2006 Tillinghast Pricing Methodology Survey Results

Actuaries' Club of the Southwest

Fall Meeting

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Presentation overview

- Profit measures and objectives
- Stochastic analysis
- Profit targets versus achieved profitability
- Validation of pricing objectives

The Tillinghast business of Towers Perrin recently conducted the 2006 Pricing Methodology Survey

- The focus of the survey was on the profit objectives and assumptions used in pricing 2005 new issues of individual life, annuity and health products
- The survey covered the following eleven products:

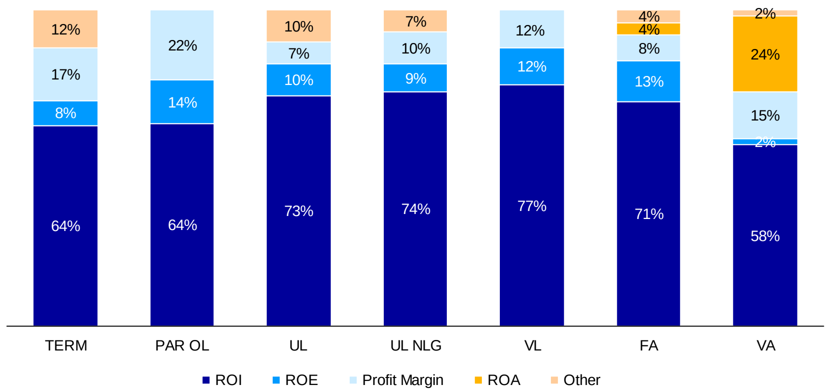
- Term Insurance (TERM)
- Par Ordinary Life (PAR OL)
- Universal Life with no-lapse guarantee (UL NLG)
- Universal Life (UL)
- Variable Life/Variable Universal Life (VL)
- Fixed Deferred Annuity (FA)
- Variable Deferred Annuity (VA)
- Equity Indexed Deferred Annuity (EIA)
- Single Premium Immediate Annuity (SPIA)
- Long-Term Care (LTC)
- Individual Disability Income (IDI)

- 80 life insurance, annuity and health care writers participated (including some of the largest writers)
  - Of these, 66 respondents were stock companies and 14 were mutual companies or fraternal organizations

Profit measures and objectives

Statutory return on investment (ROI) remains the most common primary profit measure

Primary Profit Measures by Product (Percent of Responses)



ROI = statutory return on investment (internal rate of return).
ROE = GAAP return on equity.
Profit margin = present value of profits as a percent of present value of premium.
ROA = present value of profits as a percent of present value of reserves/fund.

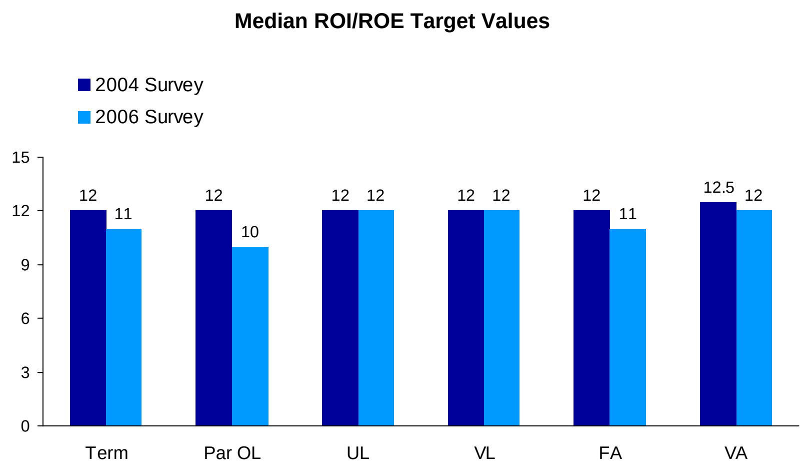
The median target return on investment for all companies ranges from 10.0% to 14.0% for the various product types surveyed

ROI/ROE Target Values*

Product	Mutual/Fraternal			Stocks			All Companies		
	Minimum	Maximum	Median	Minimum	Maximum	Median	Minimum	Maximum	Median
TERM	8.0%	12.5%	9.0%	6.0%	16.0%	11.0%	6.0%	16.0%	11.0%
PAR OL	7.0%	11.0%	9.0%	9.0%	16.0%	10.0%	7.0%	16.0%	10.0%
UL NLG	8.0%	12.0%	8.0%	8.0%	16.0%	11.0%	8.0%	16.0%	11.0%
UL	8.3%	12.5%	9.0%	9.0%	20.0%	12.0%	8.3%	20.0%	12.0%
VL	8.5%	12.5%	11.0%	10.0%	20.0%	12.0%	8.5%	20.0%	12.0%
FA	9.0%	17.5%	11.0%	8.0%	15.0%	11.0%	8.0%	17.5%	11.0%
VA	9.0%	12.5%	11.0%	10.0%	20.0%	12.0%	9.0%	20.0%	12.0%
EIA				10.0%	15.0%	11.0%	9.0%	15.0%	11.0%
SPIA	9.0%	13.0%	11.0%	8.0%	15.0%	11.0%	8.0%	15.0%	11.0%
LTC	9.0%	12.0%	9.0%	12.0%	16.0%	14.0%	9.0%	16.0%	12.0%
IDI				12.0%	15.0%	14.5%	9.0%	15.0%	14.0%
All	**7.0%**	**17.5%**	**10.0%**	**6.0%**	**20.0%**	**11.0%**	**6.0%**	**20.0%**	**11.0%**

*Results are based on primary profit measures and do not include the increase in equity returns that may be available through debt leverage.
ROI = statutory return on investment (internal rate of return).
ROE = GAAP return on equity.
Note: Products with less than four responses were not reported

Biggest change in profit objective by product was for Par OL



Nearly all companies that use ROI/ROE as the primary profit measure for life and annuities calculate profit targets after provision for taxes and target surplus

Percent of Profit Targets After Provision for Tax and Target Surplus

Profit Measure	Primary			Secondary		
	Life	Annuities	Health	Life	Annuities	Health
ROI	98%	99%	100%	91%	98%	50%
ROE	100%	100%	N/A	100%	87%	N/A
ROA	N/A	64%	N/A	100%	67%	N/A
Profit Margin	22%	46%	33%	80%	63%	83%

- ROA and profit margin are less likely to be calculated after provision for target surplus

Targeted ROI/ROEs have trended downward for the past several years, perhaps driven by falling interest rates

ROI/ROE Target Values*

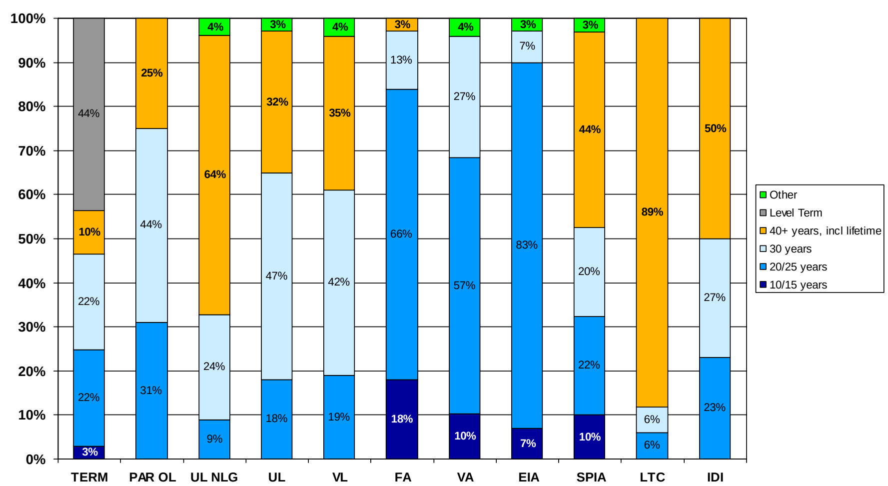
ROI/ROE	Mutual/Fraternal (PAR OL)					Stock (UL)				
	1998	2000	2002	2004	2006	1998	2000	2002	2004	2006
<12.0%	83%	82%	100%	67%	100%	0%	13%	20%	28%	45%
12.0% – 13.5%	17%	12%	0%	17%	0%	45%	43%	43%	44%	33%
14.0% – 15.0%	0%	6%	0%	17%	0%	50%	35%	37%	28%	12%
>15.0%	0%	0%	0%	0%	0%	5%	9%	0%	0%	10%
Average 10-yr Treasuries**	6.4%	5.7%	5.0%	4.6%	4.4%	6.4%	5.7%	5.0%	4.6%	4.4%

- ROI/ROE targets for stock companies continue to trend downward, with a higher proportion targeting less than 12% as compared to the last survey

*Results are based on primary profit measures and do not include the increase in equity returns that may be available through debt leverage.
**The "Average 10-year Treasuries" are for the calendar year prior to the survey, as the survey is based on products priced in the previous calendar year.
Source: Tillinghast Pricing Methodology Surveys; Federal Reserve.

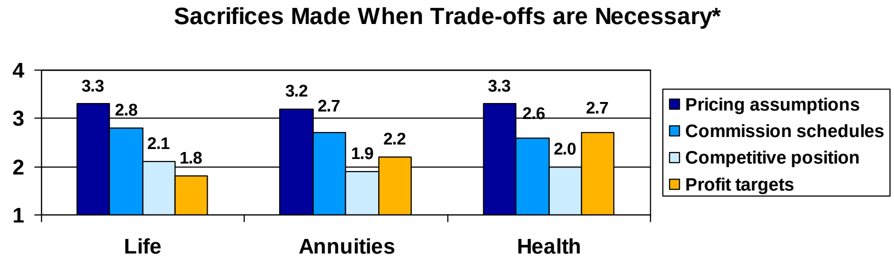
The most common pricing horizon for UL, VL and PAR OL is 30 years, while for deferred annuity products it is 20/25 years

Pricing Horizon by Product (Percent of Responses)



- UL NLG and LTC products are more commonly priced over the lifetime of the business, while term products are most often priced over the level term period

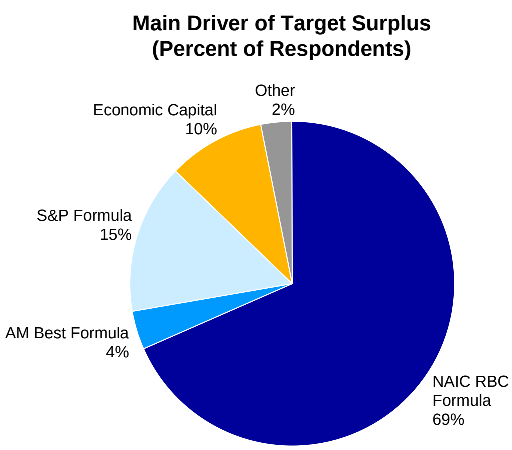
Profit targets and competitive position are most likely to be sacrificed when trade-offs are necessary to meet defined goals



- 41% of respondents indicated competitive position as most likely to be sacrificed when trade-offs are necessary to meet defined goals, while 39% indicated profit targets as the first to be sacrificed

* Values represent average of all responses, where respondents ranked relative importance on a scale of 1 to 4. 4 = least likely to be sacrificed, 1 = most likely to be sacrificed.

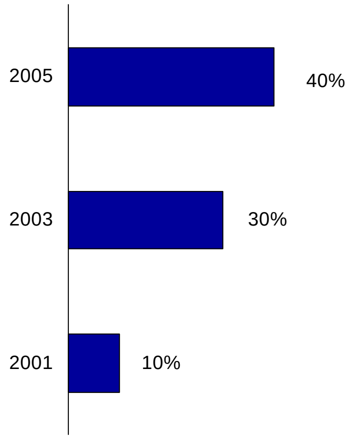
The majority of companies continue to use the NAIC RBC formula as the main driver of target surplus



- The percentage of respondents using the NAIC RBC formula has increased from 63% in 2003 to 69% in 2005
- The percentage of respondents using the S&P formula has decreased from 20% in 2003 to 15% in 2005

The number of companies setting target surplus above 250% has increased from 2003

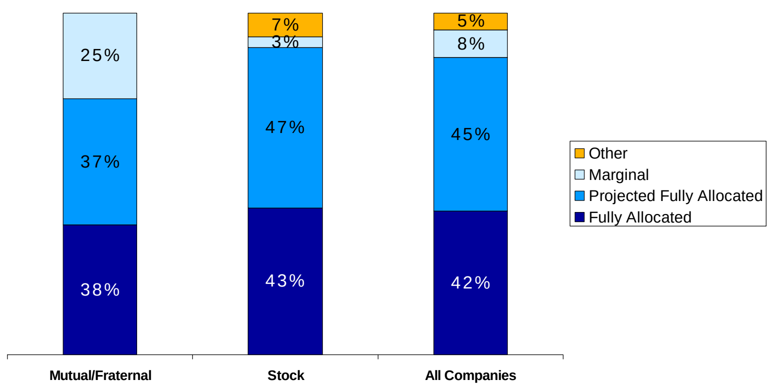
% Respondents Using RBC Ratios Above 250%



- For the 2006 survey, for companies with RBC ratios above 250%:
  - 50% indicated they used values in the range of 250% - 300%
  - 50% of respondents used values above 300%

There is a fairly equal split among respondents using "fully allocated" and "projected fully allocated" expenses in calculating target profitability

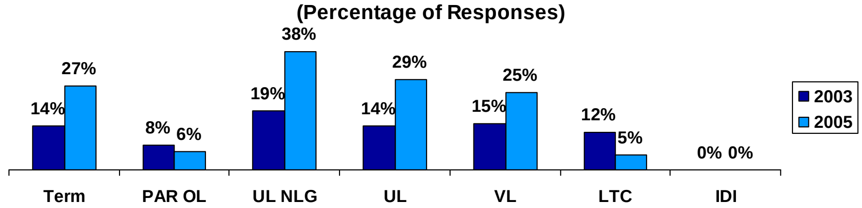
Type of Expense Assumption Used (All Products)
(Percent of Responses)



- Fully allocated = today's expense levels (includes overhead)
- Projected fully allocated = expense levels on a fully allocated basis expected to be achieved in future based on projected sales (includes overhead)
- Marginal = does not include overhead

The number of companies indicating that they projected future mortality improvements when calculating expected profitability has increased from 2003, with a few exceptions by product

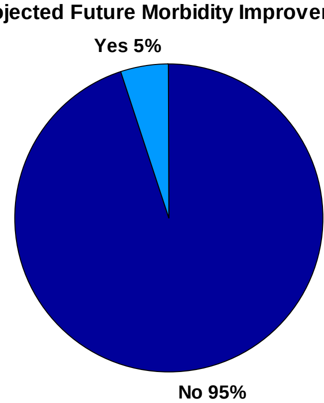
Projected Future Mortality Improvement (Percentage of Responses)



- Future expected population improvement was cited as the rationale for the projected improvements by the majority of respondents that project them
- Projected improvements were generally limited to the first 10 or 20 policy years
- This slide does not include immediate annuities because we presume that virtually all companies reflect future mortality improvements in pricing immediate annuities

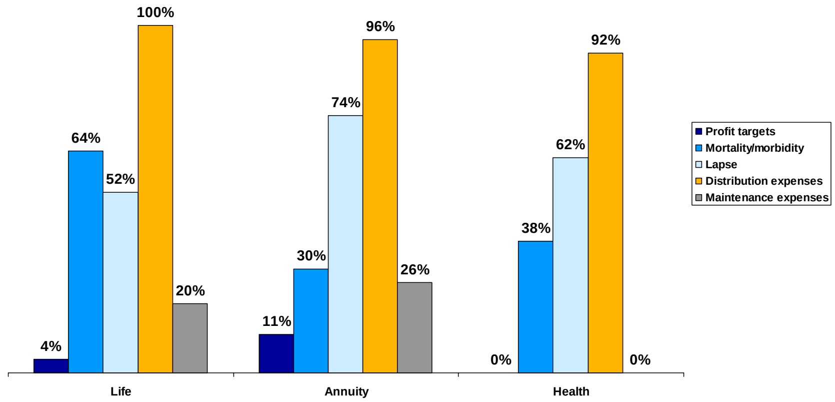
Most companies did not include projected future improvements in LTC morbidity assumptions

Projected Future Morbidity Improvement



Approximately half the respondents assume no variance in pricing assumptions by channel; for companies that have multiple distribution channels, nearly all vary pricing assumptions by distribution expenses

Pricing Assumptions Varied by Channel*
(Percent of Respondents)



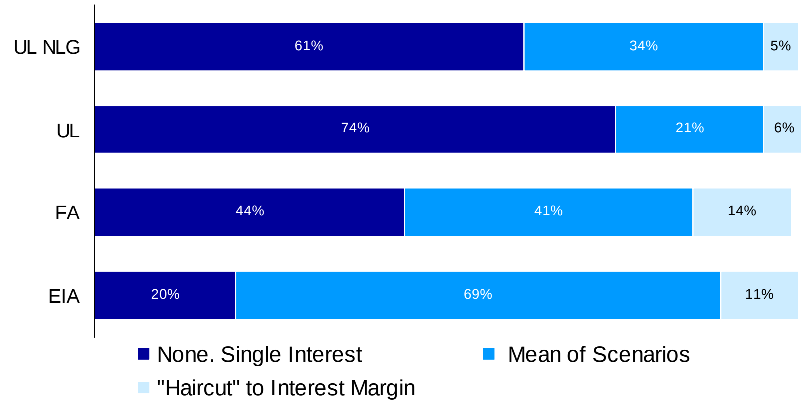
- 81% of companies indicated that they use multiple distribution channels

* Companies selected all choices that applied.

Stochastic analysis

Most companies do not make an adjustment for the cost of interest rate embedded options in assets and liabilities for UL and UL NLG

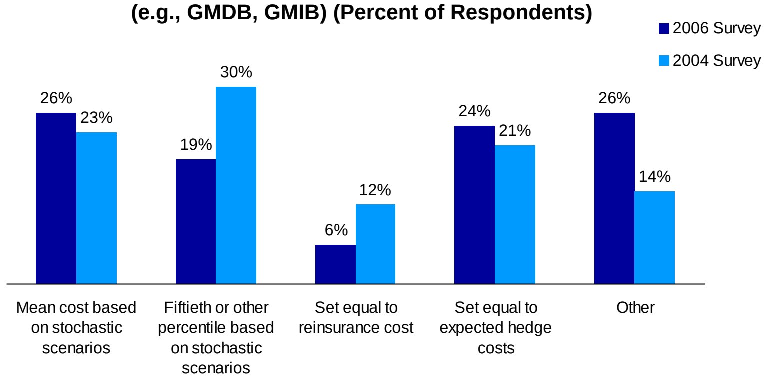
Methodology for Reflecting Interest Rate Embedded Options in Assets and Liabilities (Percent of Responses)*



The results of this slide are surprising to us. There is not as much provision for interest rate risk as we would have thought.

Practices vary by company for pricing guarantees on VAs

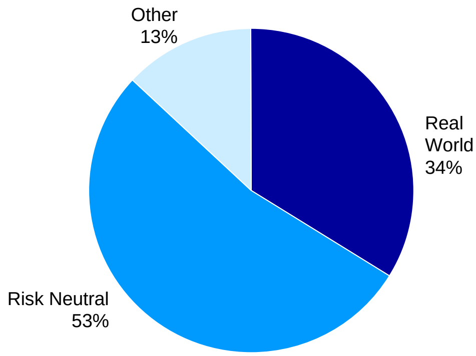
Method Used to Determine Cost of Guarantees on VAs (e.g., GMDB, GMIB) (Percent of Respondents)



- The 85th percentile was the median response for companies that use the “fiftieth or other percentile”
- For “Other,” the responses varied from company to company

Most companies use “risk neutral” stochastic scenarios to determine the cost of guarantees on VAs

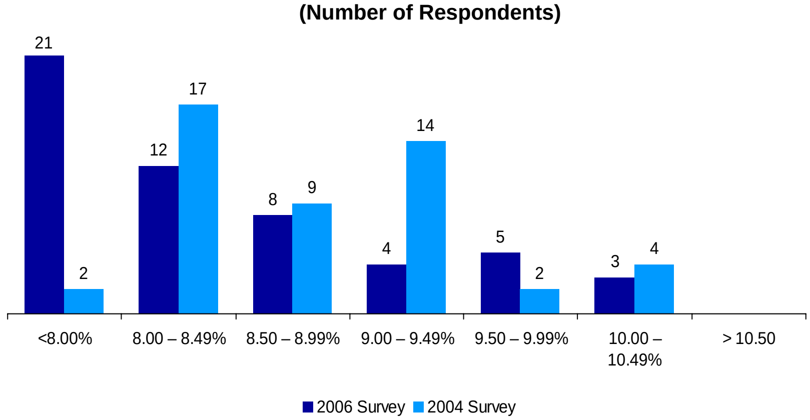
Type of Scenario
(Percent of Respondents)



- The most common responses for “Other” were:
  - Consultant data
  - Multiple types of scenarios

Assumed separate account growth rates have decreased since 2003

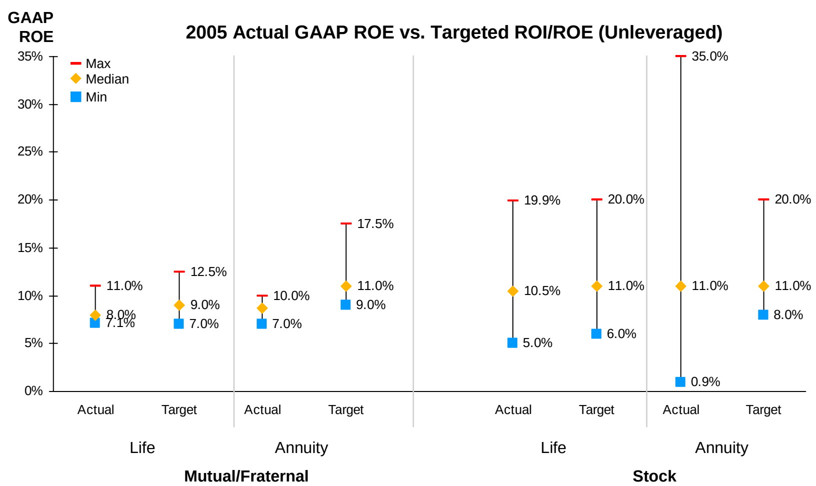
Gross Separate Account Earned Rate*
(Number of Respondents)



*Gross separate account earned rate assumed in calculating expected profitability (before deductions for mortality and expense risk charge, investment advisory fee or other fund expenses).

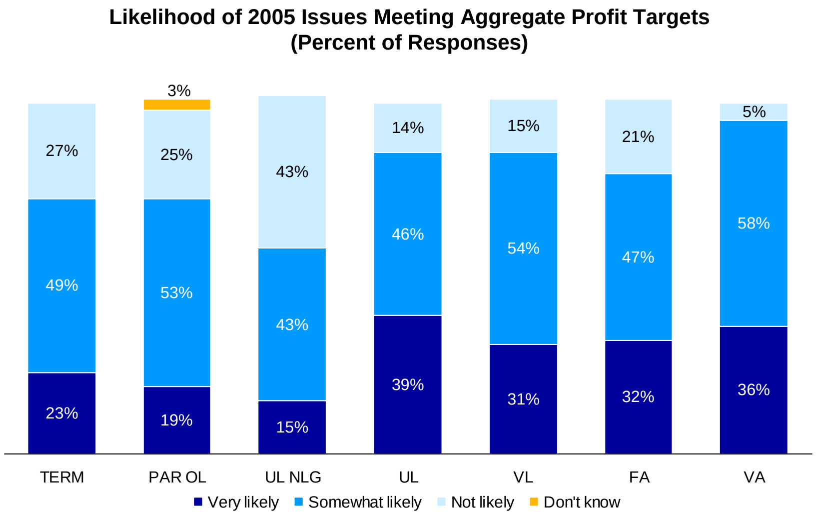
Profit targets versus achieved profitability

Median GAAP ROEs achieved for life and annuity business in-force in 2005 are generally lower than targeted median ROI/ROEs for 2005 new issues

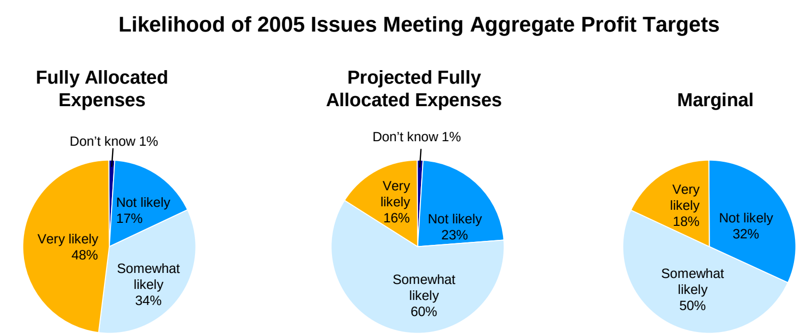


Note: Actual and targeted minimum and maximum results are not necessarily for the same company.

Almost one-fifth of respondents indicated that product sales in 2005 are not likely to achieve aggregate profit targets, with some variation by product



The likelihood of achieving aggregate profit targets varies by the type of expense assumption used

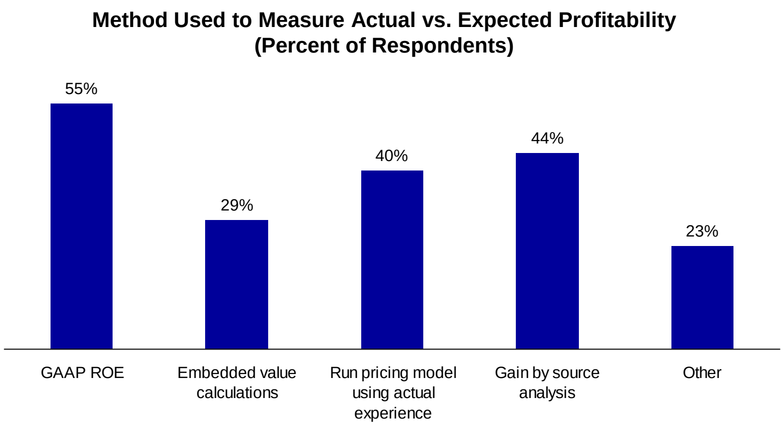


- Respondents who used "Fully Allocated Expenses" are more confident that they will achieve aggregate profit targets
- The proportion of "very likely" for "Fully Allocated Expenses" has increased from 43% in 2003 to 48% in 2005

Fully allocated = today's expense levels.
Projected fully allocated = expense levels on a fully allocated basis expected to be achieved in future based on projected sales.

Validation of pricing objectives

55% of the participants measure actual vs. targeted profitability by monitoring GAAP ROE



- Monitoring actual to expected was the most common answer for "Other"

Note: Companies selected all the methods that applied.