.7% | 0.58% |
| Cincinnati Bell | 1.13 | 0.381 | 1.82 | 4.60% | 81.0% | 0.87% |
| Consolidated Communications | 1.00 | 0.383 | 1.61 | 4.06% | 60.8% | 1.59% |
| CenturyLink | 0.78 | 0.284 | 1.45 | 4.50% | 49.1% | 2.29% |
| Frontier Communications | 0.98 | 0.443 | 1.47 | 3.25% | 61.5% | 1.25% |
| Metro PCS | 1.08 | 0.222 | 2.30 | 8.04% | 60.1% | 3.20% |
| Sprint Nextel | 1.24 | 0.220 | 2.64 | 9.28% | 72.6% | 2.55% |
| AT&T | 0.82 | 0.482 | 1.18 | 2.39% | 28.4% | 1.71% |
| Verizon Communications | 0.79 | 0.462 | 1.16 | 2.46% | 32.7% | 1.65% |
| Windstream | 0.90 | 0.490 | 1.29 | 2.56% | 51.7% | 1.24% |
| Average | 0.94 | | 1.61 | 4.47% | | 1.69% |

# Summary

- Prevailing debt/equity ratios in early 2012 biased high
  - Must tie debt capacity to subject property
  - Comparable companies are large, diversified corporations
- CAPM approach does not produce credible results
  - Must adjust beta for unusual economic circumstances
  - Long run cash flows require long run risk measure
- CAPM approach still low even after adjustment
  - Treasury rate not realistic
  - Equity risk premium still biased low
- DGM expected growth estimates very wide
- Must adjust for differences between securities and illiquid property
  - Illiquidity/Size adjustment
  - Damodaran approach