
Stock Compensation 2011 Assumption and Disclosure Survey

*Human Resource
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Dear clients and friends

PwC is pleased to share with you our **Stock Compensation 2011 Assumption and Disclosure Survey**. This survey presents our analysis of the 2010 year-end assumptions and disclosures for mature and high tech companies.

We analyzed 114 large companies, comprising Fortune 100 companies and other large and established companies, as well as 50 high tech or emerging companies. We reviewed the public annual reports for the companies selected, specifically financial information regarding stock-based compensation plans. We also included 2006 through 2009 data for comparison.

We hope you will find the results of our **Stock Compensation 2011 Assumption and Disclosure Survey** useful in benchmarking your company's assumptions and other data against the survey results.

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Summary

We performed an analysis of the stock compensation disclosures made by 50 High-Tech/Emerging companies and 114 Mature¹ companies. All information in this analysis is based on published annual reports and other publicly available information of the selected companies.

High tech/emerging companies

Overall, option-pricing model assumptions at December 31, 2010 remained fairly consistent with the 2009 year-end reported assumptions for High Tech/Emerging companies. The most significant assumption change observed was in the **expected term**, with an increase in the average term from 5.16 years to 5.31 years. The **dividend yield** assumption also showed a large change, moving from 2.43% to 1.70%, a relative 30% decrease. Other changes included the assumptions for **volatility** and **risk-free rate** which decreased on average by 1.58% and .01%, respectively, from 2009. When valuing stock options², companies continue to rely heavily on the Black-Scholes option-pricing model and primarily base their **expected term** and **volatility** assumptions on historical experience.

Stock options continue to be the leading type of equity award granted by these companies, running at a 3-year consistent rate of 2 to 1 compared to restricted stock awards³. Of the 50 High Tech/Emerging companies analyzed, 44 granted stock options in 2010. Of these, 22% of the companies provided only one type of equity award while the majority (78%) granted a mix of stock options, restricted stock and/or stock appreciation rights (SARs).

In 2009 there was an increase in equity awards granted over previous years, with nearly 350 million stock options and 82 million restricted stock awards granted. However the total value of these awards decreased from prior years reflecting the downturn in the stock market in 2009. For 2010, stock option grants declined to pre-2009 levels at 144 million units granted and total value of approximately \$759 million. Restricted stock awards also experienced a return to pre-2009 levels with 71 million units granted, but an increase in award value to \$1.8 billion.

Mature companies

The changes in 2010 Option-pricing model assumptions at mature companies were similar to those seen for the High Tech/Emerging companies. Both the **dividend yield** and **volatility** assumptions came down in 2010 from 2009 by an average of 0.56% and 2.26%, respectively.

Conversely, the average **expected term** increased from 5.41 in 2009 to 5.53 years in 2010. In line with the increase in expected term the **risk-free rate** also increased slightly by an average of 0.19% from 2009. When valuing stock options, companies continue to rely heavily on the Black-Scholes option-pricing model and primarily base their **expected term** and **volatility** assumptions on historical experience.

Stock options are no longer the leading type of equity award granted by mature companies, with a rate of 1 stock option to every 2 restricted stock awards granted in 2010. In the prior 4 years, stock options were granted at roughly the rate of 2 options for every 1 restricted stock granted. However, of the 114 mature companies analyzed, 105 still granted stock options in 2010. Roughly 12% of the companies provided only one form of equity awards while the majority (just over 88%) granted a mix of stock options, restricted stock and/or SARs.

¹ "Mature" refers to companies that have been established for a minimum of 15 years.

² For purposes of this study "stock options" is used to refer to stock option and stock appreciation right awards granted by a company.

³ For purposes of this study "restricted stock" is used to refer to restricted stock, restricted stock unit and unvested unit awards granted by a company.

Total value of 2010 restricted stock awards was almost \$16 billion for the selected companies compared to an approximate average of \$10 billion a year from 2006-2009. Through 2010, the value of stock option grants has decreased since 2006 to a 5-year low of just over \$4 billion compared to \$6 billion in 2006.

Option-pricing model

Model preferences – High tech/emerging companies

Companies generally have a choice of what option-pricing model to use in order to determine the fair value of their employee options. Since 2006, the model of choice has been the Black-Scholes option-pricing model. While the majority of companies continue to use the Black-Scholes model, a lattice pricing model is now used by almost 21% of the High Tech/Emerging companies for at least some of their awards, compared to only 4% in 2006.

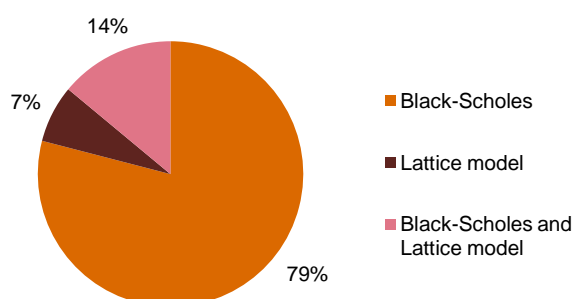
	2010	2009	2008	2007	2006
Valuation model selected					
Black-Scholes	79.55%	80.43%	87.50%	93.75%	95.83%
Lattice model	6.82%	6.52%	6.25%	6.25%	4.17%
Black-Scholes and Lattice model	13.64%	15.22%	6.25%	0.00%	0.00%
Total Companies	100.00%	100.00%	100.00%	100.00%	100.00%

Model preferences – Mature companies

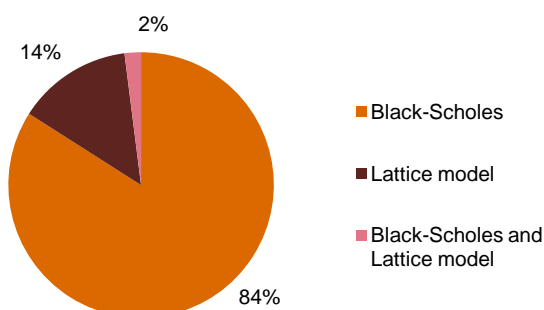
For Mature companies, the pricing model of choice also has been the Black-Scholes option-pricing model and remained so through 2010. About 16% of the companies employed a lattice model for their pricing model, reflecting a slight trend downward over the last 5 years.

	2010	2009	2008	2007	2006
Valuation model selected					
Black-Scholes	83.81%	81.31%	78.90%	81.65%	80.70%
Lattice model	14.29%	15.89%	18.35%	16.51%	17.54%
Black-Scholes and Lattice model	1.90%	2.80%	2.75%	1.83%	1.75%
Total Companies	100.00%	100.00%	100.00%	100.00%	100.00%

High tech/emerging 2010 valuation basis



Mature companies 2010 valuation basis



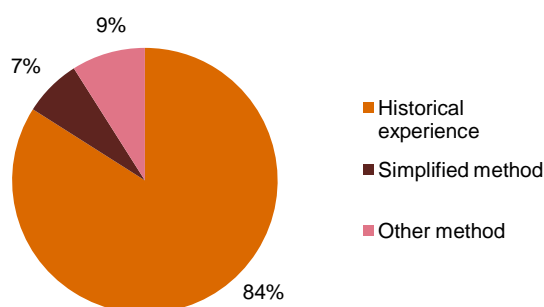
Option-pricing model assumptions

Basis for expected term and volatility – High tech/emerging companies

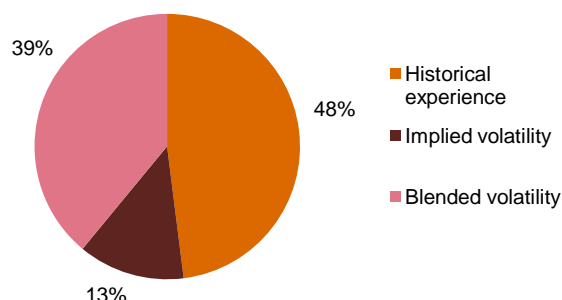
When setting the **expected term** or **volatility** assumptions (the more significant assumptions for the Black-Scholes pricing model), High Tech/Emerging companies in this study continue to rely heavily on historical experience. For the **expected term** assumption, 84% of companies relied solely on their historical experience while 7% used the so-called simplified method⁴ and another 9% relied on other methods (including Monte Carlo simulations) to estimate the **expected term**.

Of the 44 companies that granted stock options in 2010, 87% of High tech/Emerging companies used historical stock price data as the basis for their **volatility** assumption, though almost half of these companies blended their historical experience with implied volatility (i.e., the volatility inherent in their market traded options) or other measure of **volatility**. 13% of companies relied solely on their implied **volatility**.

2010 expected term rationale



2010 volatility rationale



⁴ As described in ASC 718-10-S99

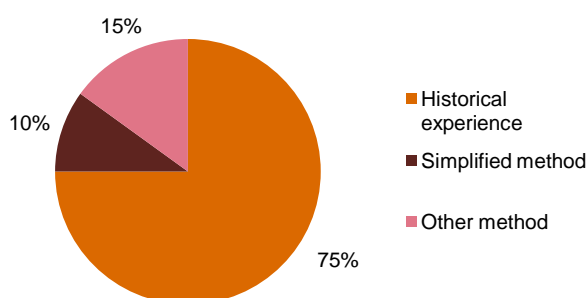
Option-pricing model assumptions – Expected term

Basis for expected term and volatility – Mature Companies

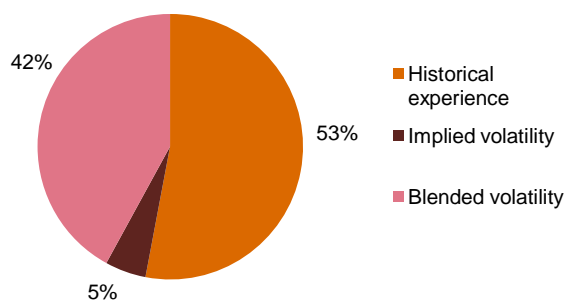
Mature companies have continued to rely on historical experience through 2010. For the **expected term** assumption, 75% of companies relied solely on their historical experience while 10% used the simplified method; another 15% relied on other methods.

Of the 105 companies that granted stock options in 2010, overall, 95% of Mature companies used historical stock price data as the basis for their **volatility assumption**, but almost half of these companies used a blend of both historical and implied/other volatilities. Only 5% of the companies in the analysis rely solely on their implied volatility.

2010 Expected term rationale



2010 Volatility rationale



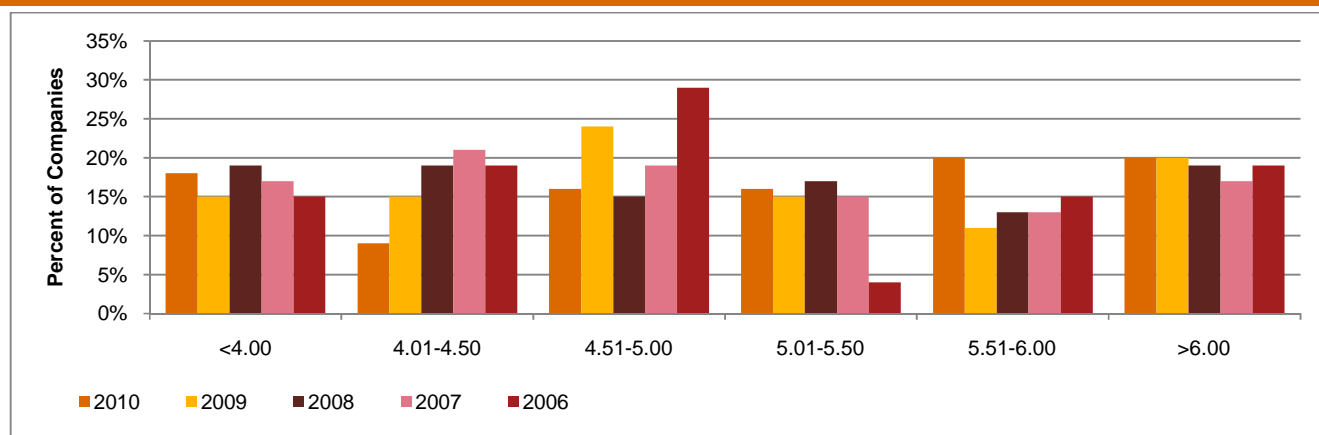
Expected term assumption – High tech/emerging companies

Over the 5-year period, the average assumption for the **expected term** has increased from 5.02 years to 5.31 years. On a percentile basis, the trend upward has been fairly consistent throughout the five year study.

Expected Term		2010	2009	2008	2007	2006
Low		3.16	3.38	3.46	2.60	3.00
Median (middle)		5.30	5.00	5.00	4.94	4.85
Mean (average)		5.31	5.16	5.16	5.07	5.02
High		7.65	7.65	10.00	10.00	6.78
Percentile	20%	4.35	4.13	4.16	4.16	4.38
	40%	4.96	4.70	4.72	4.64	4.66
	60%	5.66	5.40	5.12	5.26	5.00
	80%	6.11	6.00	6.00	6.00	6.00

For 2010, 61% of the companies used an **expected term** assumption falling within a range of 4.0 to 6.0 years compared to 65% in 2009. 44% of companies increased their expected term assumption (on average by .46 years) and 33% of companies decreased their expected term assumption from 2009 (on average by .31 years).

Expected term assumption (in years)



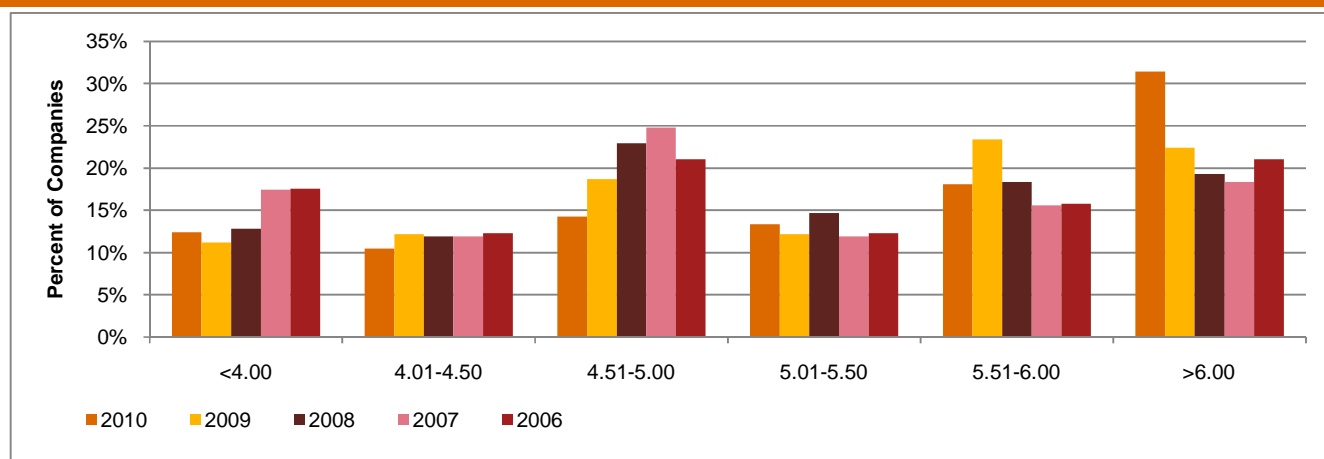
Expected term assumption – Mature companies

Over the 5-year period, the average assumption for **expected term** has increased from 5.23 years to 5.53 years. On a percentile basis, the trend upward has been fairly consistent throughout the 5-year study period. In 2010, 39.1% of companies increased their expected term assumption (on average by .68 years) and 20.0% of companies decreased their expected term assumption from 2009 (on average by .65 years).

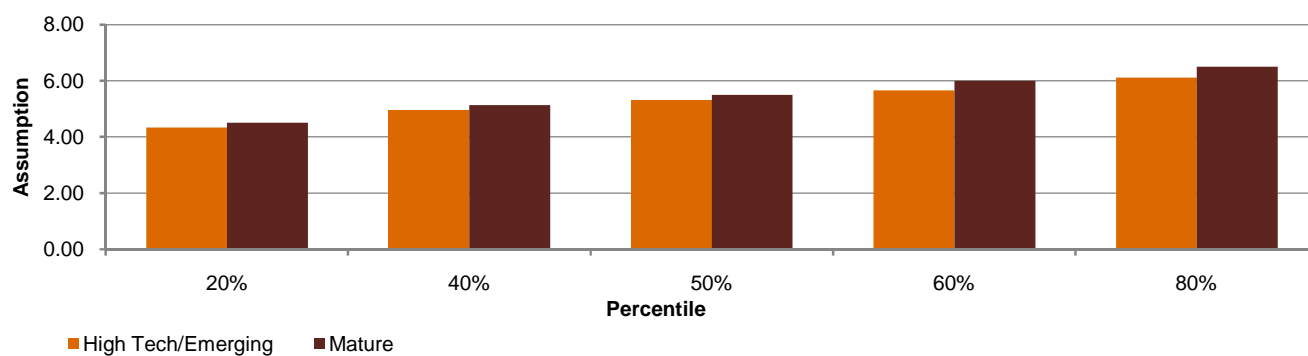
Expected Term		2010	2009	2008	2007	2006
Low		1.30	2.40	2.00	2.00	0.50
Median (middle)		5.50	5.50	5.20	5.00	5.00
Mean (average)		5.53	5.41	5.30	5.18	5.23
High		10.00	8.00	8.00	8.00	9.50
Percentile	20%	4.50	4.50	4.50	4.20	4.26
	40%	5.14	5.00	5.00	5.00	5.00
	60%	6.00	5.87	5.50	5.24	5.47
	80%	6.50	6.10	6.00	6.00	6.15

For 2010, 56% of the companies assumed an **expected term** within the range of 4.0 to 6.0 years as compared to 66% of companies in 2009. Comparing 2010 to 2009, the number of companies with an **expected term** of less than 4 years remained at about 12%; however the number of companies with an **expected term** above 6 years increased from 22% to 31% in 2010.

Expected term assumption (in years)



Comparison of 2010 expected term assumption - high tech/emerging vs. mature



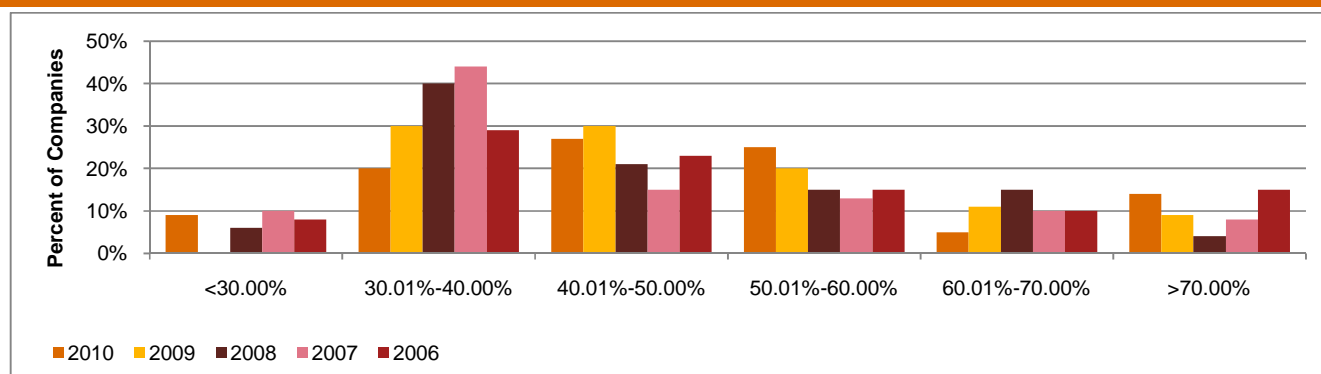
Option-pricing model assumptions – Volatility

Volatility assumption – High tech/emerging companies

For High Tech/Emerging companies, overall volatility increased most significantly from 2008 to 2009, on average by 5.5%. While volatility assumptions have begun to decrease from 2009 levels, average volatility still exceeds historical levels. Recent market conditions resulted in stock price fluctuation for a number of companies, which can still be seen as 18 companies increased their volatility assumption (on average by 2.66%) from 2009. However these increases are offset by 26 companies which decreased their volatility from 2009 levels (on average by 5.5%).

Volatility		2010	2009	2008	2007	2006
Low		28.00%	31.60%	27.00%	24.90%	24.10%
Median (middle)		46.09%	47.35%	40.90%	38.95%	45.00%
Mean (average)		49.96%	51.54%	45.99%	45.51%	50.52%
High		90.00%	100.00%	80.00%	100.00%	120.00%
Percentile	20%	36.20%	37.20%	34.40%	32.44%	34.88%
	40%	43.20%	43.00%	39.89%	35.00%	41.40%
	60%	51.68%	55.00%	43.64%	45.61%	50.60%
	80%	59.66%	63.00%	60.00%	60.00%	64.28%

Volatility assumption

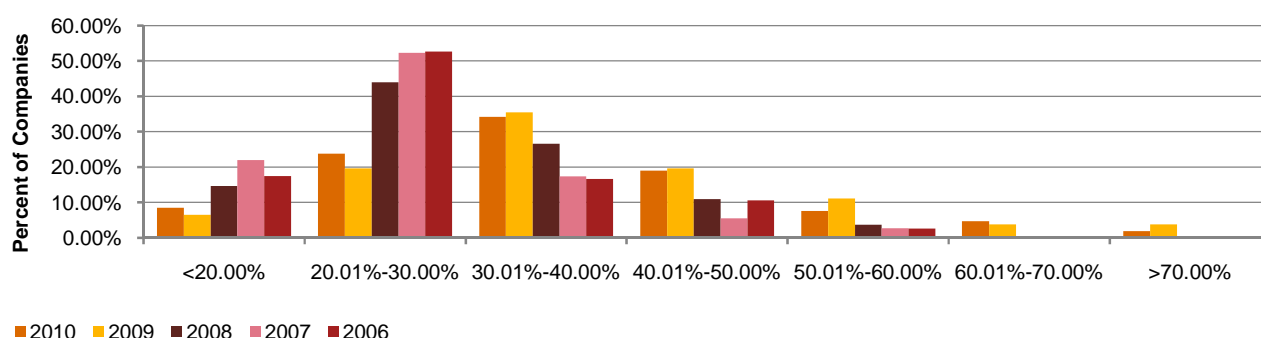


Volatility assumption – Mature companies

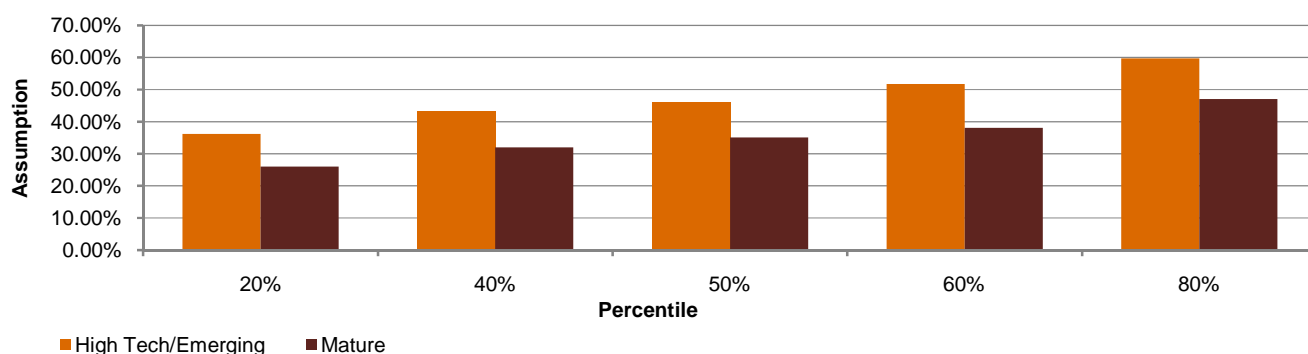
For Mature companies, overall volatility also increased most significantly from 2008 to 2009, on average by 9%. While volatility assumptions have begun to decrease from 2009 levels, average volatility still exceeds historical levels. Recent market conditions resulting in stock price fluctuations for a number of companies can still be seen as 43 companies increased their volatility assumption (on average by 2.92%) in 2010. However, these increases were offset by 49 companies which decreased their volatility from 2009 levels (on average by 7.5%).

Volatility		2010	2009	2008	2007	2006
Low		14.77%	15.60%	13.10%	13.30%	15.90%
Median (middle)		35.00%	36.00%	28.80%	25.50%	26.00%
Mean (average)		36.80%	39.06%	30.04%	26.94%	28.06%
High		83.00%	82.00%	59.50%	54.11%	53.75%
Percentile	20%	26.00%	28.52%	22.34%	19.52%	20.50%
	40%	32.00%	35.00%	27.15%	23.75%	24.15%
	60%	38.00%	39.48%	30.97%	27.00%	27.56%
	80%	47.06%	49.56%	35.79%	32.08%	34.32%

Volatility assumption



Comparison of 2010 volatility assumption - high tech/emerging vs. mature



Option-pricing model assumptions – Risk-free rate and dividend yield

Other black-scholes pricing model assumptions – High tech/emerging companies

Generally, the **risk-free rate** and the **dividend yield** assumptions may not have as significant an impact on the Black-Scholes pricing model results as the **expected term** and **volatility** assumptions, but they are still important factors in determining fair value of the option awards and should not be forgotten. Overall, there was very little movement in the average risk-free rate from 2009 to 2010 even though on average the **expected term** assumption increased for these companies. While the **risk-free rate** typically moves in tandem with **expected term**, a comparison of implied interest rates on traded US Treasury interest-only STRIP bonds showed that for the second half of 2010, risk-free rates decreased to below 2009 rates. The period in which a company grants its equity awards could influence the movement of the risk free rate as compared to the prior year.

The average dividend yield for the 5 High Tech/ Emerging companies declaring dividends decreased from 2.43% in 2009 to 1.70% in 2010.

	Risk-free interest rate				
	2010	2009	2008	2007	2006
Low	1.20%	1.40%	0.00%	3.60%	3.51%
Median (middle)	2.06%	2.05%	2.90%	4.50%	4.70%
Mean (average)	2.20%	2.21%	2.98%	4.44%	4.75%
High	3.30%	3.30%	4.90%	5.14%	9.43%
	Dividend yield				
	2010	2009	2008	2007	2006
Low	1.00%	0.60%	0.60%	0.60%	0.70%
Median (middle)	1.30%	2.20%	1.75%	1.51%	1.35%
Mean (average)	1.70%	2.43%	1.65%	1.51%	1.43%
High	3.30%	4.84%	2.60%	2.50%	2.50%

- In 2010, only 5 companies used a non-zero dividend yield assumption, down from 6 in 2009 – 2007, and 7 in 2006; the information shown above is only for those companies using a non-zero dividend yield assumption.

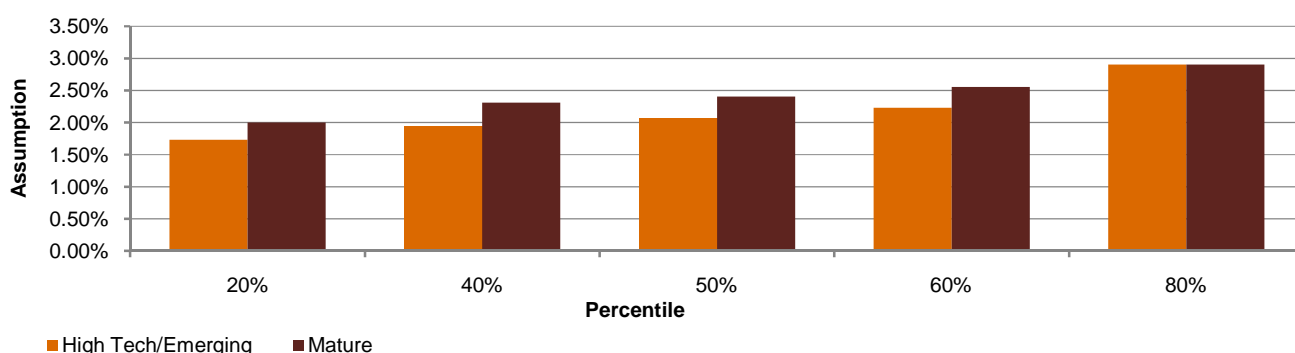
Other black-scholes pricing model assumptions – Mature companies

With the exception of the **risk-free rate**, the option pricing assumptions for both Mature and High Tech/Emerging companies trended in the same direction. Mature company data gathered from the companies reporting assumptions for their option-pricing model with respect to the **risk-free rate** and the **dividend yield** is shown below.

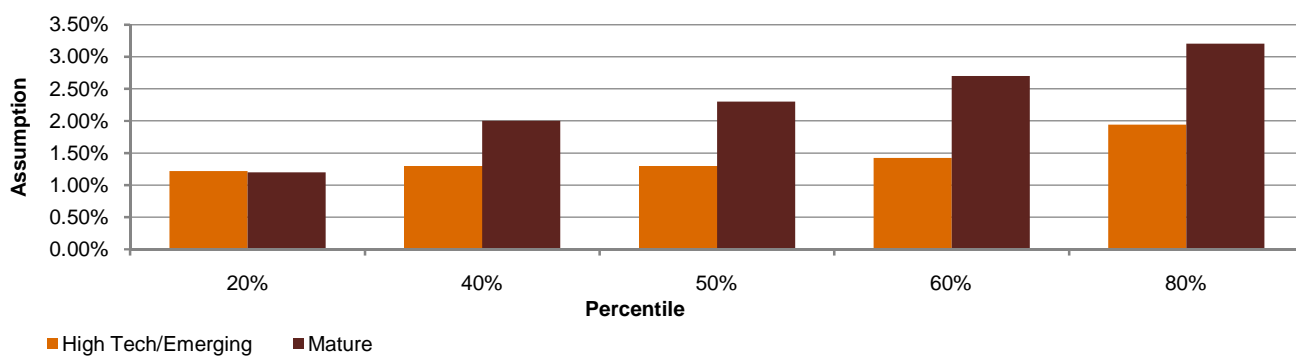
	Risk-free interest rate				
	2010	2009	2008	2007	2006
Low	0.60%	0.40%	1.50%	2.90%	3.00%
Median (middle)	2.40%	2.10%	2.97%	4.61%	4.63%
Mean (average)	2.41%	2.22%	2.96%	4.56%	4.66%
High	3.71%	3.70%	4.70%	5.06%	5.13%
	Dividend yield				
	2010	2009	2008	2007	2006
Low	0.48%	0.02%	0.10%	0.10%	0.10%
Median (middle)	2.30%	2.75%	2.09%	2.00%	2.00%
Mean (average)	2.38%	2.94%	2.47%	2.11%	2.19%
High	6.61%	10.09%	8.75%	4.50%	5.70%

- Reflects only those companies using a non-zero dividend yield assumption.

Comparison of 2010 risk-free interest rate assumption - high tech/emerging vs. mature



Comparison of 2010 dividend yield assumption - high tech/emerging vs. mature



Mix of awards granted

High tech/emerging companies

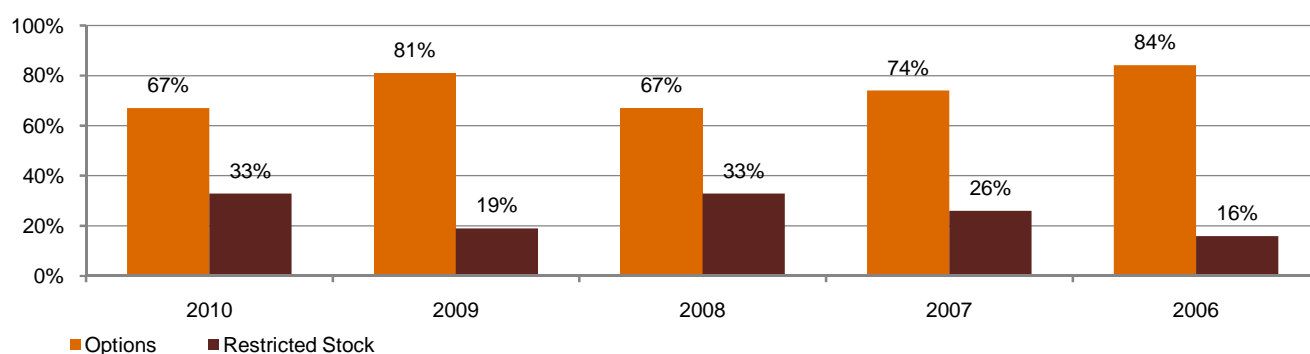
Award activity in 2010 returned to historical levels, after an increase in activity in 2009. From 2006-2008 the number of stock option grants was running at a pace of about 145-165 million per year and in 2010 again the number of units granted is in that range. Depressed stock prices were a contributing factor for the high units in 2009, as the total fair value of stock options granted decreased by approximately \$250 million from 2008.

While the number of options granted in 2010 is in line with pre-2009 levels, the total fair value of Options granted has steadily decreased since 2006. In comparison, since 2006, the number and total fair value of restricted stock granted has increased, with 2010 almost reaching the peak level of 2008. The total fair value of restricted stock grants in 2010 was more than twice that of stock options granted – the first occurrence of reaching this threshold in the five-year period.

	2010	2009	2008	2007	2006
Total options *	144,412	349,567	159,205	144,540	164,390
Total grant date option value *	\$758,957	\$831,338	\$1,085,708	\$1,341,897	\$1,556,698
Total stock *	71,430	82,173	78,277	51,509	30,499
Total grant date stock value *	\$1,758,925	\$1,407,513	\$1,768,883	\$1,421,450	\$782,349

- In thousands

Award mix – Options and restricted stock (percent of units awarded)



Mature companies

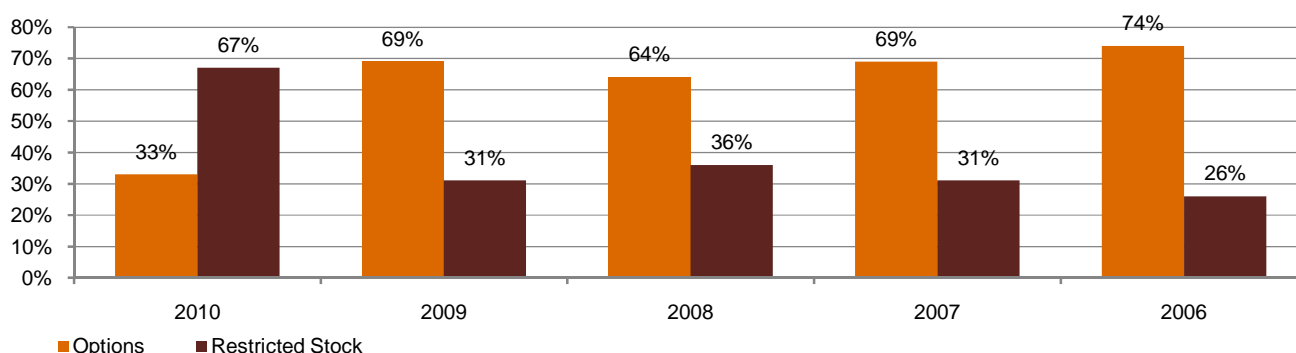
Award activity in 2010 was slightly lower than historical levels for stock options and reflected a shift to restricted stock awards. Similar to the trend for High Tech/emerging companies, in 2009 total fair values for equity awards decreased from prior years even though the total number of awards increased reflecting the economic environment at the time.

From 2006 through 2010, restricted stock awards have steadily increased in number of awards granted, with a peak of 1.1 billion awards totalling nearly \$16 billion awarded in 2010. Much of the movement from stock options to restricted stock in 2010 was related to companies within the financial services sector.

	2010	2009	2008	2007	2006
Total options *	544,108	1,174,790	599,960	594,178	646,846
Total grant date option value *	\$4,329,668	\$4,863,435	\$5,365,314	\$5,955,768	\$6,019,187
Total stock *	1,108,024	533,304	337,382	267,426	232,679
Total grant date stock value *	\$15,823,326	\$8,826,501	\$11,193,661	\$11,890,426	\$9,214,364

- In thousands

Award mix – Options and restricted stock (percent of units awarded)

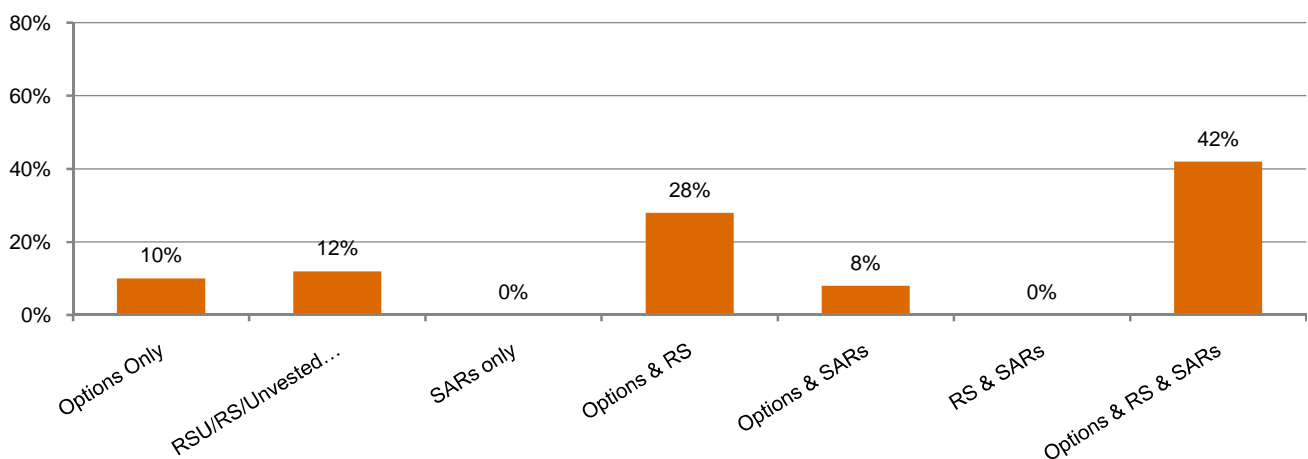


Mix of awards granted – Specific type

High tech/emerging companies

Only 22% of High Tech/Emerging companies analyzed in 2010 granted one type of equity award (10% granted stock options only, 12% granted restricted stock only, and 0% granted SARs only). The majority of companies (78%) provided a mix of equity award types including both stock options and restricted stock, although SARs were frequently in the mix (42% of companies granted SARs along with stock options and restricted stock).

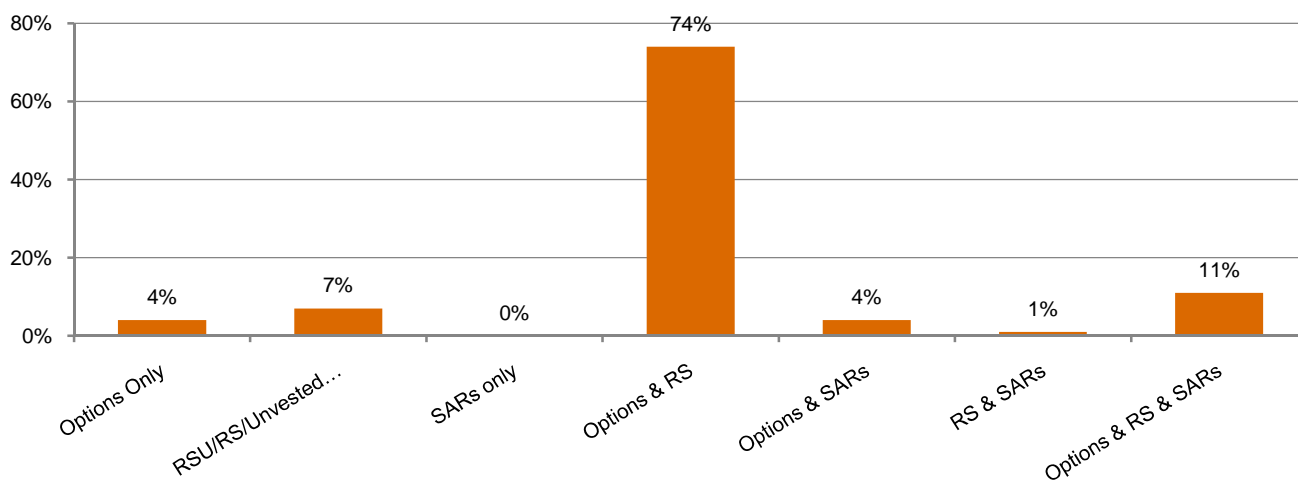
2010 Award mix – By specific type (percent of companies)



Mature companies

Only 12% companies analyzed in 2010 granted one type of award (4% granted stock options only, 7% granted restricted stock only, and 0% granted SARs only.) The majority of companies (88%) provided a mix of both stock options and restricted stock. Differing from the High Tech/Emerging companies, only 11% of Mature companies utilized SARs, stock options, and restricted stock.

2010 Award mix – By specific type (percent of companies)



Stock compensation expense

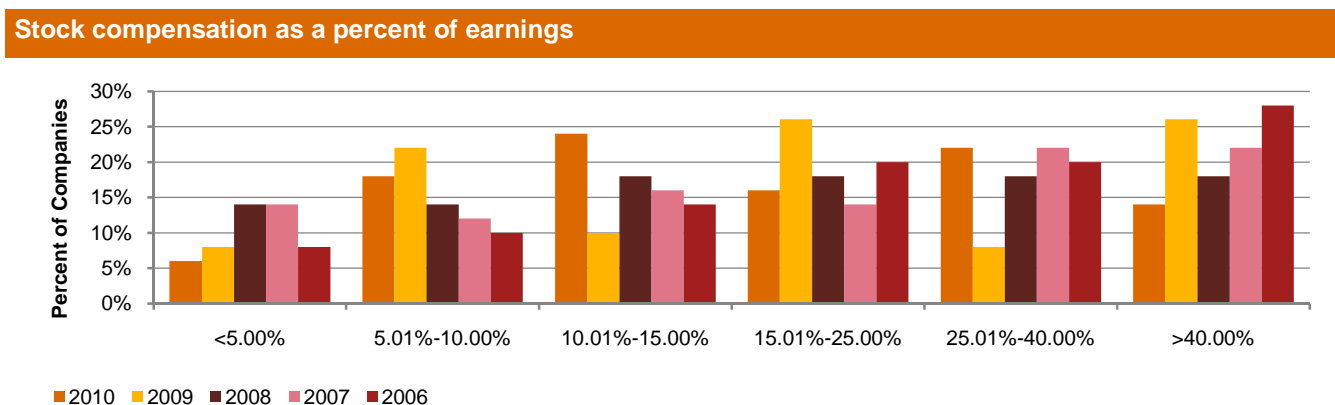
High tech/emerging companies

The median Stock Compensation Expense for 2010 was \$9 million, compared to about \$12 to \$13 million for 2006-2009 periods. With pre-tax earnings up in 2010 (a median of \$32 million compared to \$11 million in 2009), Stock Compensation Expense as a percent of Earnings generally decreased from 2009 to 2010.

Median earnings and stock compensation expense (pre-tax, in millions)					
	2010	2009	2008	2007	2006
Stock Comp. Expense	\$9	\$13	\$12	\$12	\$13
Earnings	\$32	\$11	\$33	\$21	\$26

Stock comp expense as % of income before taxes					
	2010	2009	2008	2007	2006
Percentile 20%	8.54%	6.42%	8.06%	8.19%	11.16%
40%	13.53%	14.77%	12.89%	14.27%	17.45%
60%	18.44%	21.85%	20.40%	25.87%	27.21%
80%	35.14%	42.73%	34.93%	40.76%	49.09%

- Absolute values were used for companies with net loss



Mature companies

The median Stock Compensation Expense for 2010 was \$53 million, compared to \$42 to \$49 million for 2006-2009 periods. With pre-tax earnings up in 2010 (a median of \$948 million compared to \$583 million in 2009), Stock Compensation Expense as a percent of Earnings generally decreased from 2009 to 2010.

Median earnings and stock compensation expense (pre-tax, in millions)

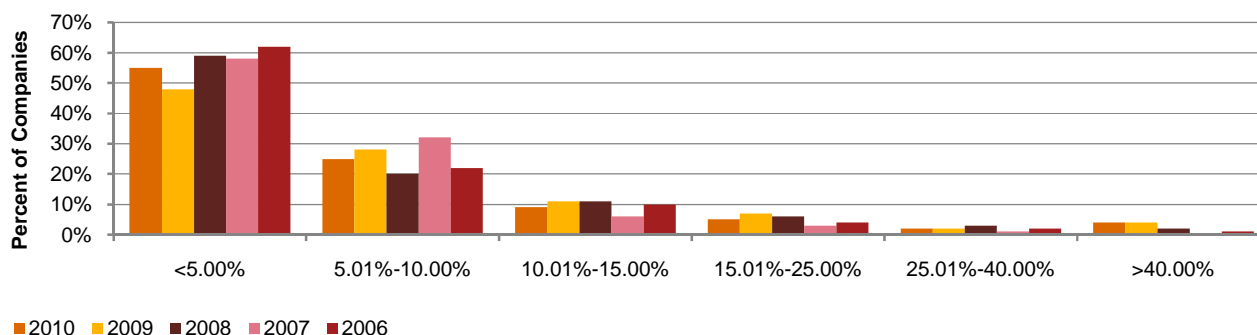
	2010	2009	2008	2007	2006
Stock Comp. Expense	\$53	\$49	\$43	\$42	\$46
Earnings	\$948	\$583	\$666	\$1,138	\$1,222

Stock comp expense as % of income before taxes

	2010	2009	2008	2007	2006
Percentile 20%	2.61%	2.83%	2.05%	2.35%	2.06%
40%	4.18%	4.04%	3.63%	3.73%	3.21%
60%	5.76%	5.98%	5.25%	5.27%	4.47%
80%	9.73%	11.94%	10.47%	7.47%	8.34%

- Absolute values were used for companies with net loss

Stock compensation as a percent of earnings



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