Bornhuetter Ferguson Initial Expected Loss Ratio Report

September 17th, 2013

Boston CLRS

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Using Bornhuetter Ferguson

- Method has an impact on Financial Reporting
- Selection of Initial Expected Loss Ratio is judgmental
- What are the common practices?
- How do they influence overall carried loss reserves?
- What factors have the biggest impact?

Different Methods for IELR

- Prior Evaluation Ultimate
- Pricing Expectations / Plan Loss Ratio
- Cape Cod
  - With or without Trend / Rate adjustments
  - With or without Decay
- Prior Exposure Years Trended / Rate Adjusted
- Judgment
- Industry Benchmark

Survey Responders

- Where they work

Consulting Firm	32.8%
Audit/Accounting Firm	4.5%
Insurance Company	50.0%
Reinsurance Company	10.7%
Government / Research	2.0%

Survey Responders

- About half of the company responders work in a company with over 500 million total gross written premium
- Most of the responders work on the reserving side
- 77.6% of the responders use BF for all lines of business

Responders Analyze

Fire	52.5%	Group A&H	11.2%	Fidelity	22.8%
Allied lines	40.2%	Credit A&H	5.6%	Surety	26.7%
Homeowners	46.6%	Workers' compensation	71.9%	B&M	22.5%
Commercial multiple peril	60.4%	Other liability - occurrence	73.3%	Credit	11.5%
Mortgage guaranty	6.7%	Other liability - claims-made	51.7%	International	12.6%
Ocean marine	24.2%	Products liability - occurrence	56.5%	Warranty	12.9%
Inland marine	40.4%	Products liability - claims-made	39.3%	Reinsurance - NPP	26.7%
Financial guaranty	9.6%	Private passenger auto liability	52.8%	Reinsurance - NPL	29.5%
Medical mal. occurrence	33.1%	Commercial auto liability	72.2%	Reinsurance - NPF	15.4%
Medical mal. Claims made	40.4%	Auto physical damage	65.7%		
Earthquake	10.4%	Aircraft (all perils)	13.8%		

Negative Press

- "I feel that the B-F method is an inappropriate method."
- "In the vein of coming up with a best estimate using all available information, the rationale for using some initial expected loss ratio in the analysis despite information that suggests that initial expected loss ratio was either too high or too low is a flawed approach."
- "I do see abuse and unsupported BF selections frequently on the low side as a reviewer."
- "Although my decisions are independent, I feel pressure from management, and I can't imagine an actuary working for a client that doesn't."

Choice of Method – Long Tailed Lines

- The most popular method of determining IELR for long tailed lines:
  - Pricing Loss Ratio
  - Prior Analysis Ultimate Loss Ratios
  - Industry Aggregates
  - Cape Cod
  - Prior Accident years
  - Prior Accident years adjusted for rate changes and trends
  - Judgment

Choice of Method – Long Tailed Lines

Pricing Loss Ratio	9.3%
Prior Analysis Ultimate Loss Ratios	27.6%
Industry Aggregates	1.5%
Cape Cod	9.6%
Prior Accident years	6.1%
Prior Accident years adjusted for rate changes and trends	43.6%
Judgment	2.3%

Choice of Method – Long Tailed Lines

- All types of employment picked prior accident year trended and rate adjusted, except reinsurance company responders where pricing loss ratio was the most popular
- For insurance company responders, prior evaluation ultimate was a very close second method

Choice of Method – Short Tailed Lines

Pricing Loss Ratio	11.4%
Prior Analysis Ultimate Loss Ratios	31.8%
Industry Aggregates	2.5%
Cape Cod	8.6%
Prior Accident years	8.0%
Prior Accident years adjusted for rate changes and trends	34.3%
Judgment	3.4%

Choice of Method – Short Tailed Lines

- Similar results to Long Tailed
- In this case prior years ultimate is used most by insurance company responders
- Pricing loss ratio still most used for reinsurance company responders

Responders may choose IELR based on:

Size of Book	45.9%
Credibility of development factors	46.6%
Size of development factors	33.8%
Homogeneity of portfolio	48.3%
Maturity of accident year	78.0%

BF Used to Develop

ALAE/DCC	81.0%
ULAE/AAO	6.5%
Salvage and Subrogation	31.2%
Claim Counts	51.4%

How is DCC Treated

Assume a fixed percent to losses/premium for all years as IE	15.0%
Assume an Expense/Premium IE that varies by year	8.2%
Use a claim count method to determine ultimate expenses	0.7%
Assume an Expense/Ultimate Loss Ratio that varies by year	23.2%
Don't use BF on expenses	22.2%
Analyze Loss and Expense combined	30.7%

For Current AY, BF is

Always used	49.6%
Sometimes used	40.5%
Rarely used	7.1%
Not used	2.8%

For other than Current AY

Always used	14.1%
Sometimes used	76.1%
Rarely used	9.3%
Not used	0.6%

How Often Should IELR Be Reselected?

Quote from Survey Responder

"My supervisor at my previous employer seemed fairly convinced that once the ELR for a particular accident year was determined, it should not be revised in future reserve reviews, because he argued that is not really the BF method, but "something else." I suppose, strictly speaking, he might be right, but I'm not sure that makes it a less accurate method. If actual loss emergence leads you to believe that your initial expectation was off, then perhaps it makes sense to revise it as you get more information as the data develops. Maybe I just talked myself into preferring the method I'm using now."

How Often is IELR Reselected?

Quarterly	31.4%
Annually	61.1%
Every 2 - 3 years	2.9%
Every 3 -5 years	2.3%
Never	2.3%

Restrictions on IELR?

Higher than paid losses (excluding high salvage situations)	11.1%
Higher than reported losses	26.8%
No boundaries put in place	62.1%

Use of Cape Cod with

A decay factor	18.2%
Loss trend	29.3%
Rate changes	25.9%
Don't use cape cod	65.0%

Rate Changes considered with

A price monitor	63.6%
Planned changes	16.2%
Not considered	20.2%

Sources of Industry LR Benchmarks

AM Best	13.5%
Internal benchmarks	13.1%
SNL	9.0%
ISO	4.5%
NCCI	9.3%
Not considered	50.6%

Sources for Industry Trends

- AM Best
- CAS seminar
- GISA Reports (Canada)
- Internal/Client Data
- ISO
- Judgment
- NCCI
- Pricing Analysis
- Rate Filings
- State Ins Dept Web Site

Management Influence

My decisions are completely independent	50.7%
Management points out factors that I consider in my analysis	42.2%
Management guides my final decisions	5.7%
I feel pressure from management	1.4%

Reasonability Checks of IELR?

Audit controls under SOX	14.7%
Audit controls under Model audit rule	6.8%
Hindsight Tests of accuracy of methodology	36.8%
Internal Peer Review	82.6%
External Peer Review	32.1%
Comparison of expected losses to actual emerged losses to date	65.9%

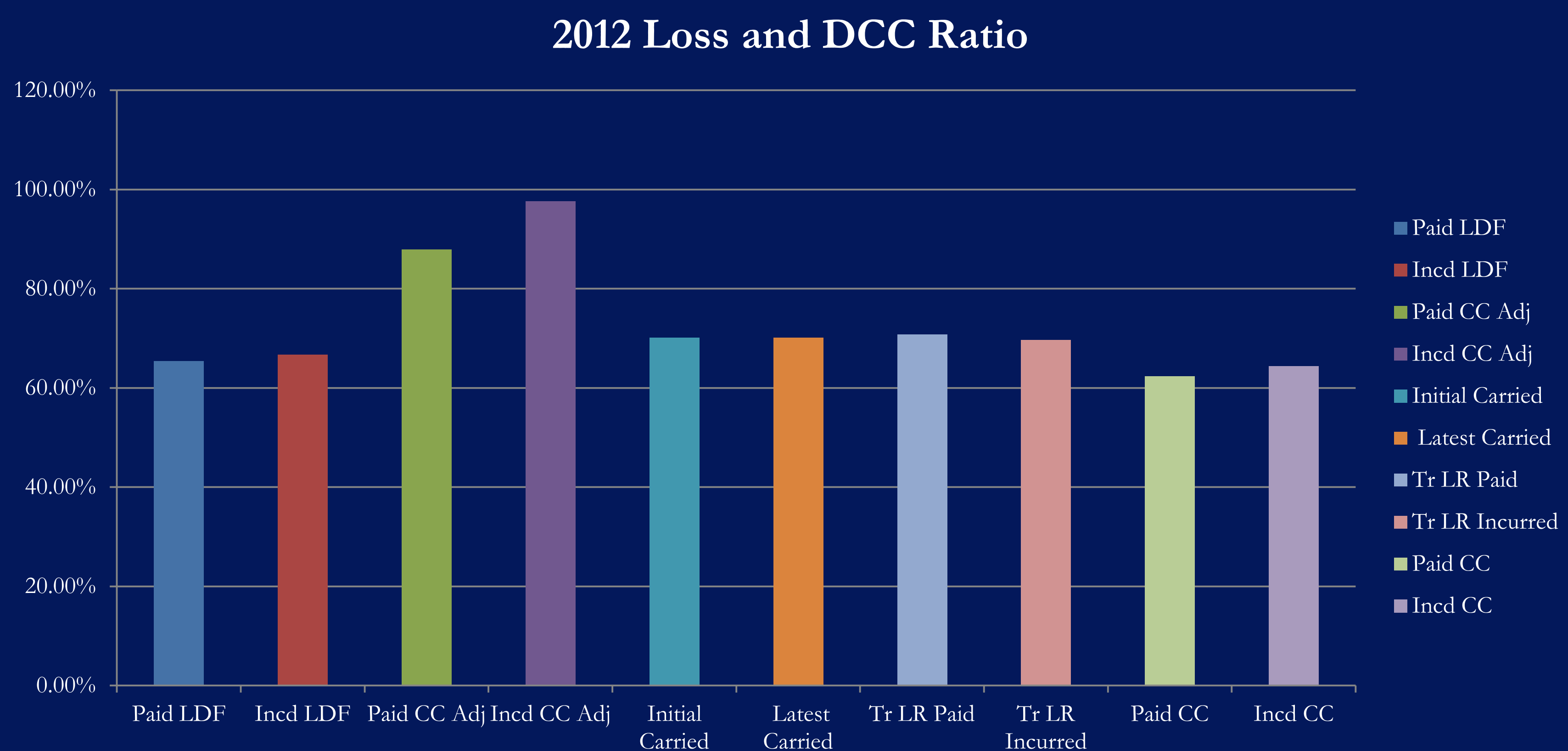
Industry Data Testing

- Used Schedule P Data, an industry rate change index for commercial lines (CIAB) and industry claim cost inflation trends (Towers Watson)
- Tested Two Questions
  - How do carried reserves compare to BF methods (using aggregate loss development factors)
    - Prior evaluation (past carried)
    - Cape Cod (with and with out rate and inflation info)
    - Trended Rate adjusted loss ratio
  - How do hindsight reserves (10 years later) compare with what methods would have predicted

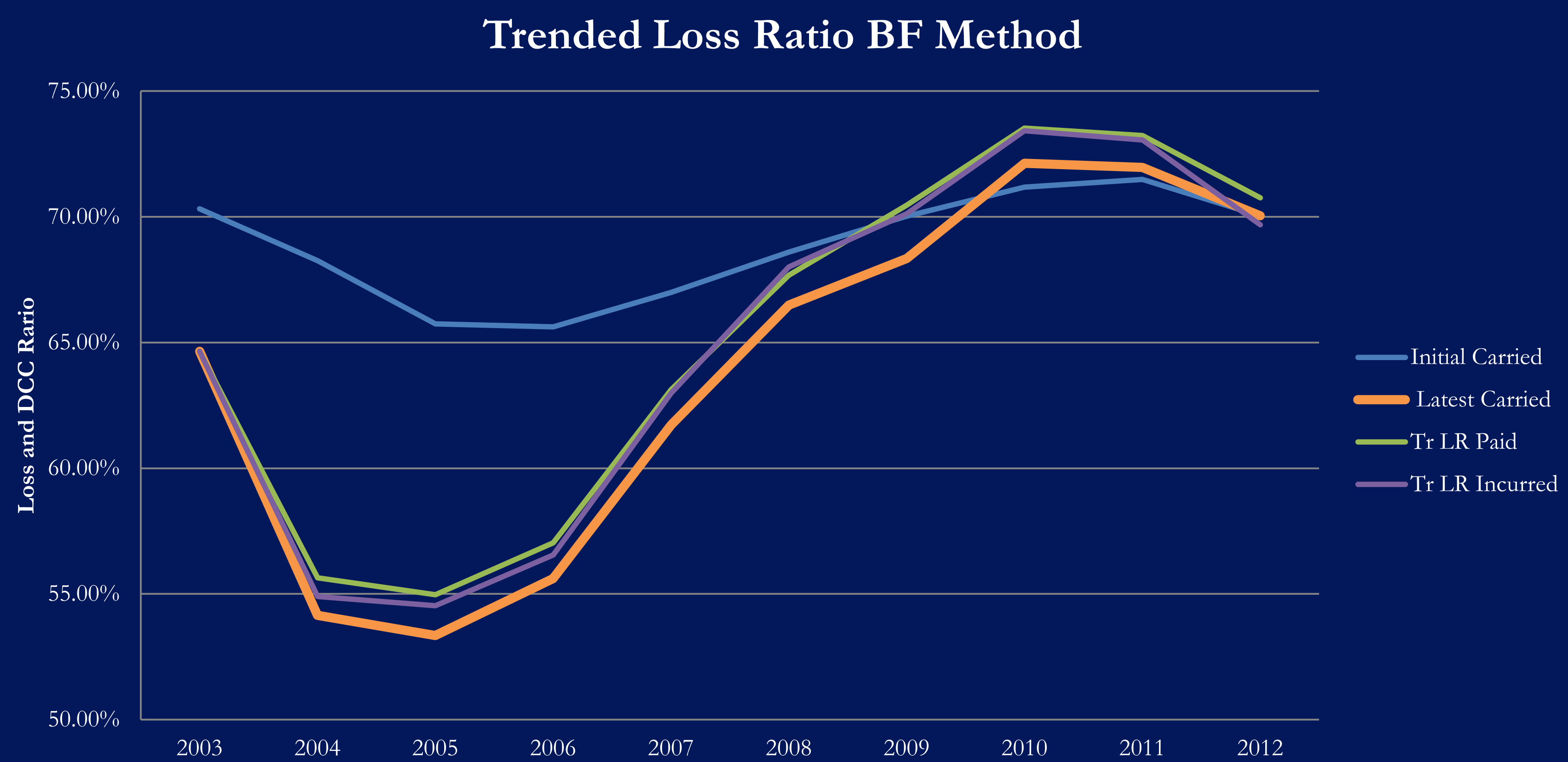
Lines Tested

- Commercial with Rate Info
  - Workers Comp
  - General Liability Claims Made and Occurrence
  - Med Mal Claims Made and Occurrence
  - Commercial Auto
- Commercial and Personal without Rate Info
  - Homeowners
  - Private Passenger Auto
  - CMP

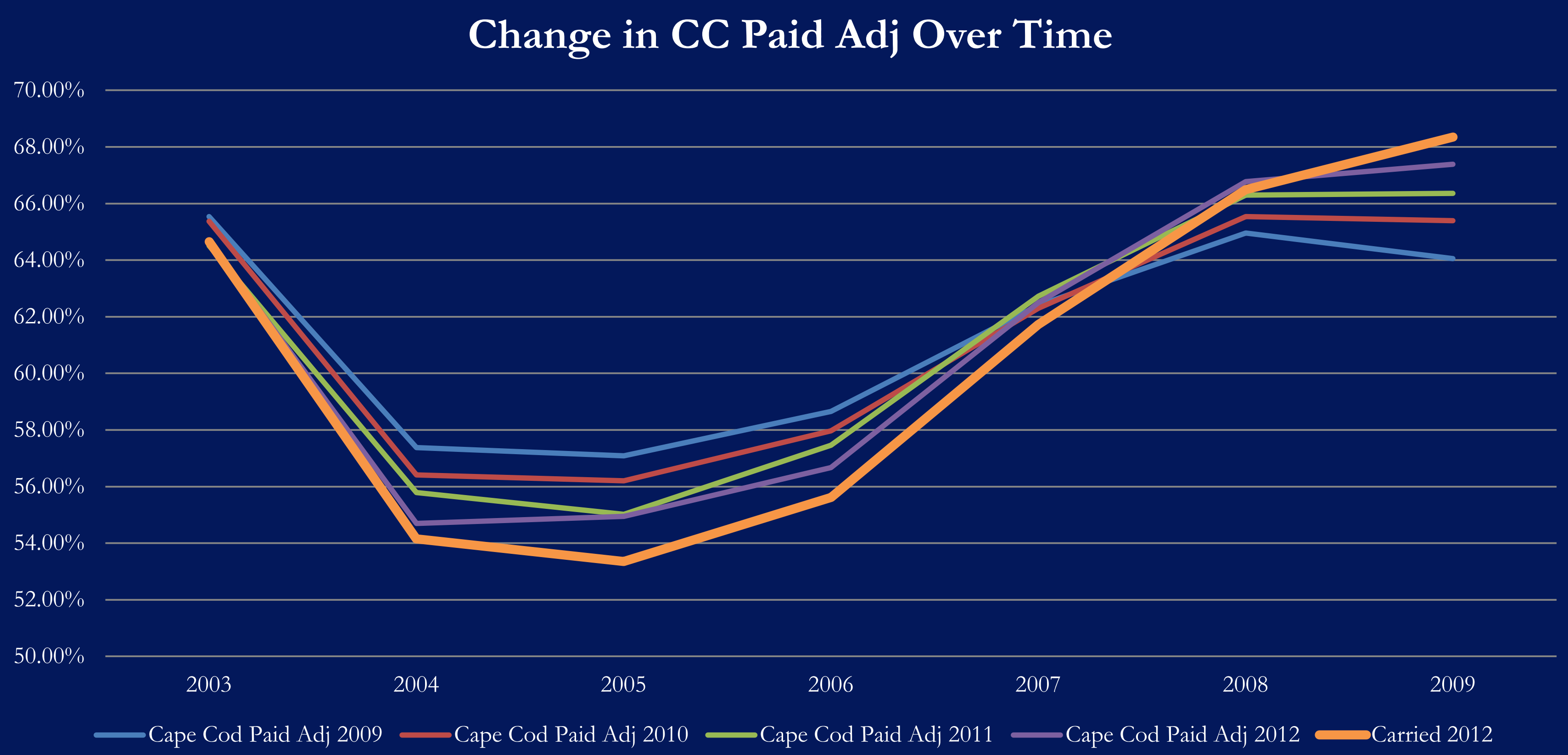
Current Carried Commercial Net



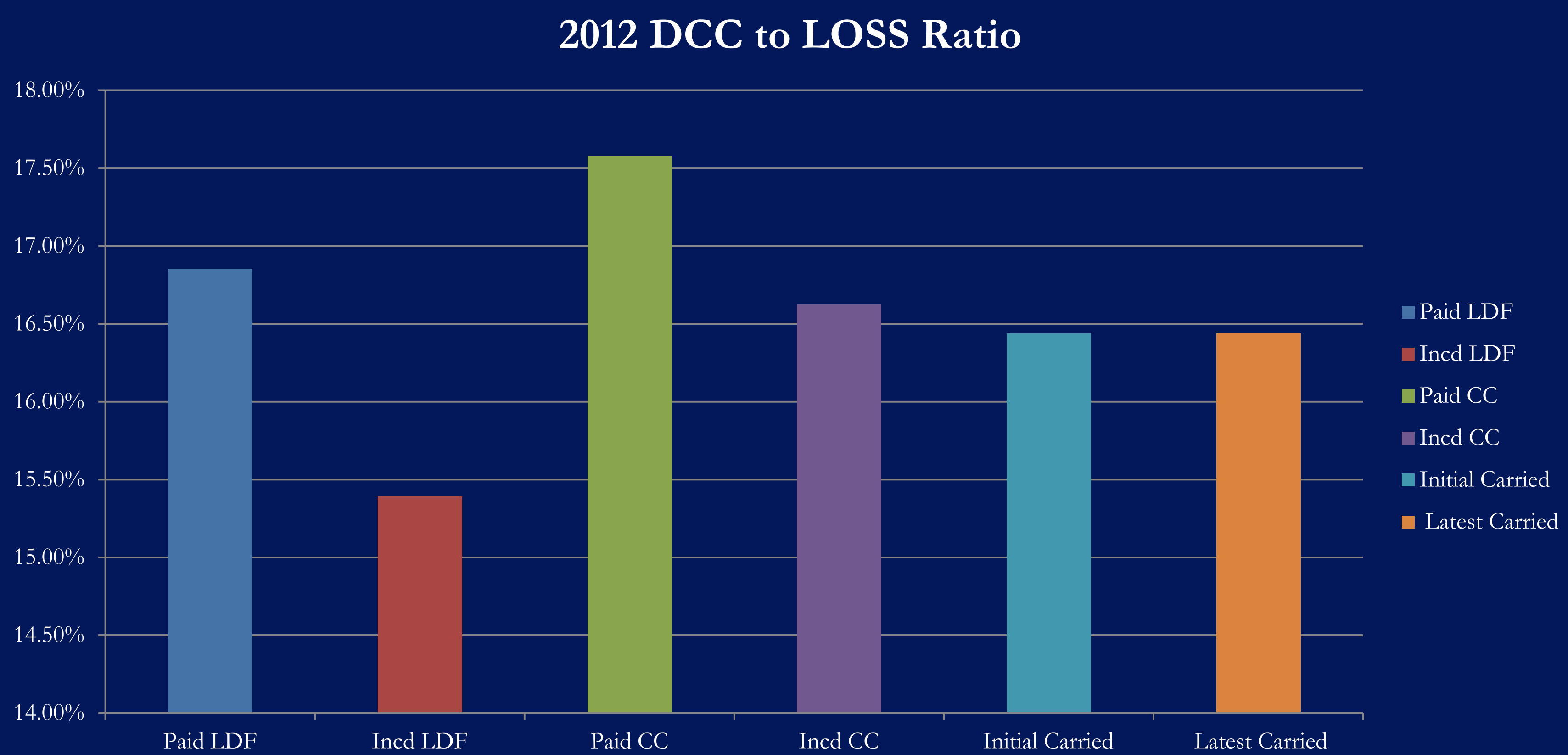
Current Commercial Carried Net



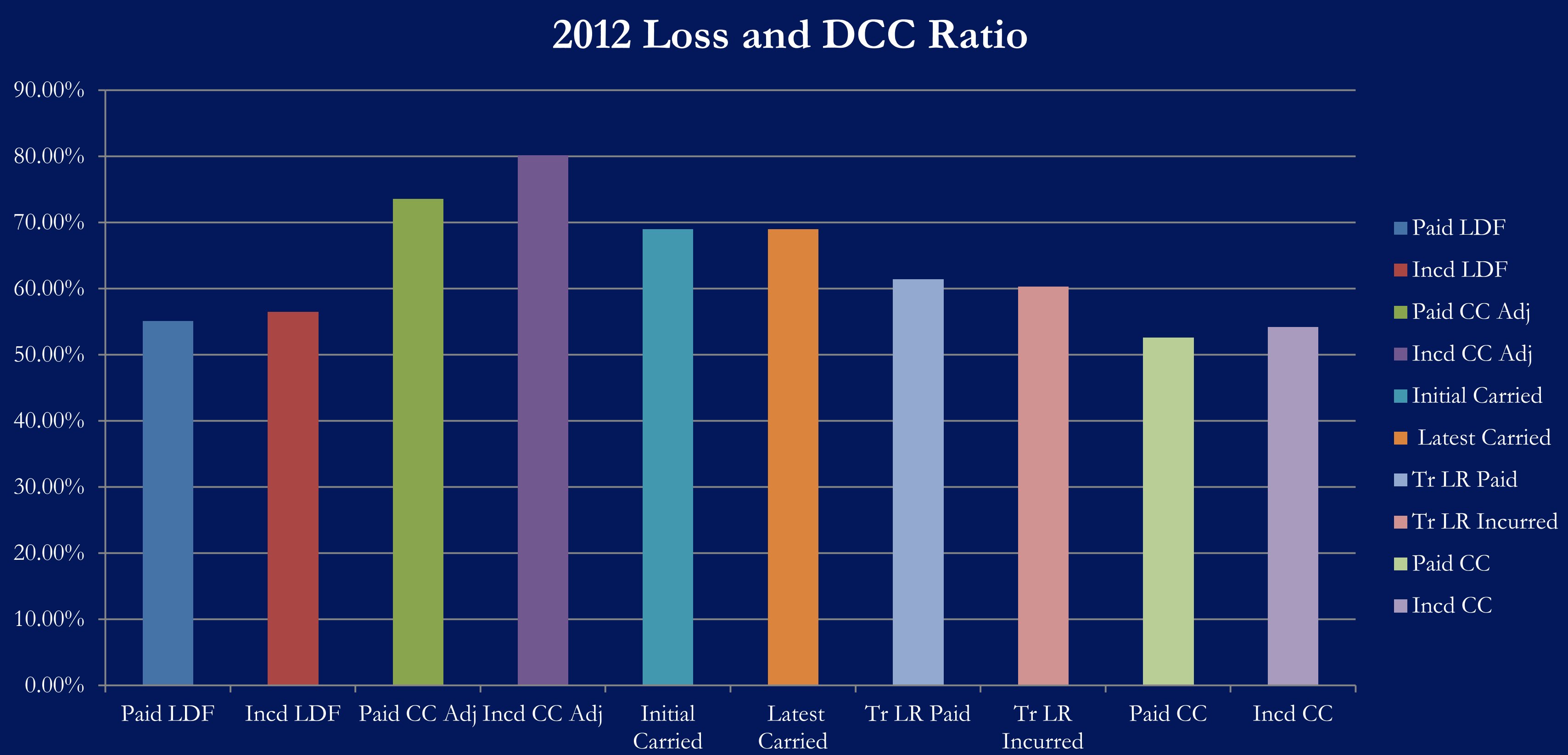
Commercial Loss and DCC Net



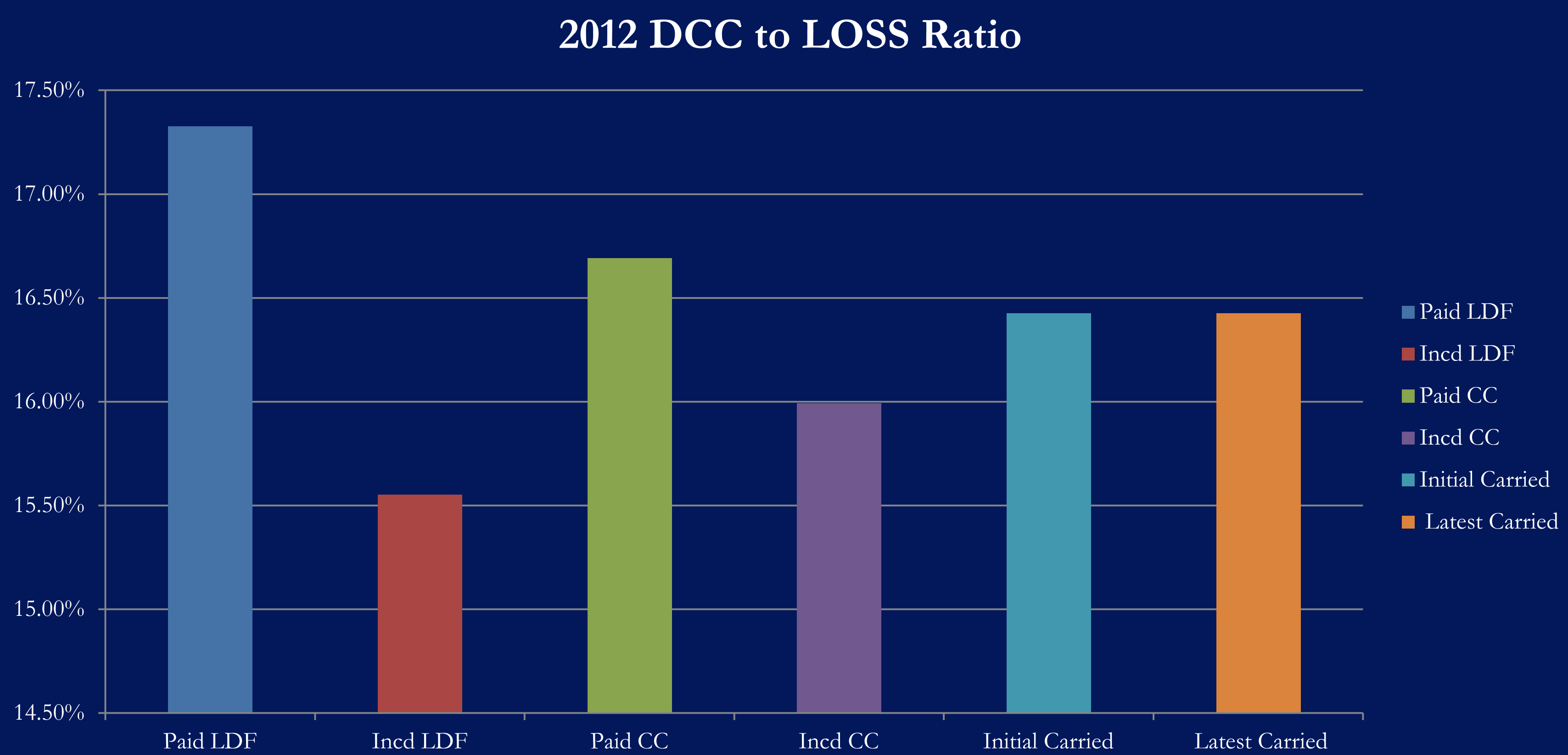
Current Carried Commercial Net



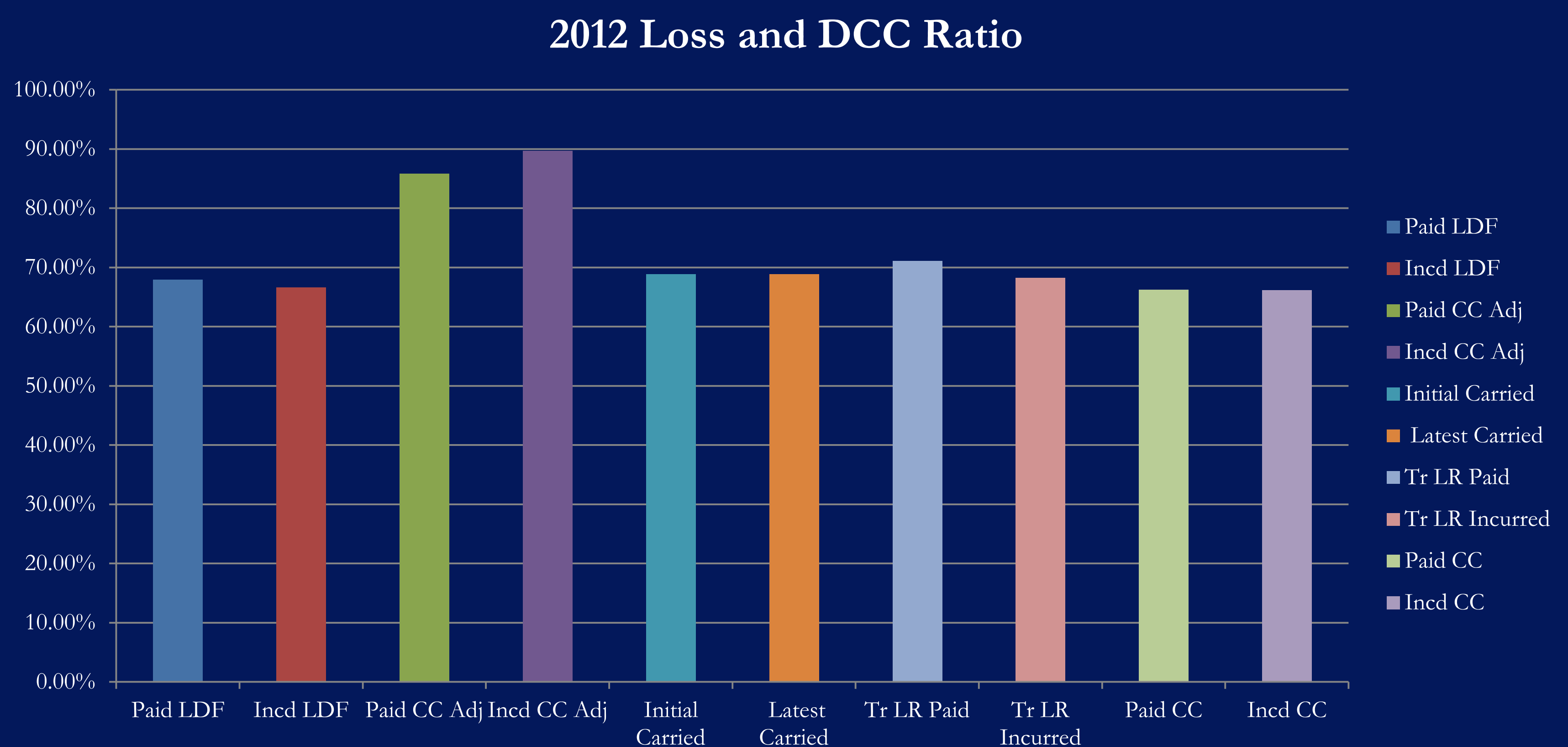
Current Carried Commercial Direct



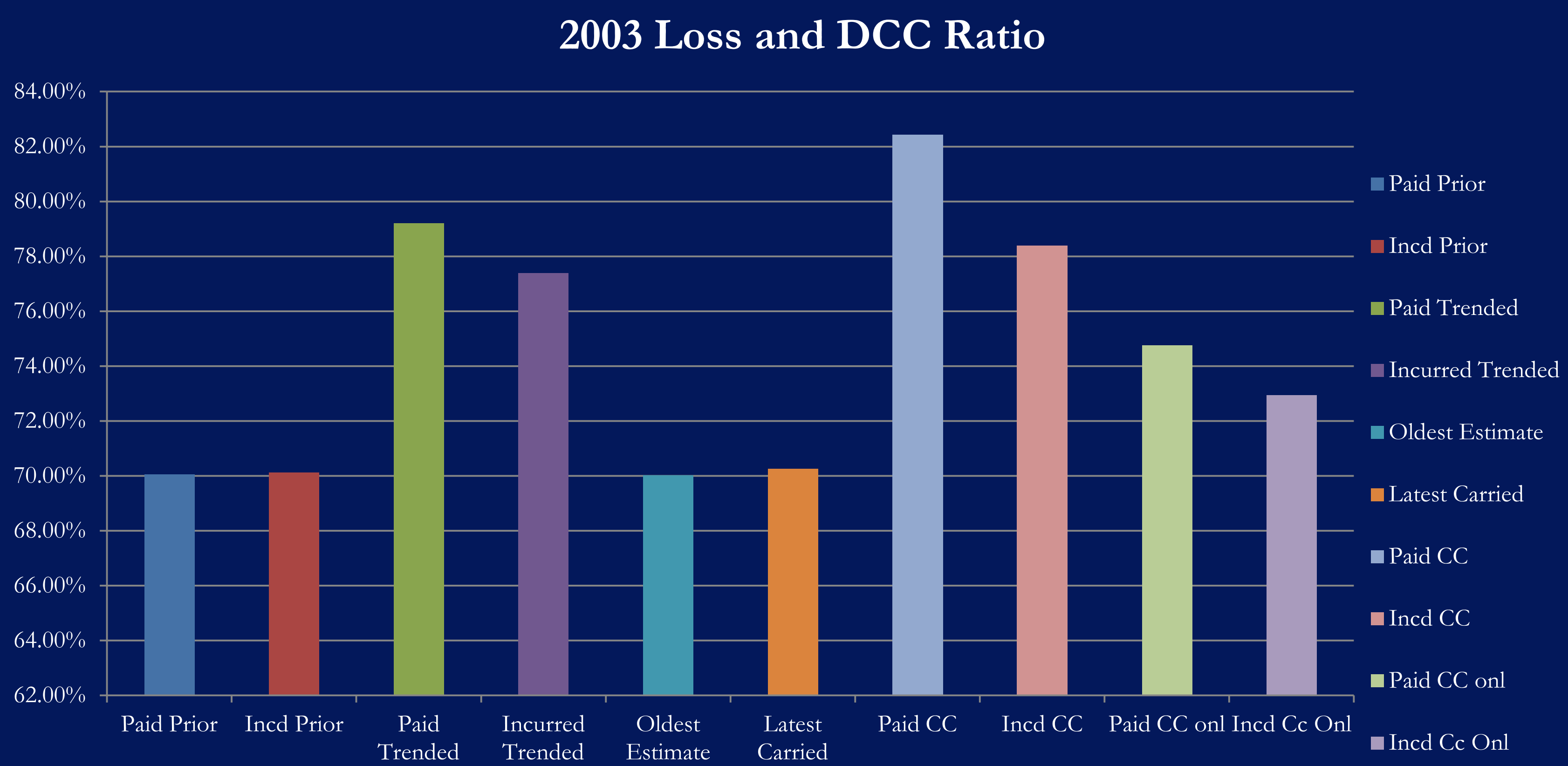
Current Carried Commercial Direct



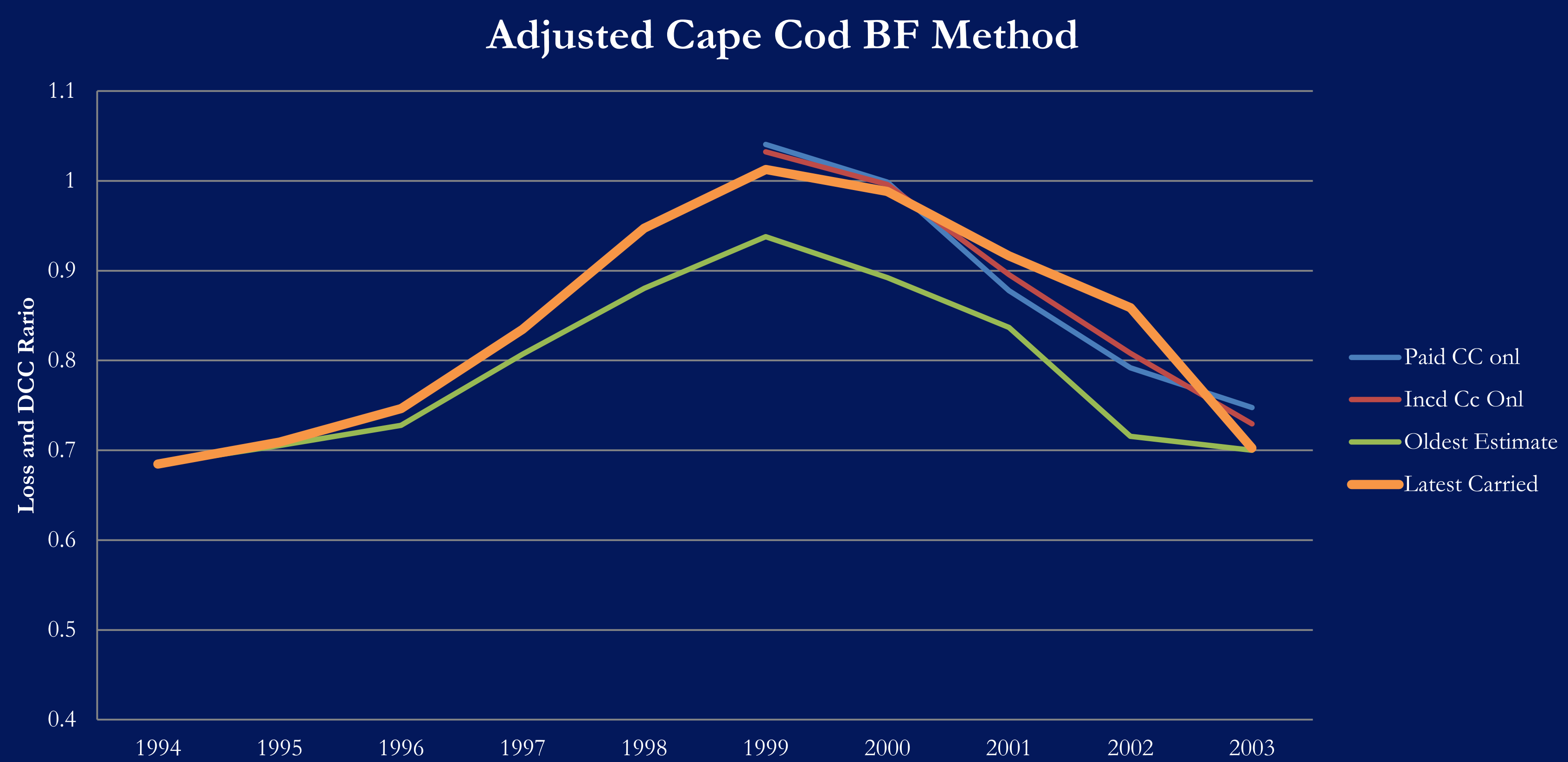
Current Carried Personal and CMP Net



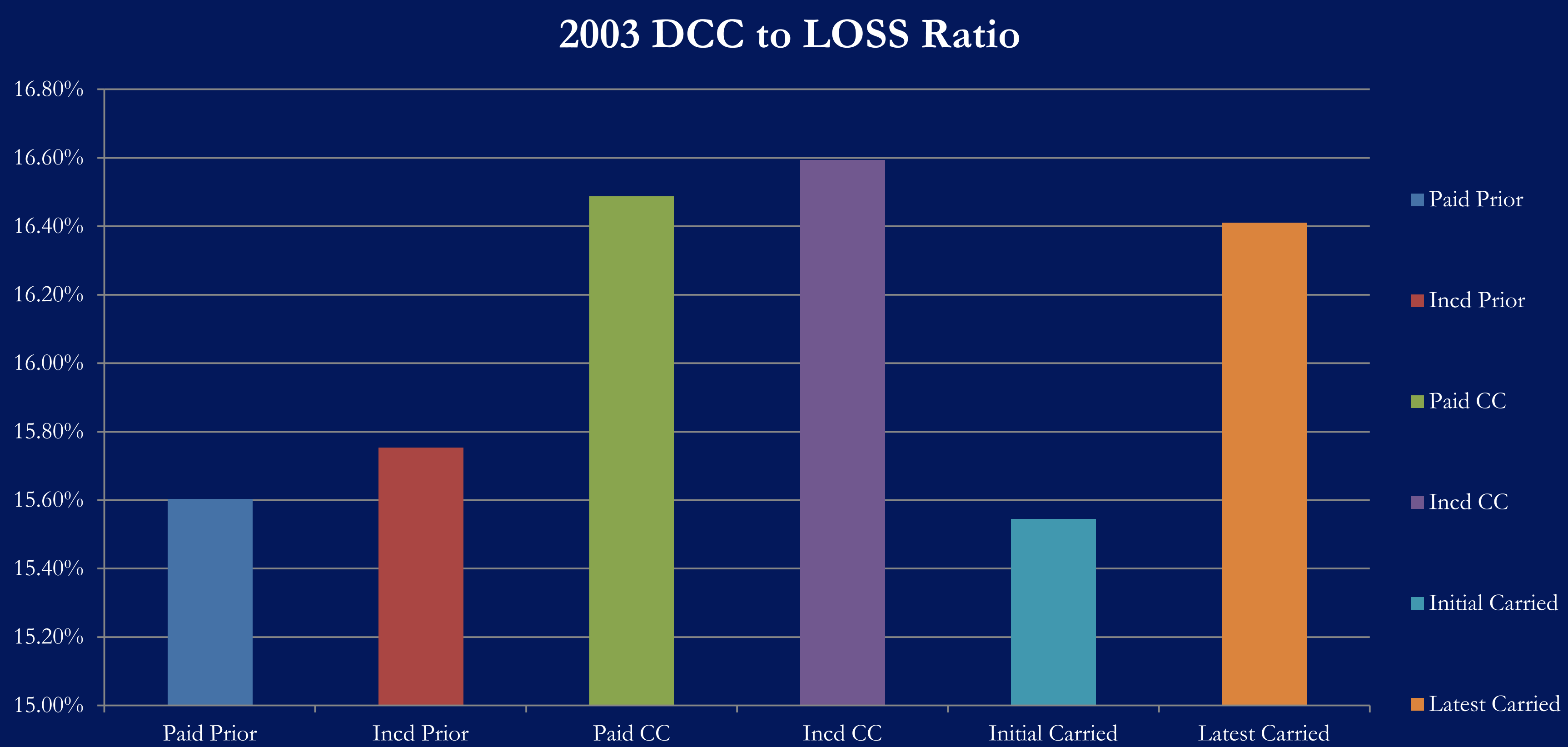
Hindsight Commercial Net



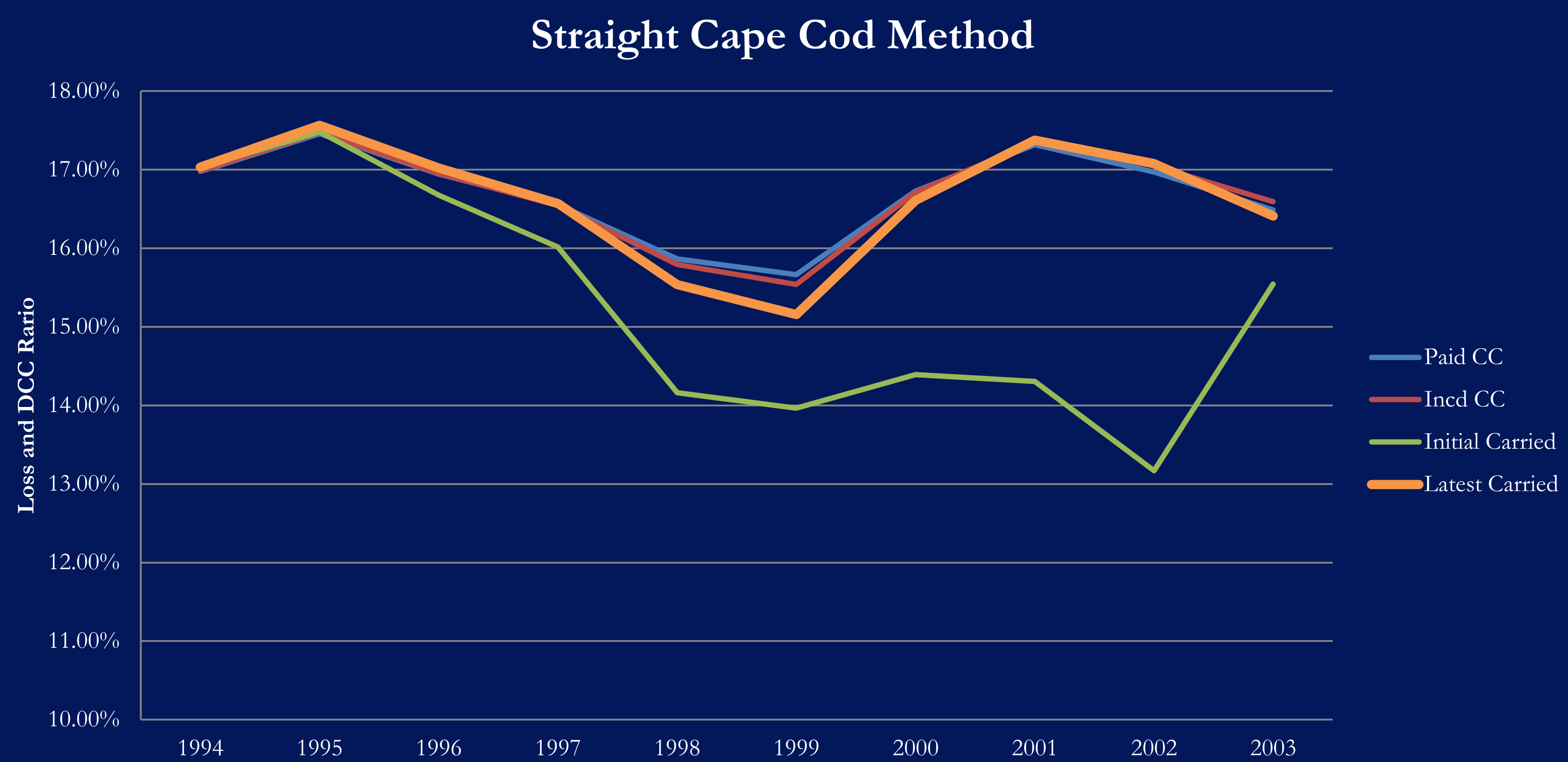
Hindsight Commercial Net



Hindsight Commercial Net



Hindsight Commercial Net DCC



Individual Lines

- Results were similar to overall, particularly in lines affected by cycle like WC
  - High Claim cost trends
  - Sharp rate changes that lag experience
- More detail will be available in paper to follow

My Favorite Comment

"Because recipients of my reports are mostly not actuaries, I tend not to use the Bornhuetter and Ferguson names. I call it an "expected unreported loss ratio" method, which says what it is. I hope Ron and Ron would not mind."