



# Basic Track III

2013 CLRS

September 15-17, 2013

Boston, Massachusetts

# 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
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### Example : Reported Incurred Losses are Twice as High as Expected

ELR	\$12,000 Reported	\$4,000 IBNR
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Bornhuetter-Ferguson	\$12,000 Reported	\$10,000 IBNR
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Incurred Development	\$12,000 Reported	\$20,000 IBNR
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### Example : Reported Incurred Losses are Half of Expected

ELR	\$3,000 Reported	\$13,000 IBNR
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Bornhuetter-Ferguson	\$3,000 Reported	\$10,000 IBNR
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Incurred Development	\$3,000 Reported	\$5,000 IBNR
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# 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

Claims = Closed or Outstanding (no IBNR)

One and two year development has different meaning than actuarial development

Incurred 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 = Sum over 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 2

## Incurred Net Loss + DCC

SCHEDULE P - PART 2 - SUMMARY  
(\$000 omitted)

Years in Which Losses Were Incurred	INCURRED NET LOSSES + DEFENSE & COST CONTAINMENT EXPENSES REPORTED AT YEAR END (\$000 OMITTED)										Development	
	1 2003	2 2004	3 2005	4 2006	5 2007	6 2008	7 2009	8 2010	9 2011	10 2012	11 One Year	12 Two Year
1. Prior												
2. 2003												
3. 2004	XXXX											
4. 2005	XXXX	XXXX										
5. 2006	XXXX	XXXX	XXXX									
6. 2007	XXXX	XXXX	XXXX	XXXX								
7. 2008	XXXX	XXXX	XXXX	XXXX	XXXX							
8. 2009	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX						
9. 2010	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX					
10. 2011	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX				XXXX
11. 2012	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX	XXXX
											12. Totals	

# 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 2003	2 2004	3 2005	4 2006	5 2007	6 2008	7 2009	8 2010	9 2011	10 2012		
1. Prior												
2. 2003												
3. 2004	XXXX											
4. 2005	XXXX	XXXX										
5. 2006	XXXX	XXXX	XXXX									
6. 2007	XXXX	XXXX	XXXX	XXXX								
7. 2008	XXXX	XXXX	XXXX	XXXX	XXXX							
8. 2009	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX						
9. 2010	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX					
10. 2011	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX				
11. 2012	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
2003	1.315	1.070	1.026	1.027	1.016	1.003	1.000	1.000	1.000	
2004	1.235	1.044	1.023	1.021	1.000	1.001	1.000	1.000		
2005	1.223	1.037	1.043	1.023	1.000	1.001	1.000			
2006	1.254	1.053	1.031	1.023	1.009	1.000				
2007	1.256	1.046	1.025	1.021	1.001					
2008	1.300	1.052	1.020	1.010						
2009	1.309	1.047	1.020							
2010	1.364	1.048								
2011	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
2003	1.162	1.031	1.011	1.003	1.000	1.000	1.000	1.000	1.000	1.000
2004	1.113	1.023	1.002	1.000	1.000	1.000	1.000	1.000	1.000	
2005	1.093	1.016	1.000	1.000	1.000	1.000	1.000	1.000		
2006	1.123	1.027	1.000	1.000	1.000	1.000				
2007	1.142	1.020	1.000	1.000	1.000					
2008	1.139	1.025	1.000	1.000						
2009	1.151	1.027	1.004							
2010	1.196	1.024								
2011	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			
XHigh/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 12/31/12	Age to Ult LDF	Indicated Ultimate Loss (000)
2003	31,084	1.000	31,084
2004	35,469	1.000	35,469
2005	27,978	1.000	27,978
2006	36,575	1.000	36,575
2007	33,349	1.000	33,349
2008	44,365	1.000	44,365
2009	59,145	1.000	59,145
2010	65,368	1.001	65,456
2011	64,978	1.026	66,692
2012	47,712	1.210	57,731
Total	446,021		457,843

## Paid LDF Method

Accident Year	Paid Loss (000) at 12/31/12	Age to Ult LDF	Indicated Ultimate Loss (000)
2003	31,084	1.000	31,084
2004	35,469	1.000	35,469
2005	27,978	1.000	27,978
2006	36,575	1.000	36,575
2007	33,349	1.001	33,371
2008	43,901	1.004	44,081
2009	58,103	1.022	59,399
2010	63,375	1.045	66,200
2011	62,255	1.096	68,217
2012	38,798	1.481	57,448
Total	430,886		459,821

# Example 1: Bornhuetter-Ferguson Estimates

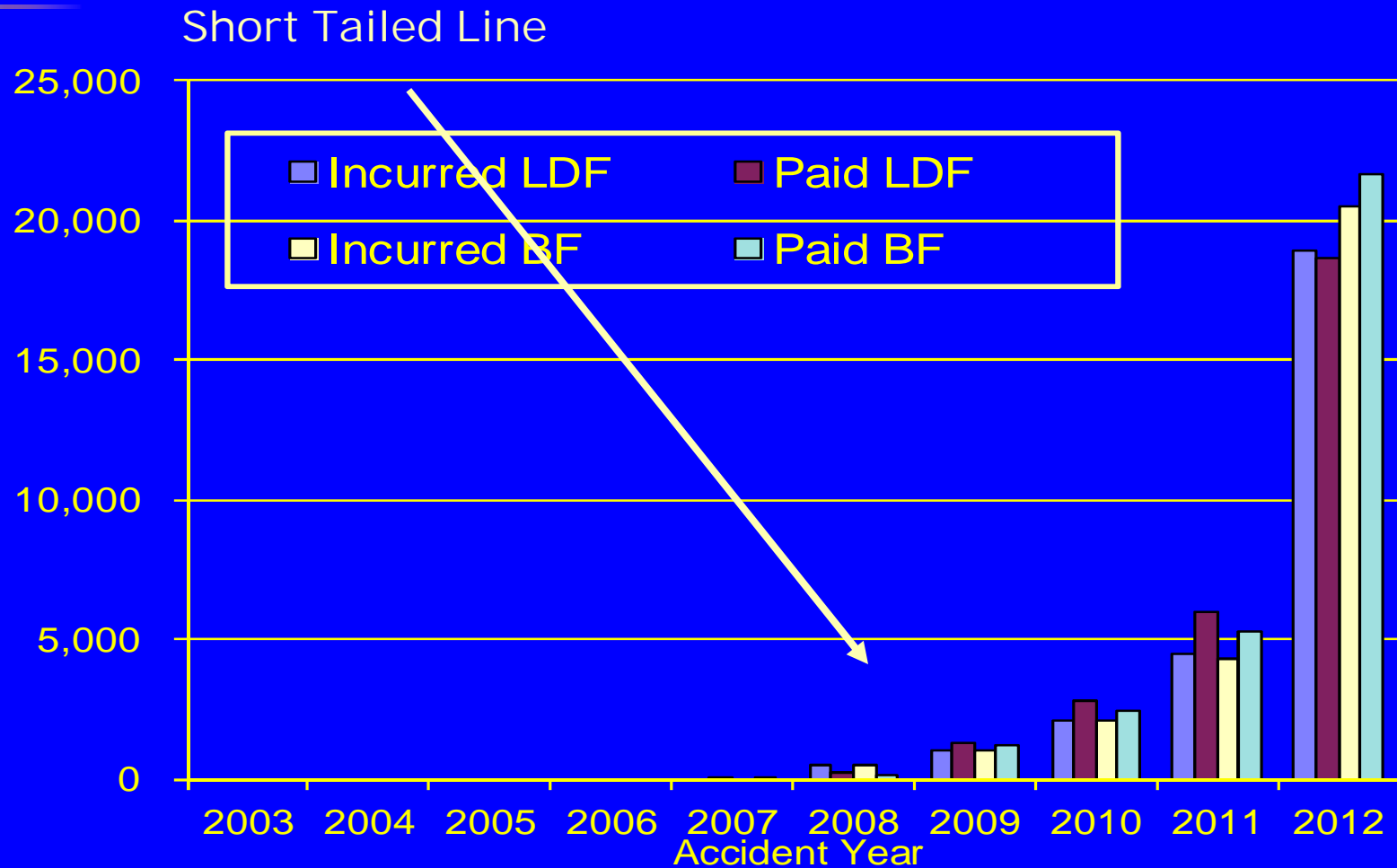
Accident Year	Earned Premium	ELR	Expected Losses	Incurred BF Method			Paid BF Method				
				IBNR Factor	Incurred Indicated Loss (000) at 12/31/12	Indicated Ultimate Loss (000)	Reserve Factor	Paid Indicated Loss (000) at 12/31/12	Indicated Ultimate Loss (000)		
2003	47,975	62.0%	29,744	0.000	-	31,084	31,084	0.000	-	31,084	31,084
2004	47,397	62.0%	29,386	0.000	-	35,469	35,469	0.000	-	35,469	35,469
2005	46,609	62.0%	28,897	0.000	-	27,978	27,978	0.000	-	27,978	27,978
2006	50,599	62.0%	31,372	0.000	-	36,575	36,575	0.000	-	36,575	36,575
2007	64,637	62.0%	40,075	0.000	-	33,349	33,349	0.001	27	33,349	33,376
2008	69,510	62.0%	43,096	0.000	-	44,365	44,365	0.004	176	43,901	44,077
2009	86,505	62.0%	53,633	0.000	-	59,145	59,145	0.022	1,170	58,103	59,273
2010	92,564	62.0%	57,390	0.001	77	65,368	65,445	0.043	2,449	63,375	65,824
2011	97,248	62.0%	60,294	0.026	1,550	64,978	66,528	0.087	5,270	62,255	67,524
2012	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
2003	31,084	31,084	31,084	31,084	31,084	0	0	64.8%
2004	35,469	35,469	35,469	35,469	35,469	0	0	74.8%
2005	27,978	27,978	27,978	27,978	27,978	0	0	60.0%
2006	36,575	36,575	36,575	36,575	36,575	0	0	72.3%
2007	33,349	33,371	33,349	33,376	33,349	0	0	51.6%
2008	44,365	44,081	44,365	44,077	44,365	464	0	63.8%
2009	59,145	59,399	59,145	59,273	59,241	1,137	95	68.5%
2010	65,456	66,200	65,445	65,824	65,731	2,356	363	71.0%
2011	66,692	68,217	66,528	67,524	67,240	4,986	2,263	69.1%
2012	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	459,757	28,871	13,736	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
2003	2.169	1.372	1.160	1.111	1.041	1.053	1.053	1.055	1.024	
2004	2.394	1.321	1.150	1.126	1.074	1.042	1.061	1.060		
2005	1.941	1.289	1.184	1.110	1.055	1.057	1.081			
2006	2.343	1.224	1.052	1.042	1.058	1.042				
2007	2.158	1.356	1.161	1.087	1.068					
2008	2.164	1.300	1.164	1.092						
2009	2.219	1.343	1.171							
2010	2.239	1.350								
2011	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
2003	1.378	1.056	1.111	1.027	1.074	1.028	1.008	1.004	1.000	
2004	1.214	1.159	1.056	1.103	1.026	0.981	1.047	1.021		
2005	1.288	1.155	1.102	1.047	1.038	1.048	1.030			
2006	1.581	0.963	1.069	1.045	1.036	1.031				
2007	1.808	1.170	1.049	1.069	1.039					
2008	1.451	1.122	1.098	1.060						
2009	1.493	1.157	1.091							
2010	1.445	1.149								
2011	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

Accident Year	Incurred Loss (000) at 12/31/12	Age to Ult LDF	Indicated Ultimate Loss (000)
2003	25,413	1.000	25,413
2004	24,896	1.000	24,896
2005	30,119	1.013	30,507
2006	28,880	1.042	30,084
2007	40,778	1.063	43,330
2008	49,494	1.103	54,577
2009	63,444	1.166	74,000
2010	68,988	1.259	86,841
2011	53,747	1.439	77,326
2012	32,638	2.088	68,151
Total	418,396		515,125

### Paid LDF Method

Accident Year	Paid Loss (000) at 12/31/12	Age to Ult LDF	Indicated Ultimate Loss (000)
2003	24,872	1.024	25,478
2004	23,598	1.049	24,762
2005	26,983	1.109	29,933
2006	25,194	1.181	29,765
2007	34,363	1.237	42,501
2008	41,112	1.311	53,899
2009	51,060	1.407	71,863
2010	51,341	1.640	84,216
2011	37,346	2.184	81,562
2012	15,885	4.933	78,353
Total	331,755		522,332

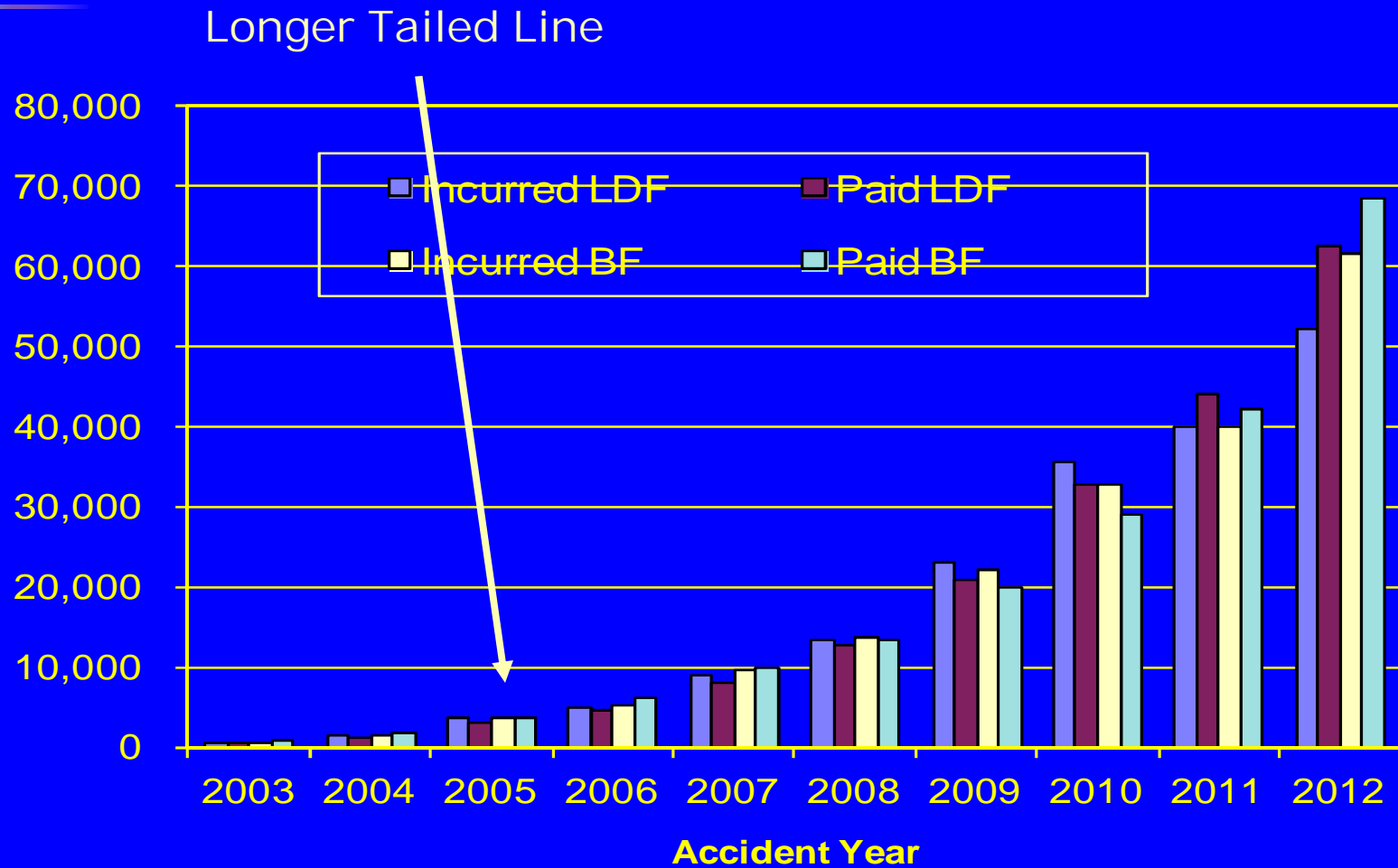
## Example 2: Bornhuetter-Ferguson Estimates

Accident Year	Earned Premium	ELR	Expected Losses	Incurred BF Method				Paid BF Method			
				IBNR Factor	Indicated IBNR	Incurred Loss (000) at 12/31/12	Indicated Ultimate Loss (000)	Reserve Factor	Indicated Reserve	Paid Loss (000) at 12/31/12	Indicated Ultimate Loss (000)
2003	47,975	80.0%	38,380	0.000	-	25,413	25,413	0.024	913	24,872	25,785
2004	47,397	80.0%	37,917	0.000	-	24,896	24,896	0.047	1,782	23,598	25,380
2005	46,609	80.0%	37,287	0.013	473.90	30,119	30,593	0.099	3,675	26,983	30,658
2006	50,599	80.0%	40,479	0.040	1,620.34	28,880	30,500	0.154	6,217	25,194	31,411
2007	64,637	80.0%	51,710	0.059	3,045.66	40,778	43,824	0.191	9,900	34,363	44,264
2008	69,510	80.0%	55,608	0.093	5,179.23	49,494	54,673	0.237	13,192	41,112	54,304
2009	86,505	80.0%	69,204	0.143	9,872.58	63,444	73,316	0.289	20,034	51,060	71,094
2010	92,564	80.0%	74,051	0.206	15,223.29	68,988	84,212	0.390	28,907	51,341	80,248
2011	97,248	80.0%	77,798	0.305	23,722.77	53,747	77,470	0.542	42,175	37,346	79,521
2012	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	
2003	25,413	25,478	25,413	25,785	25,522	650	109	53.2%	
2004	24,896	24,762	24,896	25,380	24,983	1,385	87	52.7%	
2005	30,507	29,933	30,593	30,658	30,423	3,440	304	65.3%	
2006	30,084	29,765	30,500	31,411	30,440	5,246	1,560	60.2%	
2007	43,330	42,501	43,824	44,264	43,480	9,116	2,701	67.3%	
2008	54,577	53,899	54,673	54,304	54,363	13,251	4,870	78.2%	
2009	74,000	71,863	73,316	71,094	72,568	21,508	9,125	83.9%	
2010	86,841	84,216	84,212	80,248	83,879	32,538	14,891	90.6%	
2011	77,326	81,562	77,470	79,521	78,970	41,623	25,222	81.2%	
2012	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
2003	2.169	1.372	1.160	1.111	1.041	1.053	1.053	1.068	1.044	
2004	2.394	1.321	1.150	1.126	1.074	1.042	1.061	1.070		
2005	1.941	1.289	1.184	1.110	1.055	1.057	1.077			
2006	2.343	1.224	1.052	1.042	1.050	1.046				
2007	2.158	1.356	1.161	1.087	1.068					
2008	2.164	1.300	1.164	1.065						
2009	2.219	1.343	1.141							
2010	2.239	1.264								
2011	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
2003	1.378	1.056	1.111	1.027	1.060	1.028	1.062	1.007	1.015	
2004	1.214	1.159	1.056	1.079	1.055	1.065	1.015	1.016		
2005	1.288	1.160	1.072	1.047	1.086	1.043	1.022			
2006	1.455	1.059	1.043	1.081	1.032	1.023				
2007	1.558	1.099	1.175	1.058	1.033					
2008	1.509	1.206	1.087	1.054						
2009	1.598	1.134	1.080							
2010	1.400	1.131								
2011	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				
<b>Selected</b>	<b>1.466</b>	<b>1.157</b>	<b>1.114</b>	<b>1.064</b>	<b>1.050</b>	<b>1.044</b>	<b>1.033</b>	<b>1.012</b>	<b>1.015</b>	<b>1.015</b>
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 12/31/12	Age to Ult LDF	Indicated Ultimate Loss (000)
2003	25,808	1.015	26,188
2004	25,148	1.030	25,894
2005	29,202	1.042	30,423
2006	28,013	1.076	30,149
2007	40,011	1.123	44,946
2008	48,858	1.180	57,635
2009	63,018	1.255	79,119
2010	68,770	1.399	96,199
2011	56,263	1.619	91,071
2012	39,888	2.374	94,682
Total	424,979		576,306

### Paid LDF Method

Accident Year	Paid Loss (000) at 12/31/12	Age to Ult LDF	Indicated Ultimate Loss (000)
2003	24,636	1.044	25,720
2004	22,865	1.090	24,921
2005	25,807	1.165	30,060
2006	24,090	1.239	29,846
2007	32,989	1.298	42,835
2008	38,508	1.373	52,870
2009	47,770	1.462	69,830
2010	46,119	1.689	77,904
2011	33,837	2.200	74,443
2012	14,962	4.873	72,914
Total	311,582		501,342

# Example 3: Bornhuetter-Ferguson Estimates

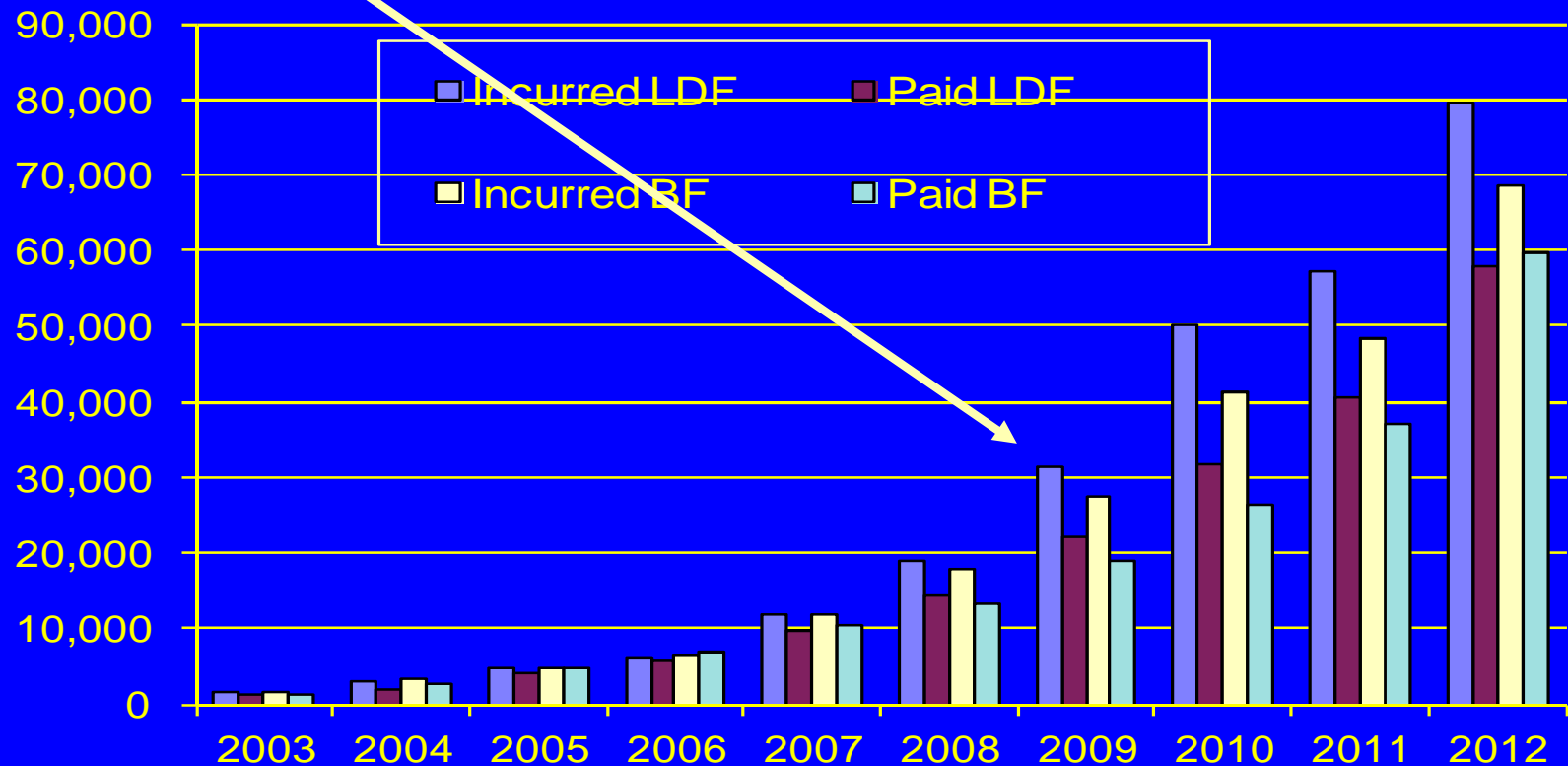
Accident Year	Earned Premium	ELR	Expected Losses	Incurred BF Method				Paid BF Method			
				IBNR Factor	Indicated IBNR	Incurred Loss (000) at 12/31/12	Indicated Ultimate Loss (000)	Reserve Factor	Indicated Reserve	Paid Loss (000) at 12/31/12	Indicated Ultimate Loss (000)
2003	47,975	70.0%	33,582	0.015	487	25,808	26,295	0.042	1,415	24,636	26,051
2004	47,397	70.0%	33,178	0.029	956	25,148	26,104	0.083	2,737	22,865	25,603
2005	46,609	70.0%	32,626	0.040	1,309	29,202	30,511	0.141	4,615	25,807	30,423
2006	50,599	70.0%	35,419	0.071	2,510	28,013	30,523	0.193	6,831	24,090	30,921
2007	64,637	70.0%	45,246	0.110	4,968	40,011	44,979	0.230	10,400	32,989	43,389
2008	69,510	70.0%	48,657	0.152	7,410	48,858	56,268	0.272	13,218	38,508	51,726
2009	86,505	70.0%	60,554	0.204	12,323	63,018	75,341	0.316	19,130	47,770	66,899
2010	92,564	70.0%	64,795	0.285	18,475	68,770	87,245	0.408	26,436	46,119	72,555
2011	97,248	70.0%	68,073	0.382	26,018	56,263	82,281	0.545	37,132	33,837	70,969
2012	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
2003	26,188	25,720	26,295	26,051	26,063	1,427	256	54.3%
2004	25,894	24,921	26,104	25,603	25,630	2,765	482	54.1%
2005	30,423	30,060	30,511	30,423	30,354	4,547	1,152	65.1%
2006	30,149	29,846	30,523	30,921	30,360	6,270	2,347	60.0%
2007	44,946	42,835	44,979	43,389	44,037	11,049	4,026	68.1%
2008	57,635	52,870	56,268	51,726	54,625	16,117	5,767	78.6%
2009	79,119	69,830	75,341	66,899	72,797	25,027	9,779	84.2%
2010	96,199	77,904	87,245	72,555	83,475	37,356	14,706	90.2%
2011	91,071	74,443	82,281	70,969	79,691	45,854	23,428	81.9%
2012	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 Reserve Estimates can be Reasonable (but there can be only one Carried Reserve)

Now it's time!

You Set the Reserves



# Basic Track III

2013 CLRS

September 15-17, 2013

Boston, Massachusetts