



FAS123R Valuation: Expected Volatility Considerations

- Factors to consider include:
 - Historical Volatility
 - Period of measurement (short term vs. mid-term vs. theory of mean reversion)
 - Removal of data?
 - Implied Volatility
 - Liquidity – Open Contract vs. Trading Volume?
 - Historical implied volatilities?
 - Peer Companies - especially for companies with very little or no history
 - Blended Volatilities – developing supportable weights



Expected Volatility – Emerging Best Practice

- Courtesy of FAS123R Data in SEC Filings as Provided by *Salary.com*

	Current Year			Prior Year		
	<u>Total Companies</u>	<u>Standard Deviation</u>	<u>Average</u>	<u>Total Companies</u>	<u>Standard Deviation</u>	<u>Average</u>
Consumer Discretionary	411	17.74%	43.54%	466	20.21%	47.42%
Consumer Staples	77	18.33%	37.78%	89	20.83%	39.81%
Energy	110	16.51%	43.64%	128	19.75%	45.51%
Financials	632	12.10%	27.47%	671	14.05%	28.32%
Health Care	345	23.25%	56.53%	393	26.52%	61.64%
Industrials	273	23.23%	43.10%	322	32.10%	46.15%
Information Technology	462	21.66%	60.83%	518	26.76%	71.25%
Materials	93	15.26%	37.76%	103	15.73%	39.42%
Telecommunication Services	38	32.26%	57.50%	44	33.90%	62.33%
Utilities	44	16.84%	27.81%	68	16.37%	30.69%
Total	2,485	22.67%	43.61%	2,802	27.53%	47.80%

Note: We believe the reduction in volatility is due to current market conditions and a refinement of assumption selection



Expected Volatility – Emerging Best Practice

Of Non-Blended Volatility Selections	
Type of Volatility	Count
Forward Looking Volatility - Implied Volatility	1
Short Term Historical (less than Expected Life)	0
Mid Term Historical (commensurate with Expected Life)	5
Long-Term Historical (longer than Expected Life)	5
Peers	2
Total Surveyed Companies	13

- Only a handful of companies surveyed, 13 out of 122, rely on one volatility estimate
- The most common of the non-blended techniques include reliance on historical volatility for periods greater than or equal to the expected life



Expected Volatility – Emerging Best Practice

Blended Selections	Count	% of Blended	Of those applying a weight			
			25%	Average	Median	75%
Forward Looking Volatility - Implied Volatility	84	77%	11.98%	33.23%	33.33%	50.00%
Short Term Historical (less than Expected Life)	35	32%	18.10%	23.02%	20.16%	25.00%
Mid Term Historical (commensurate with Expected Life)	56	51%	36.42%	52.41%	50.00%	50.00%
Long-Term Historical (longer than Expected Life)	80	73%	36.95%	55.35%	50.00%	72.25%
Peers (Either Implied or Historical in some way)	21	19%	33.33%	61.68%	52.57%	100.00%

- The majority of companies, 109 out of 122, blend multiple volatility estimates
- The most popular blend combines mid to long-term historical with forward looking implied volatilities
- Weighted blends offer the best balance



Setting Assumptions: The Efficient Frontier

- Courtesy of FAS123R Data in SEC Filings as Provided by *Salary.com*

