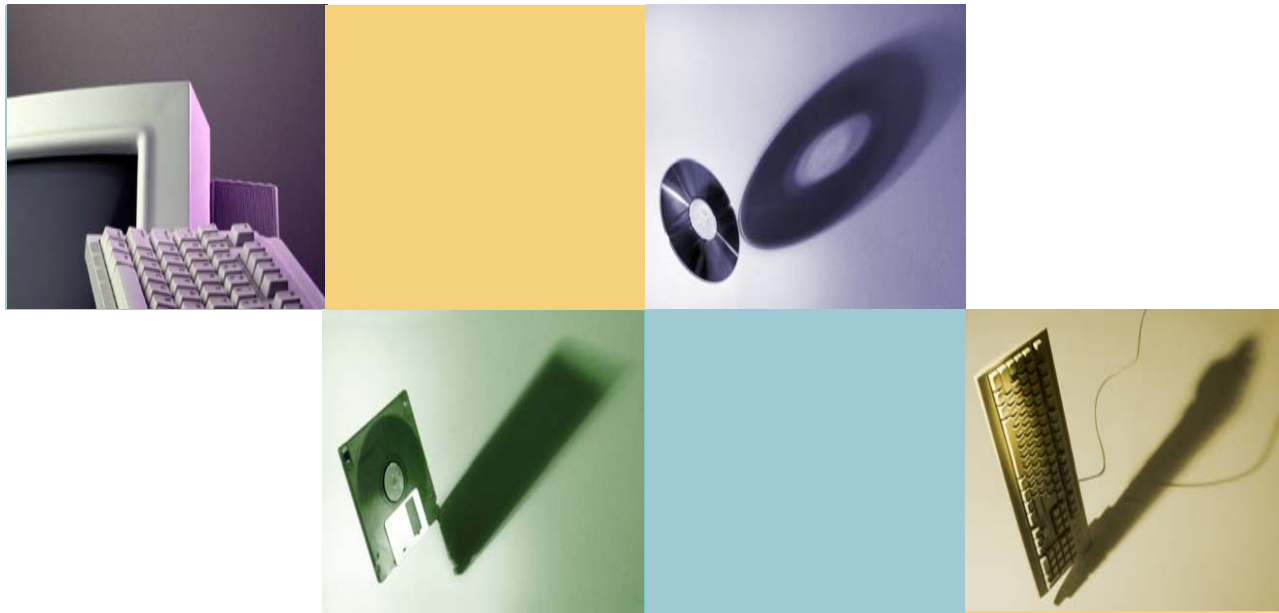


# Workers' Compensation in the Bay State: Current Health of the Market & Ratemaking Overview



**Presented by:**

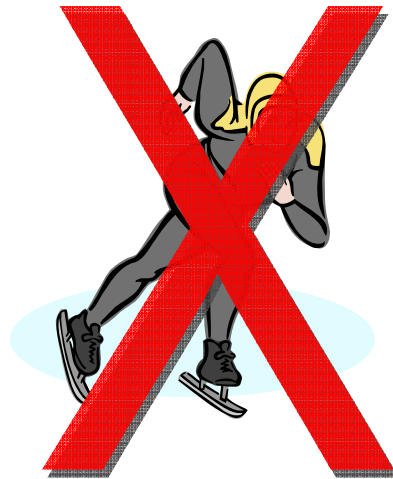
**Rob McCarthy, FCAS, CFA, CPCU, MAAA**

**Workers' Compensation Rating and Inspection Bureau of MA**

CAS Ratemaking Seminar  
Boston, MA  
March 17, 2008

# Disclaimer

The speaker's views are not necessarily identical to the views of the cosponsors of the program or his employer, the WCRIB of Massachusetts.



# Outline

WCRIB's Role

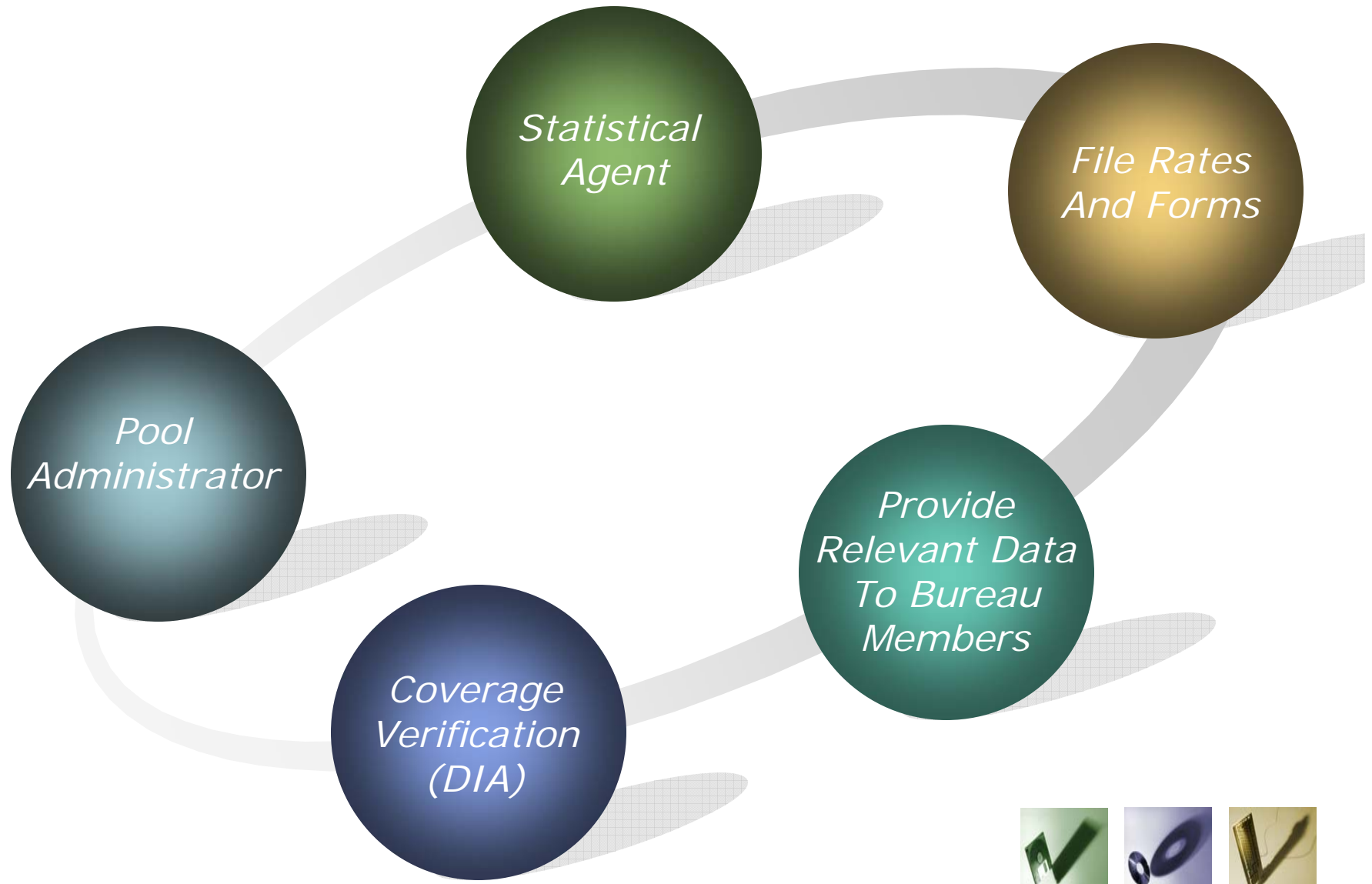
Current Market Place

Massachusetts WC Ratemaking

Pending Rate Filing



# WCRIB's Role



# Price Competition in MA WC

MA is an administered pricing state

➤ Deviations - downward only

- [M.G.L. Chapter 152, §53A\(9\)](#)
- [Approved deviations](#)



➤ Schedule Rating – downward only

- [Approved schedule rating plans](#)



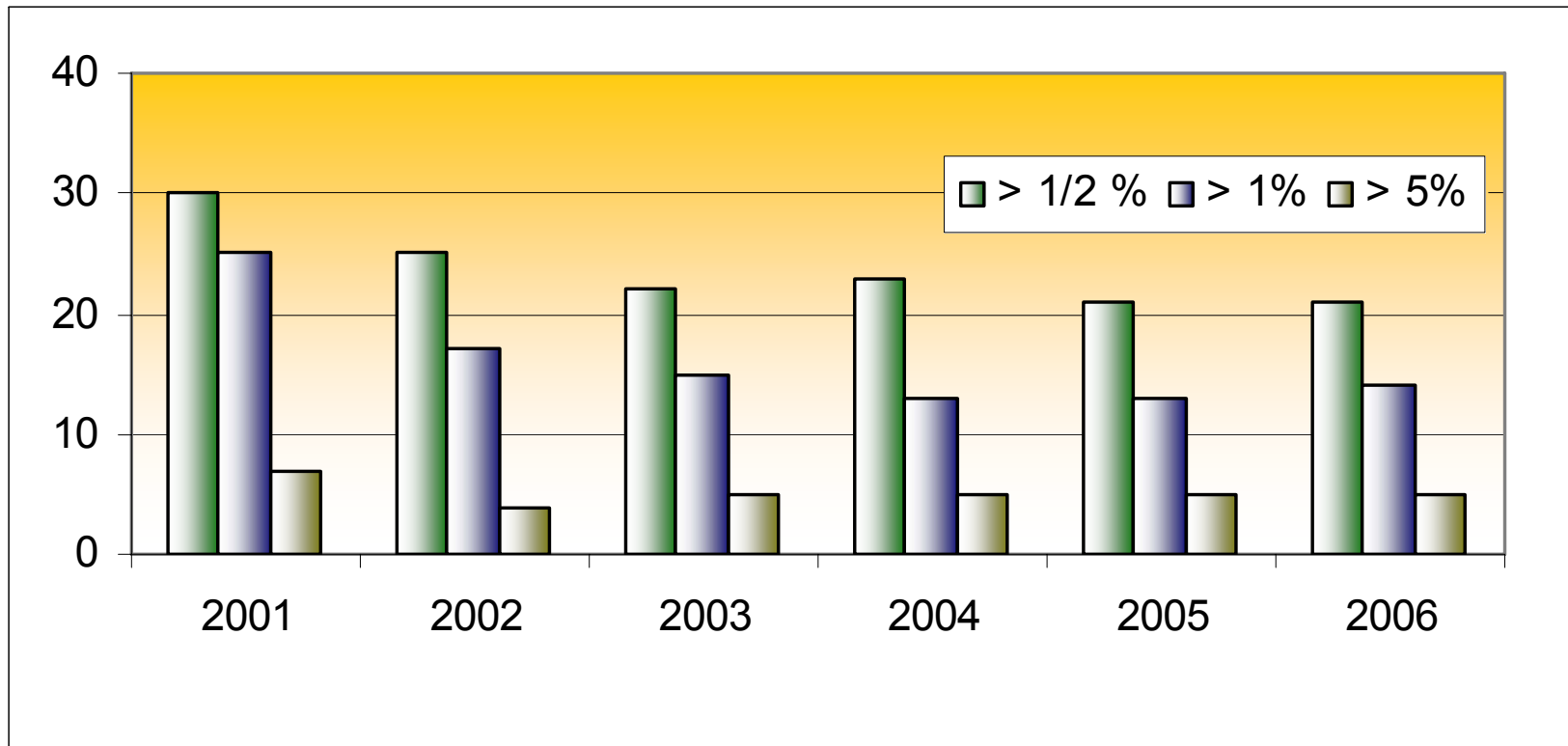
➤ Premium Discounts

- [Type A or B](#)



# Number of Market Participants

Market Share Histogram  
Based on Annual Statement Direct Written Premiums



Numbers of Carrier Groups writing premium in CYs 2001 – 2006 are 94, 87, 84, 86, 85, and 84 respectively.



# Number of Market Participants

Only 13 different carrier groups were ranked in the Top 10 based on CY direct written premiums for CYs 2001 - 2006.

This included:

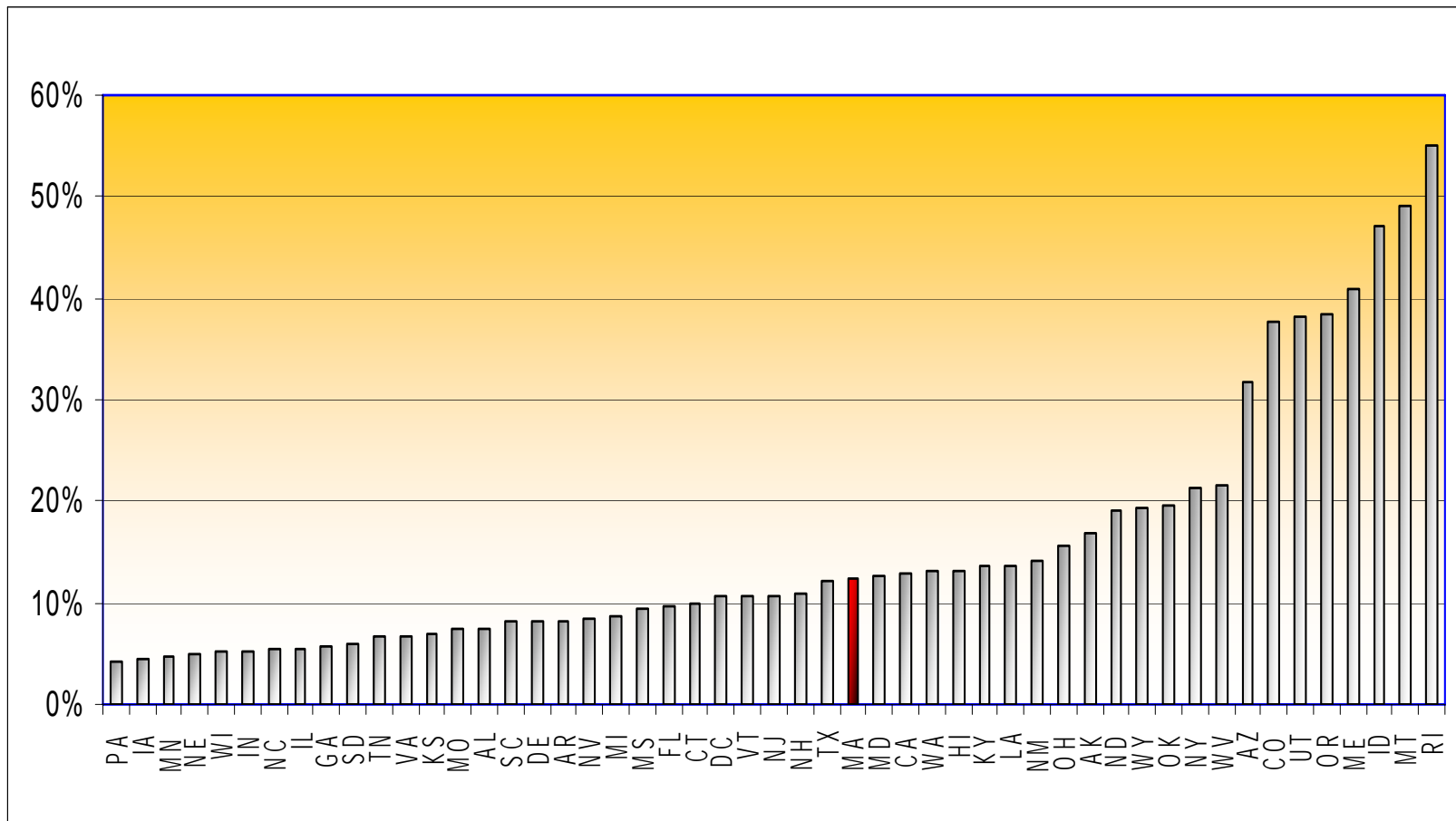
Kemper (Run-off)

Eastern Casualty (Just closed up shop)

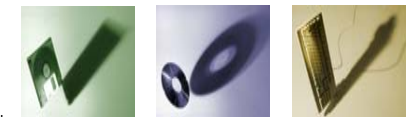


# MA Market Concentration vs. Other States

All Firm Herfindahl – Hirschman Index



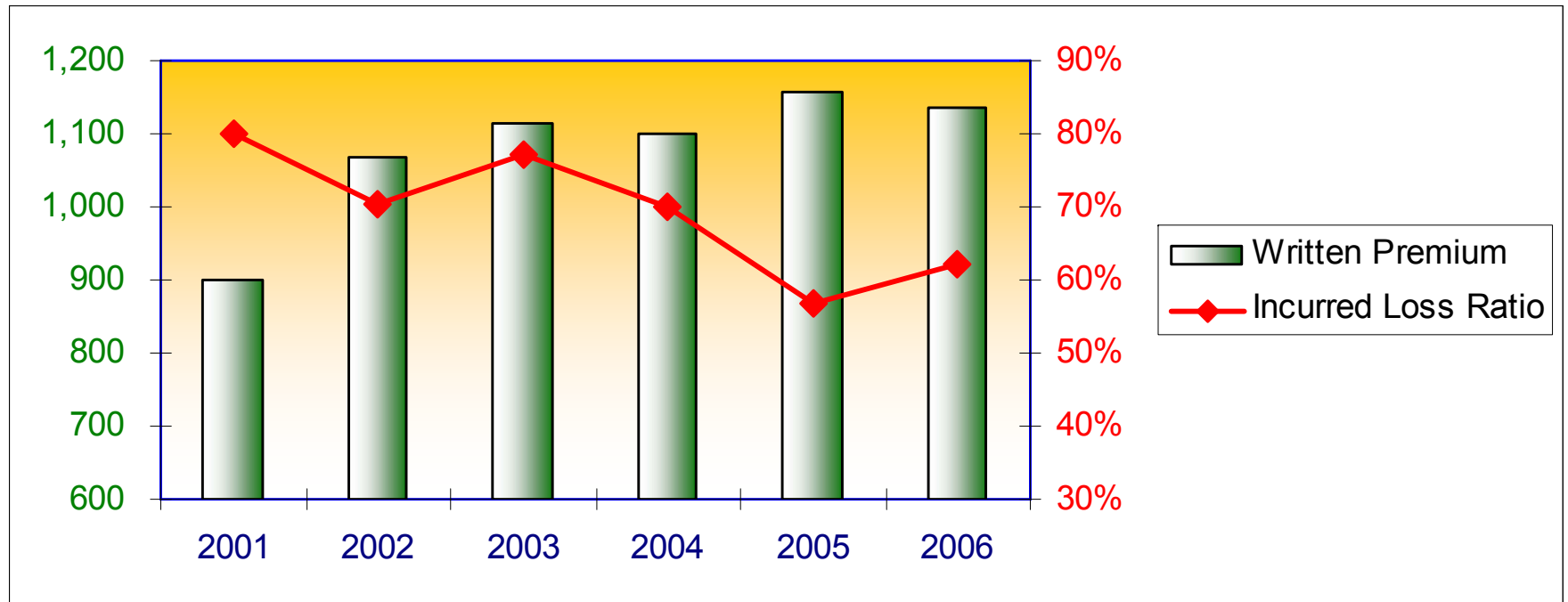
Data Source: AM Best – Financial Suite – State/Line (P/C Lines) V2007.8  
 (Carrier Groups with negative DPW were ignored)





# Statutory Pg 14 Underwriting Results

## Massachusetts Workers' Compensation



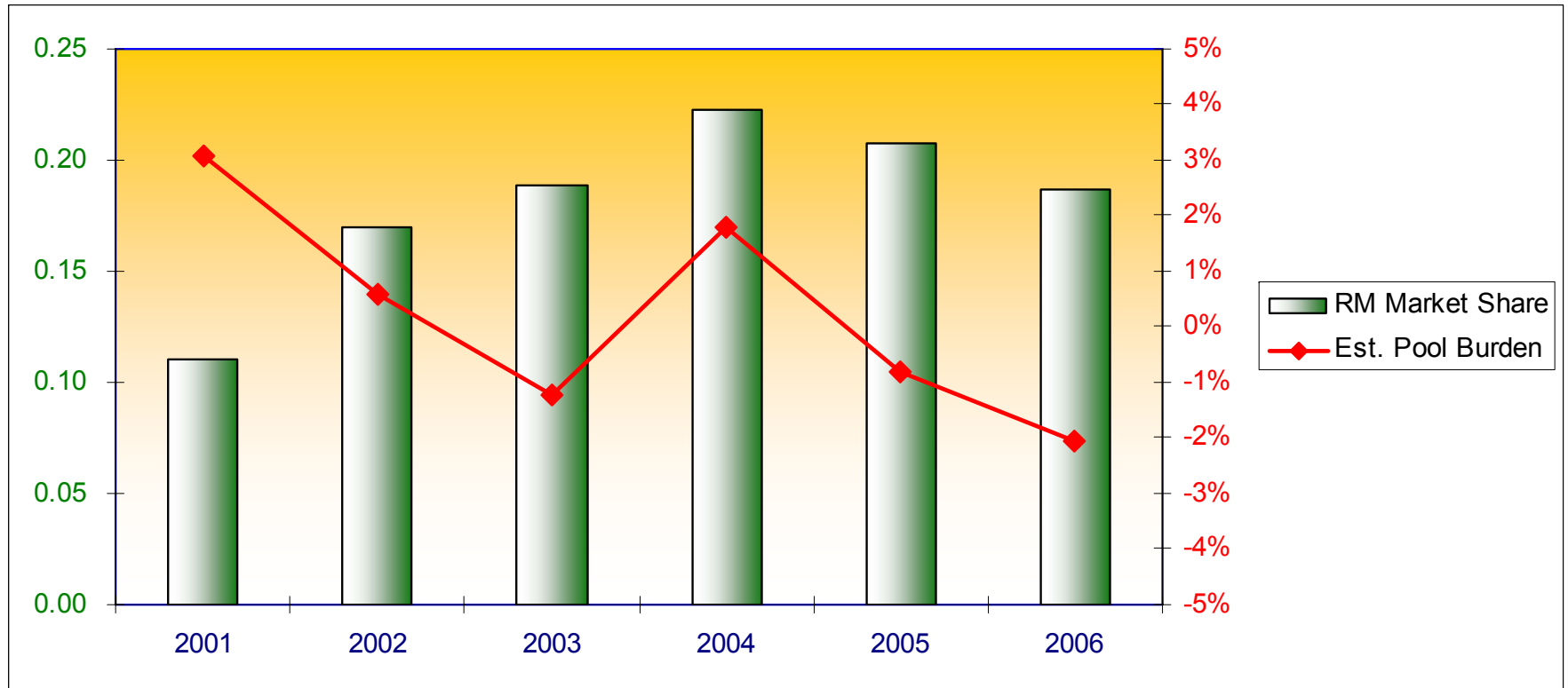
Note that there is no residual market rate differential in Massachusetts. Residual market insureds do not get premium discounts but they may be eligible for a Qualified Loss Management Credit ("[QLMP Credit](#)"). Also note, ARAP applies to all insureds in Massachusetts, not just residual market insureds.

Data Source: AM Best – Financial Suite – State/Line (P/C Lines) V2007.8  
(Carrier Groups with negative DPW were ignored)



# Residual Market

## Massachusetts Workers' Compensation



RM Market Shares based on direct written premiums.  
Estimated Pool Burden does not reflect the impact of investment income.

Data Source: WCRIB Special Bulletins  
Updated Information on Residual Market Share  
Residual Market Loss Ratio and Burden Estimate



# VDAC Reapportionment

What are we trying to fix?

- Data Lag
- Impact of Audits

Ex: PY 2007 VDAC assignments

Jan – May assignments based on CY 2005

Jun – Dec assignments based on CY 2006

**Assignment target is CY 2007**

Ex: Assume Assignment target is CY **2005**

Risks are perfectly assigned at policy inception

**After audit – no longer perfect**



# VDAC Reapportionment

VDAC Carrier is under-assigned

- Participate in the Pool to the extent of the under-assignment

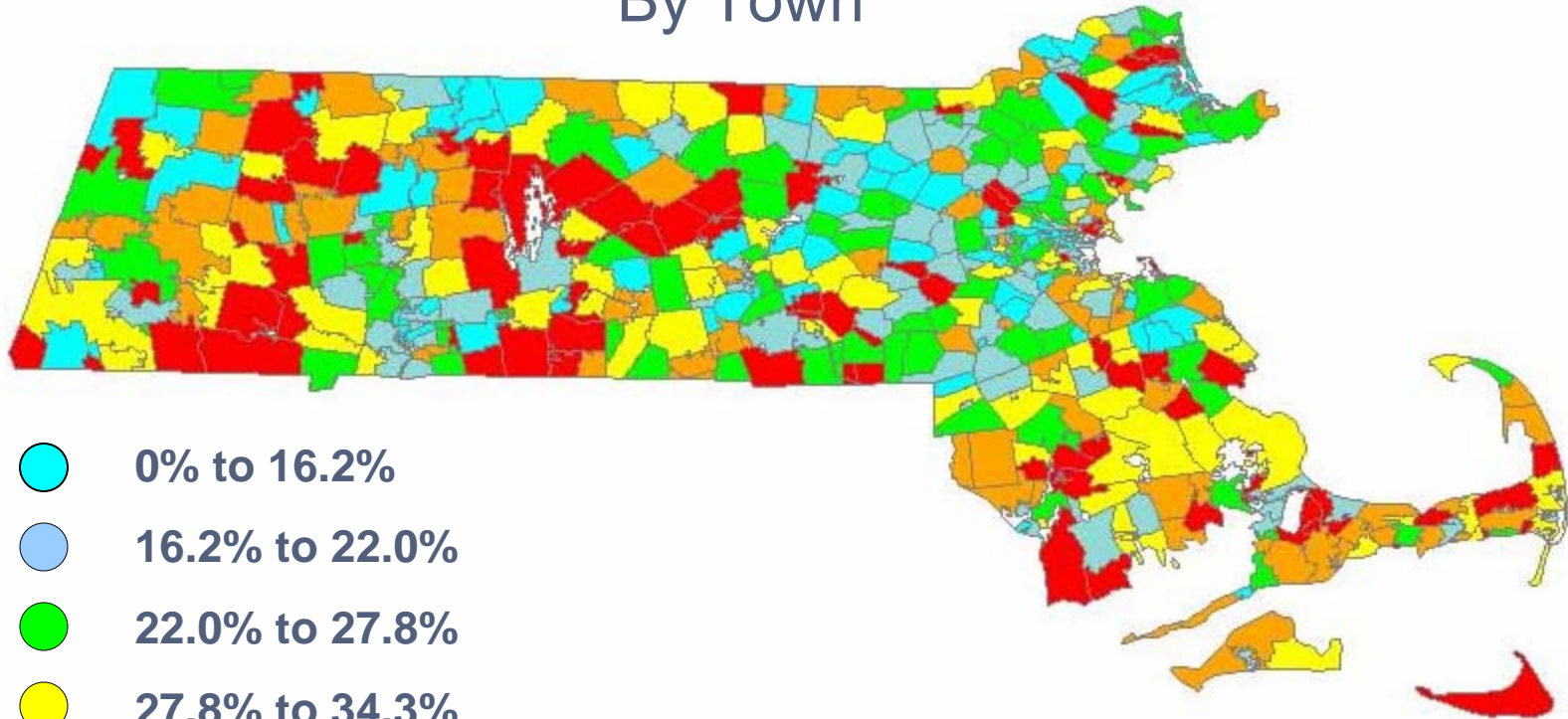
VDAC Carrier is over-assigned

- Participate in the Pool to the extent of the over-assignment



# RM Std Prem as % of Total Market

By Town



- 0% to 16.2%
- 16.2% to 22.0%
- 22.0% to 27.8%
- 27.8% to 34.3%
- 34.3% to 44.5%
- 44.5% to 100%

Based on data from Unit Statistical Reports for policies with inception dates from 7/1/2003 to 6/30/2004.



# RM Size of Risk Distribution

	PY 2003	PY 2004	PY 2005	PY 2006	PY 2007
\$0 - \$500	.37	.35	.34	.33	.33
\$500 - \$1,000	.22	.22	.21	.21	.21
\$1,000 - \$5,000	.32	.33	.34	.35	.35
\$5,000 - \$10,000	.05	.05	.06	.06	.06
\$10,000 - \$25,000	.03	.03	.03	.03	.03
\$25,000 +	.02	.02	.02	.02	.01

Data from [WCRIB's Residual Market Size of Risk Report \(3/4/2008\)](#)

Totals may not sum to 1.00 because of hidden decimal places.

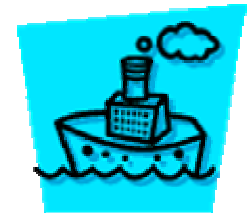


# Market Summary (Rob's Opinion Only)

Despite the size of the residual market, I would characterize the market as competitive, yet stable and well served by the insurance industry. The benefit delivery system appears to be working well.

What could rock the lobster boat?

- Rate Adequacy
  - Medical severity trends
  - Economy's impact on wages and cost of capital
- Law Reform (possibly)



# Rate Review Regulatory Standard

Statutory standard per [M.G.L. Chapter 152, §53A\(2\)](#)

Not Excessive

Not Inadequate

Not Unfairly Discriminatory

Within a Range of Reasonableness

There's More...





# Cost Containment

The commissioner shall make a finding on the basis of information submitted in any filing that insurers employ cost control programs and techniques acceptable to the commissioner which have had or are expected to have a substantial impact on:

- fraudulent claim costs
- unnecessary health care costs
- any other unreasonable costs and expenses
- the collection of the appropriate premium

**Potential Consequences – Disapprove filing or reduce the proposed change in rates.**

[M.G.L. Chapter 152, §53A\(13\)](#)



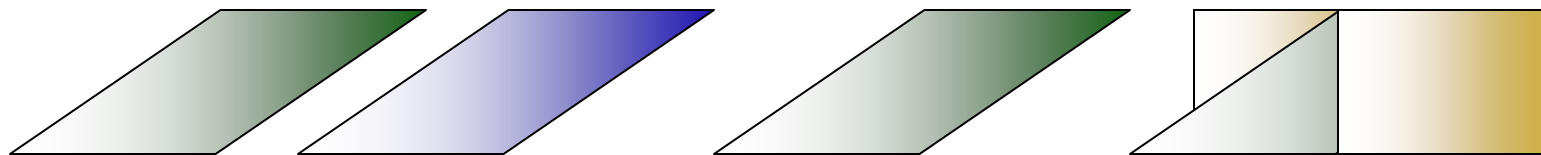
# Overall Rate Indication

2 PYs of Aggregate Financial data excluding large deductibles

- Used 1 PY and 1 AY as recently as 2003

Why the change?

- 2 PYs simplifies calculations of various factors applied to premium and losses
- Generally used in other jurisdictions
- Eliminates double weighting of PY X losses occurring in AY X+1
- Some data would never get used if we didn't file rates annually



This has yet to be litigated in a hearing because we have had Stipulated Rate Changes in 2005 and 2007.



# Loss Ratio Approach? Almost.

We calculate loss, LAE and fixed expense ratio and compare this to a permissible loss, LAE and fixed expense ratio.

$$IC = \frac{(L \times LAE + FE) \times LDS}{(1.0 - VE - P)}$$

IC	Indicated Change
L	Loss Ratio
LAE	Loss Adjust Expense Factor
<b>FE</b>	<b>Fixed Expense Ratio</b>
<b>LDS</b>	<b>Large Deductible Subsidy Factor</b>
VE	Variable Expense Ratio
P	Profit



# Loss Ratio Approach? Almost.

$$IC = \frac{(L \times LAE + FE) \times LDS}{(1.0 - VE - P)}$$

**Fixed Expenses (FE) defined as General Expenses not reflected in the Expense Constant plus Miscellaneous Taxes**

- **We exclude reported Boards & Bureaus and load in WCRIB operating expenses, including Pool Expenses**

**Large Deductible Subsidy Factor (LDS) is needed because:**

- 1. large deductible data excluded from estimation of the rate change**
- 2. no residual market differential in rates**



# Premiums

## Boilerplate stuff

- On-level for rate changes
- Remove the expense constant premium
- Off-balance adjustments
  - Experience and merit rating, ARAP & CCPAP
- Develop premium to ultimate (2 yr avg PDF)
  - Dev to 60 months (Used to be 252 months)

## Not so boilerplate stuff

- Remove load for guaranty fund recoupment so not subject to negotiation in hearing process.



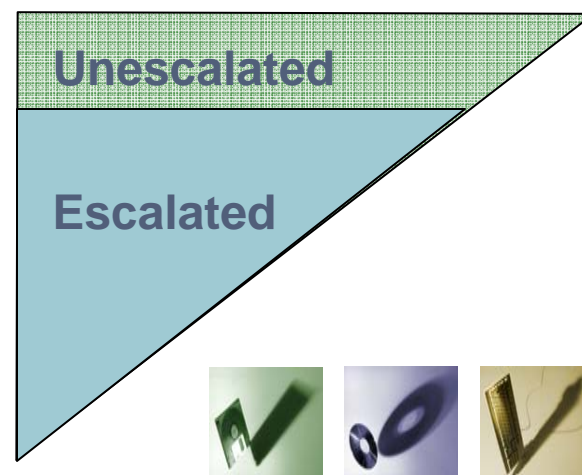
# Loss Development

## Boilerplate stuff

- Indemnity and medical separately
- Estimate ult for paid and paid & case
- 2 yr avg LDF
- Tail factor adjusted for “growth”

## Not so boilerplate stuff

- Adjustment for escalation



# Benefit Level Adjustments

# MORE BORING!



Why?

Last major benefit reform was in 1991.

- Indemnity benefits adjusted for changes in Statewide Average Weekly Wage

Fee schedule

- Slight change in September 2004
- Possible fee schedule change in 2008



# Trend

In Massachusetts, we do it differently than most jurisdictions

- Approach is not original
  - [“Classical Partial Credibility with Application to Trend,”](#) Gary Venter
- Goodness of fit (not volume of data) matters
  - Assign credibility based on how well the data is explained by the regression model
  - Used broader or longer data series as complement of credibility
- I believe NCCI may have done something comparable in the past.





# Trend Summary from Pending Filing

	Indemnity		Medical				SAWW
	Severity	Frequency	Lost Time Medical		Medical Only		
	Severity	Frequency	Severity	Frequency	Severity	Frequency	
(1) Trend	2.7%	-4.5%	7.1%	-4.5%	7.4%	-5.0%	4.2%
(2) Credibility	51%	72%	51%	72%	100%	28%	100%
(3) Complement of Credibility	5.1%	-4.7%	9.9%	-4.7%	9.8%	-3.4%	4.7%
(4) Credibility Weighted Trend	3.9%	-4.6%	8.5%	-4.6%	7.4%	-3.9%	4.2%

- (1) Based on 5 yr exponential regression of MA USR data or Statewide Average Weekly Wage data from Department of Unemployment Assistance
- (2) Based on the goodness of fit of the regression as measured by the confidence interval around the projected point.
- (3) Complements from broader or longer data series
  - o Severity – 5 yr exponential regression of CW data
  - o Frequency – 15 yr exponential regression of MA data
  - o Wage – 15 yr exponential regression of MA SAWW data
- (4) = [ (1) x (2) ] + { (3) x [1.0 – (2)] }

CW data series derived from NCCI Annual Statistical Bulletin.



# Expenses

M.G.L. Chapter 152, §52C requires that consideration be given to both countrywide and MA expense data when making rates.

Generally - average expense ratios based on MA data for 3 CYs (including DCC and AO)

Notable Exception – “Frictional Reinsurance Expense”

- Estimate using CW reinsurance underwriting expenses from AM Best Aggregates & Averages reflective of an offset for estimated ceding commissions
- Filed for 1% load in 2005, 2007 and 2008 (yet to be litigated)



# Profit

## IRR Model

Simply solve for a profit load such that the net present value for insurance related cash flows, including investor capital, equals zero when discounted at the weighted average cost of capital.

- MA Commissioner approved the use of the IRR Model in her decision on 2003 rates.
- IRR Model replaced the Myers-Cohn Model



# Weighted Average Cost of Capital

$$WACC = (w_e \times CC_e) + (w_d \times CC_d)$$

$w_e$  Equity Capital Weight

$w_d$  Debt Capital Weight

$CC_e$  Cost of Equity Capital

$CC_d$  Cost of Debt Capital

## Cost of Equity Capital

DCF:  $CC_e = (D_1/P_0) + g$

CAPM:  $CC_e = r_f + \beta (r_m - r_f)$

WCRIB is exploring another approach the Fama-French 3 Factor model ("FF3F")

$$CC_e = r_f + \beta_1 (r_m - r_f) + \beta_2 \text{SMB} + \beta_3 \text{HML}$$

## Cost of Debt

$$CC_d = \text{LT Interest} / \text{LT Debt}$$

Note that when we determine the weights for debt capital versus equity capital, preferred stock is thought of as debt.



# After Tax Return on Invested Assets

Simple enough – just take a weighted avg of after-tax returns by asset class

## Issue: After-Tax Rates of Return

- Tax Rate on Equities – when are capital gains realized.

## Bigger Issue: Asset Class Weights

- Distribution of bonds by maturity



# Bond Maturity Issue

12/31/98 - ABC Insurance buys bond with 10 years to maturity

12/31/07 - Bond has 1 year left to maturity



1 Yr Bonds



10 Yr Bonds



# Rob's General Comments on Bureau Ratemaking

- Don't walk around the block to scratch your elbow (aka simplify).
- Pursue methods that result in unbiased regulatory outcomes.
- Try to maintain some consistency in methods.
- Remember the process is political.



WCRIB filed for a rate increase of 2.3% (exclusive of a +3% impact on guaranty fund load) with a proposed effective date of September 1, 2008.

Public hearing is scheduled for April 3, 2008.

Filing updates available at [www.wcribma.org](http://www.wcribma.org).



# Workers' Compensation in the Bay State

# WAKE UP

## It's Over

