



Basic Track III

2011 CLRS

September 15-16, 2011

Las Vegas, Nevada

Introduction

- Comparison of Reserve Methods
- Schedule P - A Source of Data
- You set the reserve!
 - Pick LDFs, Tails & ELRs
 - Compare Indications
 - Select a Best Estimate
 - Select a Range

RECALL RESERVE METHOD DIFFERENCES

Comparison of Reserve Methodologies

Expected Losses

Expected

| | |
|---------------------|------------------|
| \$6,000 Reported | \$10,000 IBNR |
|---------------------|------------------|

Example : Reported Incurred Losses are Twice as High as Expected

ELR

| | |
|----------------------|-----------------|
| \$12,000 Reported | \$4,000 IBNR |
|----------------------|-----------------|

Bornhuetter-
Ferguson

| | |
|----------------------|------------------|
| \$12,000 Reported | \$10,000 IBNR |
|----------------------|------------------|

Incurred
Development

| | |
|----------------------|------------------|
| \$12,000 Reported | \$20,000 IBNR |
|----------------------|------------------|

Example : Reported Incurred Losses are Half of Expected

ELR

| | |
|---------------------|------------------|
| \$3,000 Reported | \$13,000 IBNR |
|---------------------|------------------|

Bornhuetter-
Ferguson

| | |
|---------------------|------------------|
| \$3,000 Reported | \$10,000 IBNR |
|---------------------|------------------|

Incurred
Development

| | |
|---------------------|-----------------|
| \$3,000 Reported | \$5,000 IBNR |
|---------------------|-----------------|

SCHEDULE P

TERMINOLOGY

- Bulk + IBNR reserves include:
 - Reserves for claims not yet reported (pure IBNR)
 - Claims in transit
 - Development on known claims
 - Reserves for reopened claims

SCHEDULE P TERMINOLOGY

Reserves = Liabilities
= Accruals
= Unpaid
= Case Reserves + IBNR

Incurring losses and Claim counts may have various meanings!

DATA AVAILABLE FROM SCHEDULE P - PART 1

- Loss Adjustment Expenses
 - Direct+Assumed, Ceded
 - Defense and Cost Containment (columns 6-7; 17-20)
 - Adjusting and Other (columns 8-9; 21-22)
 - Cumulative Paid LAE, Case Reserves, Bulk + IBNR Reserves

- Claim Counts
 - Reported (column 12)
 - Outstanding (column 25)
 - Closed = Reported - Outstanding

DATA AVAILABLE FROM SCHEDULE P - PART 2,3, & 4

- Each Part contains Net Loss + Defense & Cost Containment (DCC)
 - 10 accident years of history
 - Note some lines of business = two year detailed history
 - 10 calendar-year periods of development
 - Summary = Σ (21 Lines of Business)
 - Summary contains - full 10 year history for lines of business with two year detailed history
 - Check to see if properly calculated

DATA AVAILABLE FROM SCHEDULE P - PART 2,3, & 4

Part 2 = Total Incurred
= Published Ultimate
= Paid + Case + IBNR

Part 3 = Paid history

Part 4 = IBNR history

Case Incurred:

Total Incurred Part 2 - IBNR Part 4

Case Reserve:

Total Incurred Part 2 - IBNR Part 4 - Paid Part 3

SCHEDULE P - PART 3

Paid Net Loss + DCC

SCHEDULE P - PART 3 - SUMMARY
(\$000 omitted)

| Years in Which Losses Were Incurred | CUMULATIVE PAID NET LOSSES + DEFENSE & COST CONTAINMENT EXPENSES REPORTED AT YEAR END (\$000 OMITTED) | | | | | | | | | | 11 Number of Claims Closed With Loss Payment | 12 Number of Claims Closed Without Loss Payment |
|-------------------------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|--|---|
| | 1 2001 | 2 2002 | 3 2003 | 4 2004 | 5 2005 | 6 2006 | 7 2007 | 8 2008 | 9 2009 | 10 2010 | | |
| 1. Prior | | | | | | | | | | | | |
| 2. 2001 | | | | | | | | | | | | |
| 3. 2002 | XXXX | | | | | | | | | | | |
| 4. 2003 | XXXX | XXXX | | | | | | | | | | |
| 5. 2004 | XXXX | XXXX | XXXX | | | | | | | | | |
| 6. 2005 | XXXX | XXXX | XXXX | XXXX | | | | | | | | |
| 7. 2006 | XXXX | XXXX | XXXX | XXXX | XXXX | | | | | | | |
| 8. 2007 | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | | | | | | |
| 9. 2008 | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | | | | | |
| 10. 2009 | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | | | | |
| 11. 2010 | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | XXXX | | | |

Example 1

LINE A:

STEADY GROWTH OVER 10 YEARS HAS BEEN ACCOMPANIED BY MODEST RATE INCREASES

CURRENT LOSS RATIO PRICING ASSUMPTIONS

| | |
|------------------|-------|
| Commissions | 20.0% |
| Taxes | 5.0% |
| General Expenses | 15.0% |
| Profit | -2.0% |
| Total | 38.0% |

Amount to pay for loss & loss expense = 62.0% of premium

Example 1: Paid Loss History

| Accident Year | Paid Loss Development Factors (LDF's) | | | | | | | | | |
|------------------|---------------------------------------|---------|---------|---------|---------|---------|---------|----------|-----------|-----------|
| | 12 - 24 | 24 - 36 | 36 - 48 | 48 - 60 | 60 - 72 | 72 - 84 | 84 - 96 | 96 - 108 | 108 - 120 | 120 - ULT |
| 2001 | 1.315 | 1.070 | 1.026 | 1.027 | 1.016 | 1.003 | 1.000 | 1.000 | 1.000 | |
| 2002 | 1.235 | 1.044 | 1.023 | 1.021 | 1.000 | 1.001 | 1.000 | 1.000 | | |
| 2003 | 1.223 | 1.037 | 1.043 | 1.023 | 1.000 | 1.001 | 1.000 | | | |
| 2004 | 1.254 | 1.053 | 1.031 | 1.023 | 1.009 | 1.000 | | | | |
| 2005 | 1.256 | 1.046 | 1.025 | 1.021 | 1.001 | | | | | |
| 2006 | 1.300 | 1.052 | 1.020 | 1.010 | | | | | | |
| 2007 | 1.309 | 1.047 | 1.020 | | | | | | | |
| 2008 | 1.364 | 1.048 | | | | | | | | |
| 2009 | 1.381 | | | | | | | | | |
| All Yr. Avg | 1.293 | 1.050 | 1.027 | 1.021 | 1.005 | 1.001 | 1.000 | 1.000 | 1.000 | |
| Latest 3 Yr Avg | 1.351 | 1.049 | 1.022 | 1.018 | 1.003 | 1.001 | 1.000 | | | |
| X High/Low | 1.290 | 1.048 | 1.025 | 1.022 | 1.003 | 1.001 | | | | |
| Selected | 1.351 | 1.049 | 1.022 | 1.018 | 1.003 | 1.001 | 1.000 | 1.000 | 1.000 | 1.000 |
| Age to Ult. | 1.481 | 1.096 | 1.045 | 1.022 | 1.004 | 1.001 | 1.000 | 1.000 | 1.000 | 1.000 |
| Reserve Factor | 0.325 | 0.087 | 0.043 | 0.022 | 0.004 | 0.001 | - | - | - | - |

Example 1: Incurred Loss History

| Accident Year | Incurred Loss Development Factors (LDF's) | | | | | | | | | |
|------------------|---|---------|---------|---------|---------|---------|---------|----------|-----------|-----------|
| | 12 - 24 | 24 - 36 | 36 - 48 | 48 - 60 | 60 - 72 | 72 - 84 | 84 - 96 | 96 - 108 | 108 - 120 | 120 - ULT |
| 2001 | 1.162 | 1.031 | 1.011 | 1.003 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 2002 | 1.113 | 1.023 | 1.002 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | |
| 2003 | 1.093 | 1.016 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | | | |
| 2004 | 1.123 | 1.027 | 1.000 | 1.000 | 1.000 | 1.000 | | | | |
| 2005 | 1.142 | 1.020 | 1.000 | 1.000 | 1.000 | | | | | |
| 2006 | 1.139 | 1.025 | 1.000 | 1.000 | | | | | | |
| 2007 | 1.151 | 1.027 | 1.004 | | | | | | | |
| 2008 | 1.196 | 1.024 | | | | | | | | |
| 2009 | 1.189 | | | | | | | | | |
| All Yr. Avg | 1.145 | 1.024 | 1.002 | 1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Latest 3 Yr Avg | 1.179 | 1.025 | 1.001 | 1.000 | 1.000 | 1.000 | 1.000 | | | |
| X High/Low | 1.146 | 1.024 | 1.001 | 1.000 | 1.000 | 1.000 | | | | |
| Selected | 1.179 | 1.025 | 1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Age to Ult. | 1.210 | 1.026 | 1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| IBNR Factor | 0.174 | 0.026 | 0.001 | - | - | - | - | - | - | - |

Example 1: Estimates from LDFs

Incurred LDF Method

| Accident Year | Incurred Loss (000) at 12/31/10 | Age to Ult LDF | Indicated Ultimate Loss (000) |
|---------------|---------------------------------|----------------|-------------------------------|
| 2001 | 31,084 | 1.000 | 31,084 |
| 2002 | 35,469 | 1.000 | 35,469 |
| 2003 | 27,978 | 1.000 | 27,978 |
| 2004 | 36,575 | 1.000 | 36,575 |
| 2005 | 33,349 | 1.000 | 33,349 |
| 2006 | 44,365 | 1.000 | 44,365 |
| 2007 | 59,145 | 1.000 | 59,145 |
| 2008 | 65,368 | 1.001 | 65,456 |
| 2009 | 64,978 | 1.026 | 66,692 |
| 2010 | 47,712 | 1.210 | 57,731 |
| Total | 446,021 | | 457,843 |

Paid LDF Method

| Accident Year | Paid Loss (000) at 12/31/10 | Age to Ult LDF | Indicated Ultimate Loss (000) |
|---------------|-----------------------------|----------------|-------------------------------|
| 2001 | 31,084 | 1.000 | 31,084 |
| 2002 | 35,469 | 1.000 | 35,469 |
| 2003 | 27,978 | 1.000 | 27,978 |
| 2004 | 36,575 | 1.000 | 36,575 |
| 2005 | 33,349 | 1.001 | 33,371 |
| 2006 | 43,901 | 1.004 | 44,081 |
| 2007 | 58,103 | 1.022 | 59,399 |
| 2008 | 63,375 | 1.045 | 66,200 |
| 2009 | 62,255 | 1.096 | 68,217 |
| 2010 | 38,798 | 1.481 | 57,448 |
| Total | 430,886 | | 459,821 |

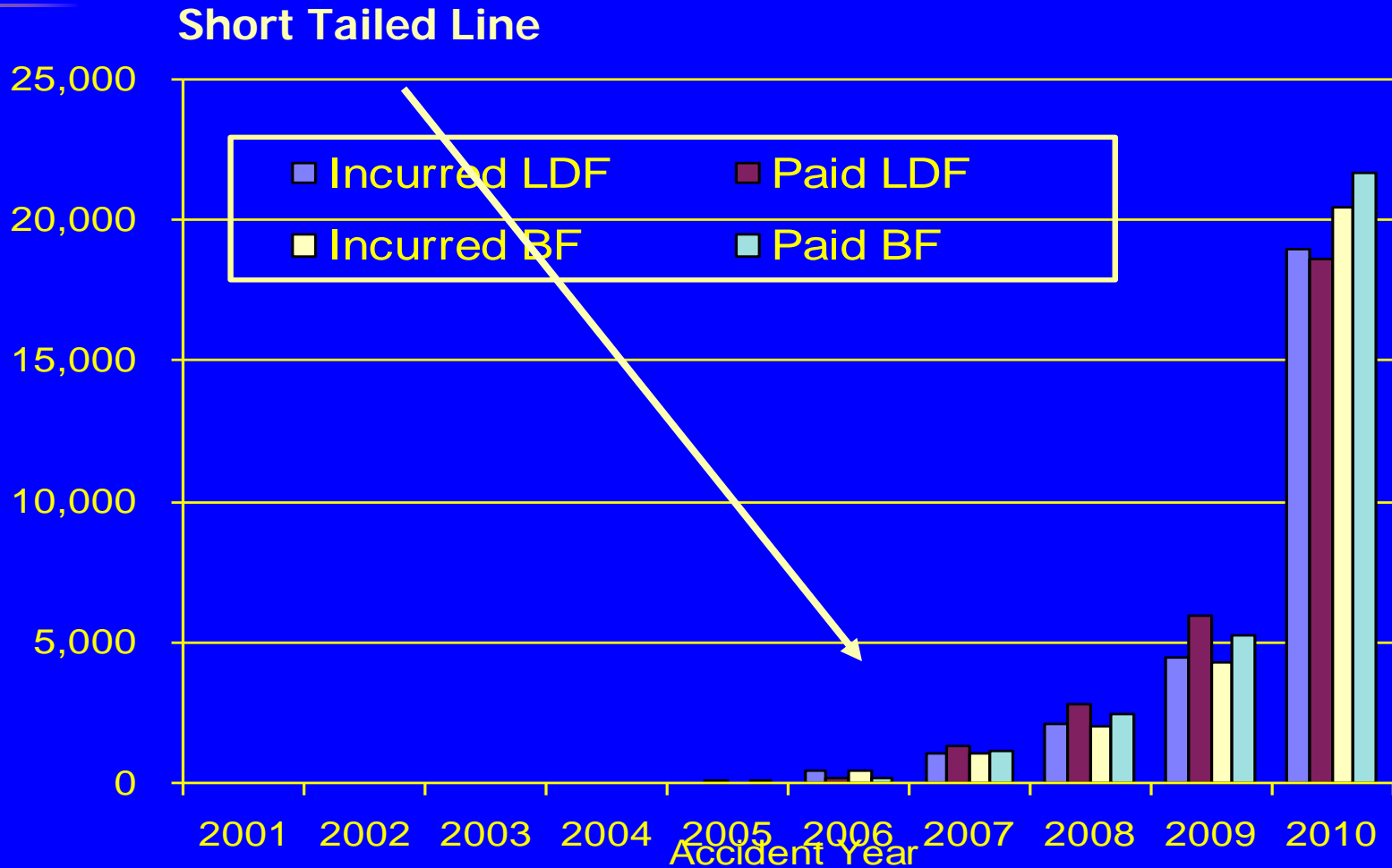
Example 1: Bornheutter-Ferguson Estimates

| Accident Year | Earned Premium | Expected ELR | Expected Losses | IBNR Factor | Incurred BF Method | | | Paid BF Method | | | |
|---------------|----------------|--------------|-----------------|-------------|--------------------|---|---------------------|----------------|---------------------------------------|---------------------|---------|
| | | | | | IBNR | Incurred Indicated Loss (000) at 12/31/10 | Ultimate Loss (000) | Reserve Factor | Paid Indicated Loss (000) at 12/31/10 | Ultimate Loss (000) | |
| 2001 | 47,975 | 62.0% | 29,744 | 0.000 | - | 31,084 | 31,084 | 0.000 | - | 31,084 | 31,084 |
| 2002 | 47,397 | 62.0% | 29,386 | 0.000 | - | 35,469 | 35,469 | 0.000 | - | 35,469 | 35,469 |
| 2003 | 46,609 | 62.0% | 28,897 | 0.000 | - | 27,978 | 27,978 | 0.000 | - | 27,978 | 27,978 |
| 2004 | 50,599 | 62.0% | 31,372 | 0.000 | - | 36,575 | 36,575 | 0.000 | - | 36,575 | 36,575 |
| 2005 | 64,637 | 62.0% | 40,075 | 0.000 | - | 33,349 | 33,349 | 0.001 | 27 | 33,349 | 33,376 |
| 2006 | 69,510 | 62.0% | 43,096 | 0.000 | - | 44,365 | 44,365 | 0.004 | 176 | 43,901 | 44,077 |
| 2007 | 86,505 | 62.0% | 53,633 | 0.000 | - | 59,145 | 59,145 | 0.022 | 1,170 | 58,103 | 59,273 |
| 2008 | 92,564 | 62.0% | 57,390 | 0.001 | 77 | 65,368 | 65,445 | 0.043 | 2,449 | 63,375 | 65,824 |
| 2009 | 97,248 | 62.0% | 60,294 | 0.026 | 1,550 | 64,978 | 66,528 | 0.087 | 5,270 | 62,255 | 67,524 |
| 2010 | 107,538 | 62.0% | 66,673 | 0.174 | 11,571 | 47,712 | 59,283 | 0.325 | 21,645 | 38,798 | 60,443 |
| Total | 710,581 | | 440,560 | | 13,198 | 446,021 | 459,219 | | 30,736 | 430,886 | 461,622 |

Example 1: Ultimates Compared

| Indicated Ultimates | | | | | | | | |
|---------------------|--------------|----------|-------------|---------|-------------------|------------------|---------------|---------------------|
| Accident Year | Incurred LDF | Paid LDF | Incurred BF | Paid BF | Selected Ultimate | Selected Reserve | Selected IBNR | Selected Loss Ratio |
| 2001 | 31,084 | 31,084 | 31,084 | 31,084 | 31,084 | 0 | 0 | 64.8% |
| 2002 | 35,469 | 35,469 | 35,469 | 35,469 | 35,469 | 0 | 0 | 74.8% |
| 2003 | 27,978 | 27,978 | 27,978 | 27,978 | 27,978 | 0 | 0 | 60.0% |
| 2004 | 36,575 | 36,575 | 36,575 | 36,575 | 36,575 | 0 | 0 | 72.3% |
| 2005 | 33,349 | 33,371 | 33,349 | 33,376 | 33,361 | 12 | 12 | 51.6% |
| 2006 | 44,365 | 44,081 | 44,365 | 44,077 | 44,222 | 321 | (143) | 63.6% |
| 2007 | 59,145 | 59,399 | 59,145 | 59,273 | 59,241 | 1,137 | 95 | 68.5% |
| 2008 | 65,456 | 66,200 | 65,445 | 65,824 | 65,731 | 2,356 | 363 | 71.0% |
| 2009 | 66,692 | 68,217 | 66,528 | 67,524 | 67,240 | 4,986 | 2,263 | 69.1% |
| 2010 | 57,731 | 57,448 | 59,283 | 60,443 | 58,727 | 19,928 | 11,015 | 54.6% |
| Total | 457,843 | 459,821 | 459,219 | 461,622 | 459,626 | 28,741 | 13,605 | 64.7% |

Example 1: Reserve Estimates Compared



Example 2

LINE B:

10 YEAR GROWTH REFLECTS EFFORTS TO GAIN
MARKET SHARE

CURRENT LOSS RATIO PRICING ASSUMPTIONS

| | |
|------------------|--------|
| Commissions | 10.00% |
| Taxes | 3.00% |
| General Expenses | 15.00% |
| Profit | -8.00% |
| Total | 20.00% |

Amount to pay for loss & loss expense = 80.0% of premium

Example 2: Paid Loss History

| Accident Year | Paid Loss Development Factors (LDF's) | | | | | | | | | |
|------------------|---------------------------------------|---------|---------|---------|---------|---------|---------|----------|-----------|-----------|
| | 12 - 24 | 24 - 36 | 36 - 48 | 48 - 60 | 60 - 72 | 72 - 84 | 84 - 96 | 96 - 108 | 108 - 120 | 120 - ULT |
| 2001 | 2.169 | 1.372 | 1.160 | 1.111 | 1.041 | 1.053 | 1.053 | 1.055 | 1.024 | |
| 2002 | 2.394 | 1.321 | 1.150 | 1.126 | 1.074 | 1.042 | 1.061 | 1.060 | | |
| 2003 | 1.941 | 1.289 | 1.184 | 1.110 | 1.055 | 1.057 | 1.081 | | | |
| 2004 | 2.343 | 1.224 | 1.052 | 1.042 | 1.058 | 1.042 | | | | |
| 2005 | 2.158 | 1.356 | 1.161 | 1.087 | 1.068 | | | | | |
| 2006 | 2.164 | 1.300 | 1.164 | 1.092 | | | | | | |
| 2007 | 2.219 | 1.343 | 1.171 | | | | | | | |
| 2008 | 2.239 | 1.350 | | | | | | | | |
| 2009 | 2.318 | | | | | | | | | |
| All Yr. Avg | 2.216 | 1.319 | 1.149 | 1.095 | 1.059 | 1.048 | 1.065 | 1.057 | 1.024 | |
| Latest 3 Yr Avg | 2.259 | 1.331 | 1.165 | 1.074 | 1.060 | 1.047 | 1.065 | | | |
| X High/Low | 2.230 | 1.327 | 1.161 | 1.100 | 1.060 | 1.048 | | | | |
| Selected | 2.259 | 1.331 | 1.165 | 1.074 | 1.060 | 1.047 | 1.065 | 1.057 | 1.024 | 1.024 |
| Age to Ult. | 4.933 | 2.184 | 1.640 | 1.407 | 1.311 | 1.237 | 1.181 | 1.109 | 1.049 | 1.024 |
| Reserve Factor | 0.797 | 0.542 | 0.390 | 0.289 | 0.237 | 0.191 | 0.154 | 0.099 | 0.047 | 0.024 |

Example 2: Incurred Loss History

| Accident Year | Incurred Loss Development Factors (LDF's) | | | | | | | | | |
|------------------|---|---------|---------|---------|---------|---------|---------|----------|-----------|-----------|
| | 12 - 24 | 24 - 36 | 36 - 48 | 48 - 60 | 60 - 72 | 72 - 84 | 84 - 96 | 96 - 108 | 108 - 120 | 120 - ULT |
| 2001 | 1.378 | 1.056 | 1.111 | 1.027 | 1.074 | 1.028 | 1.008 | 1.004 | 1.000 | |
| 2002 | 1.214 | 1.159 | 1.056 | 1.103 | 1.026 | 0.981 | 1.047 | 1.021 | | |
| 2003 | 1.288 | 1.155 | 1.102 | 1.047 | 1.038 | 1.048 | 1.030 | | | |
| 2004 | 1.581 | 0.963 | 1.069 | 1.045 | 1.036 | 1.031 | | | | |
| 2005 | 1.808 | 1.170 | 1.049 | 1.069 | 1.039 | | | | | |
| 2006 | 1.451 | 1.122 | 1.098 | 1.060 | | | | | | |
| 2007 | 1.493 | 1.157 | 1.091 | | | | | | | |
| 2008 | 1.445 | 1.149 | | | | | | | | |
| 2009 | 1.416 | | | | | | | | | |
| All Yr. Avg | 1.453 | 1.117 | 1.082 | 1.058 | 1.043 | 1.022 | 1.028 | 1.013 | 1.000 | |
| Latest 3 Yr Avg | 1.451 | 1.143 | 1.079 | 1.058 | 1.038 | 1.020 | 1.028 | | | |
| X High/Low | 1.436 | 1.133 | 1.083 | 1.055 | 1.038 | 1.029 | | | | |
| Selected | 1.451 | 1.143 | 1.079 | 1.058 | 1.038 | 1.020 | 1.028 | 1.013 | 1.000 | 1.000 |
| Age to Ult. | 2.088 | 1.439 | 1.259 | 1.166 | 1.103 | 1.063 | 1.042 | 1.013 | 1.000 | 1.000 |
| IBNR Factor | 0.521 | 0.305 | 0.206 | 0.143 | 0.093 | 0.059 | 0.040 | 0.013 | - | - |

Example 2: Estimates from LDFs

| Incurred LDF Method | | | | Paid LDF Method | | | |
|---------------------|---------------------------------|----------------|-------------------------------|-----------------|-----------------------------|----------------|-------------------------------|
| Accident Year | Incurred Loss (000) at 12/31/10 | Age to Ult LDF | Indicated Ultimate Loss (000) | Accident Year | Paid Loss (000) at 12/31/10 | Age to Ult LDF | Indicated Ultimate Loss (000) |
| 2001 | 25,413 | 1.000 | 25,413 | 2001 | 24,872 | 1.024 | 25,478 |
| 2002 | 24,896 | 1.000 | 24,896 | 2002 | 23,598 | 1.049 | 24,762 |
| 2003 | 30,119 | 1.013 | 30,507 | 2003 | 26,983 | 1.109 | 29,933 |
| 2004 | 28,880 | 1.042 | 30,084 | 2004 | 25,194 | 1.181 | 29,765 |
| 2005 | 40,778 | 1.063 | 43,330 | 2005 | 34,363 | 1.237 | 42,501 |
| 2006 | 49,494 | 1.103 | 54,577 | 2006 | 41,112 | 1.311 | 53,899 |
| 2007 | 63,444 | 1.166 | 74,000 | 2007 | 51,060 | 1.407 | 71,863 |
| 2008 | 68,988 | 1.259 | 86,841 | 2008 | 51,341 | 1.640 | 84,216 |
| 2009 | 53,747 | 1.439 | 77,326 | 2009 | 37,346 | 2.184 | 81,562 |
| 2010 | 32,638 | 2.088 | 68,151 | 2010 | 15,885 | 4.933 | 78,353 |
| Total | 418,396 | | 515,125 | Total | 331,755 | | 522,332 |

Example 2: Bornheutter-Ferguson Estimates

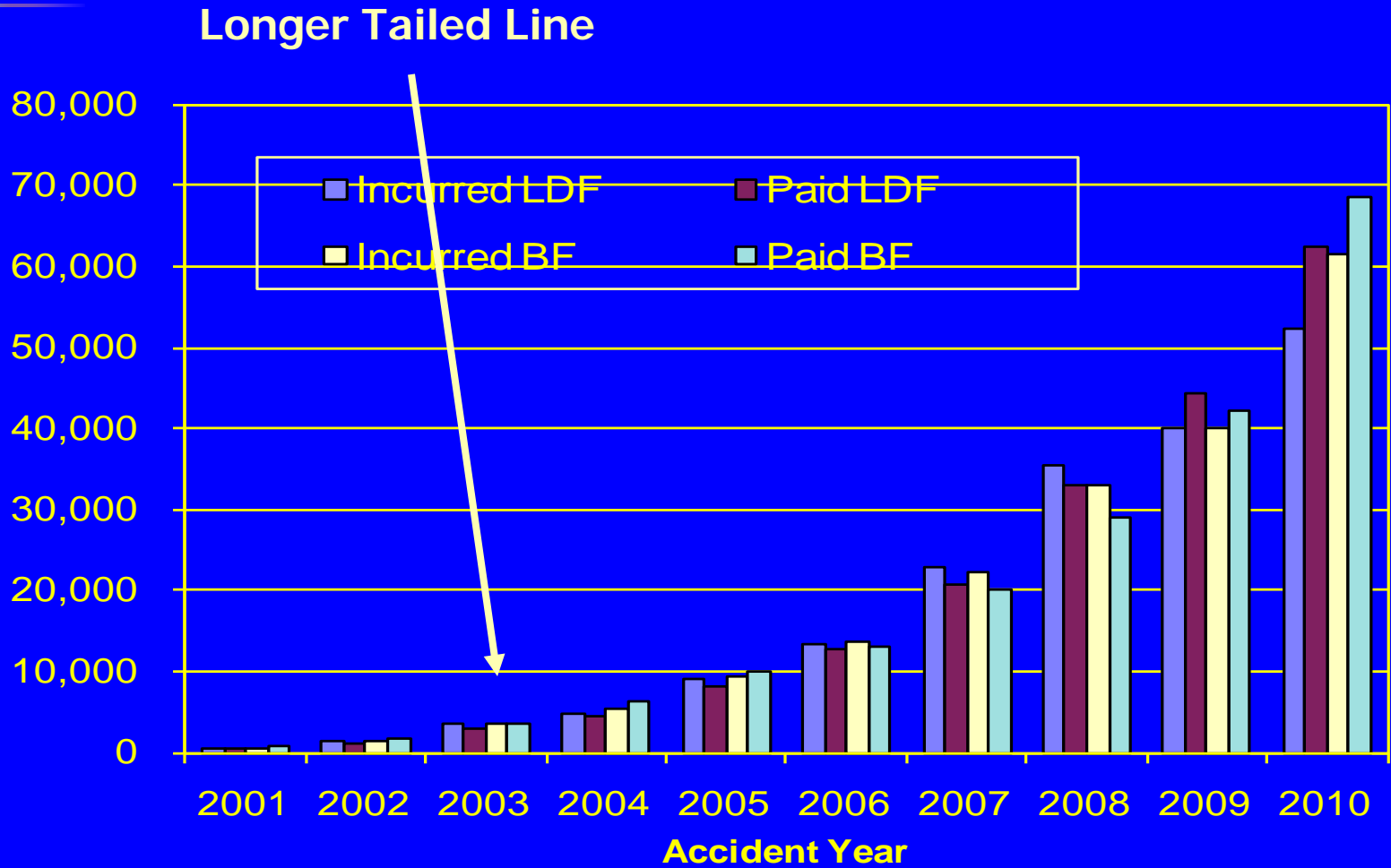
| Accident Year | Earned Premium | ELR | Expected Losses | Incurred BF Method | | | | Paid BF Method | | | |
|---------------|----------------|-------|-----------------|--------------------|----------------|---------------------------------|-------------------------------|----------------|-------------------|-----------------------------|-------------------------------|
| | | | | IBNR Factor | Indicated IBNR | Incurred Loss (000) at 12/31/10 | Indicated Ultimate Loss (000) | Reserve Factor | Indicated Reserve | Paid Loss (000) at 12/31/10 | Indicated Ultimate Loss (000) |
| 2001 | 47,975 | 80.0% | 38,380 | 0.000 | - | 25,413 | 25,413 | 0.024 | 913 | 24,872 | 25,785 |
| 2002 | 47,397 | 80.0% | 37,917 | 0.000 | - | 24,896 | 24,896 | 0.047 | 1,782 | 23,598 | 25,380 |
| 2003 | 46,609 | 80.0% | 37,287 | 0.013 | 473.90 | 30,119 | 30,593 | 0.099 | 3,675 | 26,983 | 30,658 |
| 2004 | 50,599 | 80.0% | 40,479 | 0.040 | 1,620.34 | 28,880 | 30,500 | 0.154 | 6,217 | 25,194 | 31,411 |
| 2005 | 64,637 | 80.0% | 51,710 | 0.059 | 3,045.66 | 40,778 | 43,824 | 0.191 | 9,900 | 34,363 | 44,264 |
| 2006 | 69,510 | 80.0% | 55,608 | 0.093 | 5,179.23 | 49,494 | 54,673 | 0.237 | 13,192 | 41,112 | 54,304 |
| 2007 | 86,505 | 80.0% | 69,204 | 0.143 | 9,872.58 | 63,444 | 73,316 | 0.289 | 20,034 | 51,060 | 71,094 |
| 2008 | 92,564 | 80.0% | 74,051 | 0.206 | 15,223.29 | 68,988 | 84,212 | 0.390 | 28,907 | 51,341 | 80,248 |
| 2009 | 97,248 | 80.0% | 77,798 | 0.305 | 23,722.77 | 53,747 | 77,470 | 0.542 | 42,175 | 37,346 | 79,521 |
| 2010 | 107,538 | 80.0% | 86,030 | 0.521 | 44,830.29 | 32,638 | 77,468 | 0.797 | 68,589 | 15,885 | 84,474 |
| Total | 710,581 | | 568,465 | | 103,968.07 | 418,396 | 522,364 | | 195,383 | 331,755 | 527,138 |

Example 2: Ultimates Compared

Indicated Ultimates

| Accident Year | Incurred LDF | Paid LDF | Incurred BF | Paid BF | Selected Ultimate | Selected Reserve | Selected IBNR | Selected Loss Ratio |
|---------------|--------------|----------|-------------|---------|-------------------|------------------|---------------|---------------------|
| 2001 | 25,413 | 25,478 | 25,413 | 25,785 | 25,522 | 650 | 109 | 53.2% |
| 2002 | 24,896 | 24,762 | 24,896 | 25,380 | 24,983 | 1,385 | 87 | 52.7% |
| 2003 | 30,507 | 29,933 | 30,593 | 30,658 | 30,423 | 3,440 | 304 | 65.3% |
| 2004 | 30,084 | 29,765 | 30,500 | 31,411 | 30,440 | 5,246 | 1,560 | 60.2% |
| 2005 | 43,330 | 42,501 | 43,824 | 44,264 | 43,480 | 9,116 | 2,701 | 67.3% |
| 2006 | 54,577 | 53,899 | 54,673 | 54,304 | 54,363 | 13,251 | 4,870 | 78.2% |
| 2007 | 74,000 | 71,863 | 73,316 | 71,094 | 72,568 | 21,508 | 9,125 | 83.9% |
| 2008 | 86,841 | 84,216 | 84,212 | 80,248 | 83,879 | 32,538 | 14,891 | 90.6% |
| 2009 | 77,326 | 81,562 | 77,470 | 79,521 | 78,970 | 41,623 | 25,222 | 81.2% |
| 2010 | 68,151 | 78,353 | 77,468 | 84,474 | 77,111 | 61,227 | 44,474 | 71.7% |
| Total | 515,125 | 522,332 | 522,364 | 527,138 | 521,740 | 189,985 | 103,343 | 73.4% |

Example 2: Reserve Estimates Compared



Example 3

LINE C:

A new assignment. Business was acquired in an acquisition. Little information available.

CURRENT LOSS RATIO PRICING ASSUMPTIONS

| | |
|------------------|--------|
| Commissions | 18.00% |
| Taxes | 3.00% |
| General Expenses | 14.00% |
| Profit | -5.00% |
| Total | 30.00% |

Amount to pay for loss & loss expense = 70.0% of premium

Example 3: Paid Loss History

| Accident Year | Paid Loss Development Factors (LDF's) | | | | | | | | | |
|------------------|---------------------------------------|---------|---------|---------|---------|---------|---------|----------|-----------|-----------|
| | 12 - 24 | 24 - 36 | 36 - 48 | 48 - 60 | 60 - 72 | 72 - 84 | 84 - 96 | 96 - 108 | 108 - 120 | 120 - ULT |
| 2001 | 2.169 | 1.372 | 1.160 | 1.111 | 1.041 | 1.053 | 1.053 | 1.068 | 1.044 | |
| 2002 | 2.394 | 1.321 | 1.150 | 1.126 | 1.074 | 1.042 | 1.061 | 1.070 | | |
| 2003 | 1.941 | 1.289 | 1.184 | 1.110 | 1.055 | 1.057 | 1.077 | | | |
| 2004 | 2.343 | 1.224 | 1.052 | 1.042 | 1.050 | 1.046 | | | | |
| 2005 | 2.158 | 1.356 | 1.161 | 1.087 | 1.068 | | | | | |
| 2006 | 2.164 | 1.300 | 1.164 | 1.065 | | | | | | |
| 2007 | 2.219 | 1.343 | 1.141 | | | | | | | |
| 2008 | 2.239 | 1.264 | | | | | | | | |
| 2009 | 2.187 | | | | | | | | | |
| All Yr. Avg | 2.202 | 1.309 | 1.145 | 1.090 | 1.058 | 1.049 | 1.064 | 1.069 | 1.044 | |
| Latest 3 Yr Avg | 2.215 | 1.302 | 1.156 | 1.065 | 1.057 | 1.048 | 1.064 | | | |
| X High/Low | 2.211 | 1.312 | 1.155 | 1.093 | 1.057 | 1.049 | | | | |
| Selected | 2.215 | 1.302 | 1.156 | 1.065 | 1.057 | 1.048 | 1.064 | 1.069 | 1.044 | 1.044 |
| Age to Ult. | 4.873 | 2.200 | 1.689 | 1.462 | 1.373 | 1.298 | 1.239 | 1.165 | 1.090 | 1.044 |
| Reserve Factor | 0.795 | 0.545 | 0.408 | 0.316 | 0.272 | 0.230 | 0.193 | 0.141 | 0.083 | 0.042 |

Example 3: Incurred Loss History

| Accident Year | Incurred Loss Development Factors (LDF's) | | | | | | | | | |
|------------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 12 - 24 | 24 - 36 | 36 - 48 | 48 - 60 | 60 - 72 | 72 - 84 | 84 - 96 | 96 - 108 | 108 - 120 | 120 - ULT |
| 2001 | 1.378 | 1.056 | 1.111 | 1.027 | 1.060 | 1.028 | 1.062 | 1.007 | 1.015 | |
| 2002 | 1.214 | 1.159 | 1.056 | 1.079 | 1.055 | 1.065 | 1.015 | 1.016 | | |
| 2003 | 1.288 | 1.160 | 1.072 | 1.047 | 1.086 | 1.043 | 1.022 | | | |
| 2004 | 1.455 | 1.059 | 1.043 | 1.081 | 1.032 | 1.023 | | | | |
| 2005 | 1.558 | 1.099 | 1.175 | 1.058 | 1.033 | | | | | |
| 2006 | 1.509 | 1.206 | 1.087 | 1.054 | | | | | | |
| 2007 | 1.598 | 1.134 | 1.080 | | | | | | | |
| 2008 | 1.400 | 1.131 | | | | | | | | |
| 2009 | 1.401 | | | | | | | | | |
| All Yr. Avg | 1.422 | 1.126 | 1.089 | 1.058 | 1.053 | 1.040 | 1.033 | 1.012 | 1.015 | |
| Latest 3 Yr Avg | 1.466 | 1.157 | 1.114 | 1.064 | 1.050 | 1.044 | 1.033 | | | |
| X High/Low | 1.427 | 1.124 | 1.081 | 1.059 | 1.049 | 1.035 | | | | |
| Selected | 1.466 | 1.157 | 1.114 | 1.064 | 1.050 | 1.044 | 1.033 | 1.012 | 1.015 | 1.015 |
| Age to Ult. | 2.374 | 1.619 | 1.399 | 1.255 | 1.180 | 1.123 | 1.076 | 1.042 | 1.030 | 1.015 |
| IBNR Factor | 0.579 | 0.382 | 0.285 | 0.204 | 0.152 | 0.110 | 0.071 | 0.040 | 0.029 | 0.015 |

Example 3: Estimates from LDFs

Incurred LDF Method

| Accident Year | Incurred Loss (000) at 12/31/10 | Age to Ult LDF | Indicated Ultimate Loss (000) |
|---------------|---------------------------------|----------------|-------------------------------|
| 2001 | 25,808 | 1.015 | 26,188 |
| 2002 | 25,148 | 1.030 | 25,894 |
| 2003 | 29,202 | 1.042 | 30,423 |
| 2004 | 28,013 | 1.076 | 30,149 |
| 2005 | 40,011 | 1.123 | 44,946 |
| 2006 | 48,858 | 1.180 | 57,635 |
| 2007 | 63,018 | 1.255 | 79,119 |
| 2008 | 68,770 | 1.399 | 96,199 |
| 2009 | 56,263 | 1.619 | 91,071 |
| 2010 | 39,888 | 2.374 | 94,682 |
| Total | 424,979 | | 576,306 |

Paid LDF Method

| Accident Year | Paid Loss (000) at 12/31/10 | Age to Ult LDF | Indicated Ultimate Loss (000) |
|---------------|-----------------------------|----------------|-------------------------------|
| 2001 | 24,636 | 1.044 | 25,720 |
| 2002 | 22,865 | 1.090 | 24,921 |
| 2003 | 25,807 | 1.165 | 30,060 |
| 2004 | 24,090 | 1.239 | 29,846 |
| 2005 | 32,989 | 1.298 | 42,835 |
| 2006 | 38,508 | 1.373 | 52,870 |
| 2007 | 47,770 | 1.462 | 69,830 |
| 2008 | 46,119 | 1.689 | 77,904 |
| 2009 | 33,837 | 2.200 | 74,443 |
| 2010 | 14,962 | 4.873 | 72,914 |
| Total | 311,582 | | 501,342 |

Example 3: Bornheutter-Ferguson Estimates

| Accident Year | Earned Premium | Expected ELR | Expected Losses | Incurred BF Method | | | | Paid BF Method | | | |
|---------------|----------------|--------------|-----------------|--------------------|----------------|---------------------------------|-------------------------------|----------------|-------------------|-----------------------------|-------------------------------|
| | | | | IBNR Factor | Indicated IBNR | Incurred Loss (000) at 12/31/10 | Indicated Ultimate Loss (000) | Reserve Factor | Indicated Reserve | Paid Loss (000) at 12/31/10 | Indicated Ultimate Loss (000) |
| 2001 | 47,975 | 70.0% | 33,582 | 0.015 | 487 | 25,808 | 26,295 | 0.042 | 1,415 | 24,636 | 26,051 |
| 2002 | 47,397 | 70.0% | 33,178 | 0.029 | 956 | 25,148 | 26,104 | 0.083 | 2,737 | 22,865 | 25,603 |
| 2003 | 46,609 | 70.0% | 32,626 | 0.040 | 1,309 | 29,202 | 30,511 | 0.141 | 4,615 | 25,807 | 30,423 |
| 2004 | 50,599 | 70.0% | 35,419 | 0.071 | 2,510 | 28,013 | 30,523 | 0.193 | 6,831 | 24,090 | 30,921 |
| 2005 | 64,637 | 70.0% | 45,246 | 0.110 | 4,968 | 40,011 | 44,979 | 0.230 | 10,400 | 32,989 | 43,389 |
| 2006 | 69,510 | 70.0% | 48,657 | 0.152 | 7,410 | 48,858 | 56,268 | 0.272 | 13,218 | 38,508 | 51,726 |
| 2007 | 86,505 | 70.0% | 60,554 | 0.204 | 12,323 | 63,018 | 75,341 | 0.316 | 19,130 | 47,770 | 66,899 |
| 2008 | 92,564 | 70.0% | 64,795 | 0.285 | 18,475 | 68,770 | 87,245 | 0.408 | 26,436 | 46,119 | 72,555 |
| 2009 | 97,248 | 70.0% | 68,073 | 0.382 | 26,018 | 56,263 | 82,281 | 0.545 | 37,132 | 33,837 | 70,969 |
| 2010 | 107,538 | 70.0% | 75,276 | 0.579 | 43,563 | 39,888 | 83,452 | 0.795 | 59,830 | 14,962 | 74,792 |
| Total | 710,581 | | 497,407 | | 118,019 | 424,979 | 542,998 | | 181,744 | 311,582 | 493,326 |

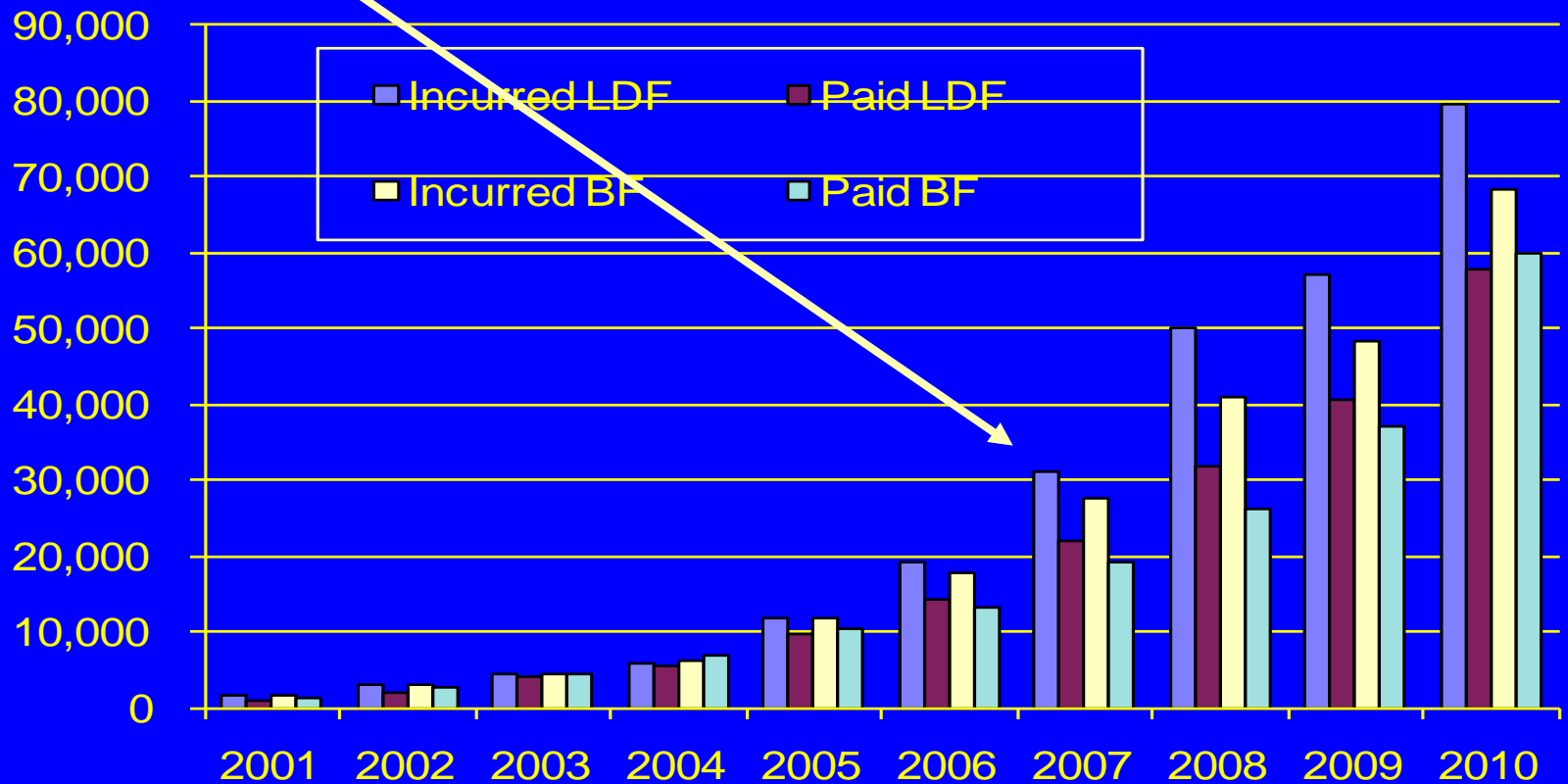
Example 3: Ultimates Compared

Indicated Ultimates

| Accident Year | Incurred LDF | Paid LDF | Incurred BF | Paid BF | Selected Ultimate | Selected Reserve | Selected IBNR | Selected Loss Ratio |
|---------------|--------------|----------|-------------|---------|-------------------|------------------|---------------|---------------------|
| 2001 | 26,188 | 25,720 | 26,295 | 26,051 | 26,063 | 1,427 | 256 | 54.3% |
| 2002 | 25,894 | 24,921 | 26,104 | 25,603 | 25,630 | 2,765 | 482 | 54.1% |
| 2003 | 30,423 | 30,060 | 30,511 | 30,423 | 30,354 | 4,547 | 1,152 | 65.1% |
| 2004 | 30,149 | 29,846 | 30,523 | 30,921 | 30,360 | 6,270 | 2,347 | 60.0% |
| 2005 | 44,946 | 42,835 | 44,979 | 43,389 | 44,037 | 11,049 | 4,026 | 68.1% |
| 2006 | 57,635 | 52,870 | 56,268 | 51,726 | 54,625 | 16,117 | 5,767 | 78.6% |
| 2007 | 79,119 | 69,830 | 75,341 | 66,899 | 72,797 | 25,027 | 9,779 | 84.2% |
| 2008 | 96,199 | 77,904 | 87,245 | 72,555 | 83,475 | 37,356 | 14,706 | 90.2% |
| 2009 | 91,071 | 74,443 | 82,281 | 70,969 | 79,691 | 45,854 | 23,428 | 81.9% |
| 2010 | 94,682 | 72,914 | 83,452 | 74,792 | 81,460 | 66,499 | 41,572 | 75.8% |
| Total | 576,306 | 501,342 | 542,998 | 493,326 | 528,493 | 216,911 | 103,514 | 74.4% |

Example 3: Reserve Estimates Compared

What's happening here?



Session III Review

- Schedule P - A Source of Data
- Estimating Reserves
 - Dealing with Uncertainty
 - A Range of Estimates can be Reasonable

Now it's time!

You Set the Reserves