

**OPINION, FINDINGS AND
DECISION ON
2005 PRIVATE PASSENGER
AUTOMOBILE INSURANCE RATES**

December 15, 2004

**Docket Nos. R2004-11
R2004-12
R2004-13**

APPEARANCES

For the Automobile Insurers Bureau of Massachusetts:

Michael B. Meyer, Esq.
Catherine J. Keuthen, Esq.
Meyer, Connolly, Sloman & MacDonald
12 Post Office Square
Boston, Massachusetts 02109

For the Attorney General:

Peter Leight, Esq.
Glenn Kaplan, Esq.
Tom O'Brien, Esq.
Susan Flanagan-Cahill, Esq.
Hilary Hershman, Esq.
Pamela Meister, Esq.
Monica Brookman, Esq.
Office of the Attorney General
One Ashburton Place
Boston, Massachusetts 02108

For the State Rating Bureau:

Norma J. Brettell, Esq.
Thomas F. McCall, Jr., Esq.
Elizabeth Brodeur, Esq.
T. Jane Gabriel, Esq.
Division of Insurance
One South Station
Boston, Massachusetts 02110

For the Massachusetts Association of Insurance Agents:

James K. Brown, Esq.
Pat A. Cerundolo, Esq.
Foley, Hoag & Eliot
155 Seaport Boulevard
Boston, Massachusetts 02210

I. INTRODUCTION

A. BACKGROUND AND PROCEDURAL HISTORY

This decision fixes and establishes private passenger motor vehicle insurance premiums for policies written during calendar year 2005. Under G. L. c. 175, §113B and c. 175E, §5, the Commissioner of Insurance (“Commissioner”) shall fix and establish motor vehicle insurance rates if she determines, after investigation and public hearing, that “with respect to any territory or to any kind, subdivision, or class of insurance, competition is either (i) insufficient to assure that rates will not be excessive, or (ii) so conducted as to be destructive of competition or detrimental to the solvency of insurers.” The Division of Insurance (“Division”) held a public hearing in Boston on June 22, 2004. On July 23, the Commissioner determined that competition, if implemented in 2005, would be insufficient to assure that rates would not be excessive, and might be so conducted as to be destructive of competition. Therefore, she renewed the fix-and-establish rate setting procedure for the 2005 rates.

In order to address the many issues in the rate setting process, and to utilize the most recent available and credible data, the rate setting proceeding is divided into several parts. On June 24, 2004, the Commissioner issued a notice of hearing establishing three separate dockets, as follows: *Cost Containment and Fraudulent Claims*, Docket No. R2004-11 (“Cost Containment”); *Underwriting Profits*, Docket No. R2004-12 (“Underwriting Profits”); and *Main Rate*, Docket No. R2004-13 (“Main Rate”). The notice invited interested parties to participate in these proceedings, and scheduled a public comment hearing at the Division for August 31, 2004.

Parties to all these proceedings were the Automobile Insurers Bureau of Massachusetts (“AIB”), represented by Michael B. Meyer, Esq., and Catherine J. Keuthen, Esq.; the State Rating Bureau (“SRB”), represented by Norma J. Brettell, Esq., Thomas F. McCall, Jr., Esq., Elizabeth Brodeur, Esq. and T. Jane Gabriel, Esq.; and the Attorney General (“AG”), represented by Peter Leight, Esq., Glenn Kaplan, Esq., Tom O’Brien, Esq., Susan Flanagan-Cahill, Esq., Hilary Hershman, Esq., Pamela Meister, Esq., and Monica Brookman, Esq. The Massachusetts Association of Insurance Agents (“MAIA”), represented by James K. Brown, Esq., and Pat A. Cerundolo, Esq., petitioned to intervene

in the Main Rate case on behalf of its members. The Massachusetts Motorcycle Association (“MMA”), represented by Joseph S. Provanzano, Esq. filed petitions to intervene or to participate in the Main Rate case.

Cost Containment and Fraudulent Claims Payment

The AIB submitted its filing on cost containment and fraudulent claims payment on July 13, 2004. A prehearing conference occurred on July 22. Susan G. Anderson, Esq., Jean F. Farrington, Esq. and Stephen M. Sumner, Esq. presided over this proceeding. The AIB’s witness was cross-examined on August 11. On August 23 and 24, seven witnesses testified on behalf of six insurance companies. The AG made a filing on September 10, and his witness testified on September 20. The SRB made no filing on Cost Containment. On October 13, the parties to this proceeding submitted a stipulation, in which they agreed that the Commissioner shall adjust 2005 rates by an adjustment of –0.375 percent. The adjustment is to be implemented by solving for specified percentages in basic limits bodily injury coverage (“A-1/B”) loss pure premium and in the personal injury protection (“A-2”) loss pure premium, respectively, that will in the aggregate have the effect of making the overall 2005 rates, as shown in the final decision Form 110, 0.375 percent lower than they would be otherwise. The stipulation was approved by the Commissioner and hearing officer Farrington on October 15, 2004.

Underwriting Profits

The AIB submitted its filing on underwriting profits on July 9, 2004. A prehearing conference occurred on July 22. Jean F. Farrington, Esq. presided over this matter. Cross-examination of the AIB’s witnesses took place on August 30 and 31. The AG and the SRB submitted their advisory filings on September 17. Cross-examination of the AG’s witness took place on September 30 and of the SRB’s witnesses on October 1 and October 5. The AIB made a rebuttal filing on October 15, and its witnesses were cross-examined on October 22. The AG and the SRB submitted surrebuttal filings on October 29. On November 2, the AIB moved to strike portions of the AG’s filing. Cross-examination of their witnesses took place on November 5. Briefs were filed on November 22.

Main Rate

The Main Rate proceeding addresses losses; expenses, including those related to agents' commissions; and several miscellaneous issues. Susan G. Anderson, Esq. and Jean F. Farrington, Esq. presided over this proceeding. By letters dated July 14, 2004, the MMA and Paul Cote, a member of the organization, filed petitions to intervene or to participate in this proceeding. The AIB submitted its recommendations for the loss and expense components on August 16. On August 23, the MMA filed a Renewed Petition to Intervene and, on August 30, it filed a Supplemental Petition to Intervene in this matter. MAIA filed a petition to intervene, together with its filing, on August 24. A prehearing conference was held on August 31. On September 21, MAIA's petition to intervene was allowed, and cross-examination of its witness took place. The AIB's witnesses were cross-examined on September 13 and 14. The AG submitted his advisory filing on September 29 and the SRB made its filing on all issues other than 100K issues on September 30. The SRB's 100K filing was submitted on October 4. Cross-examination of the SRB's witnesses took place on October 7 and 8 and of the AG's witnesses on October 12 and 13. The AIB did not submit a rebuttal filing, and briefs on all issues other than agent commissions were submitted on October 29. On November 12, an order issued denying the MMA's petition to intervene, but allowing it to file a post-hearing memorandum.

MAIA submitted its rebuttal filing on October 22, and its witness was cross-examined on October 27. The SRB made a surrebuttal filing on November 2, and its witnesses were cross-examined on November 4. The AG did not make a surrebuttal filing in this proceeding. The AIB submitted miscellaneous filings on the SDIP reconciliation and the insolvency assessment on November 1. Replacement pages to those filings were submitted on November 4.

B. MISCELLANEOUS ISSUES

1. Seat Belt Usage

Chapter 387 of the Acts of 1993 requires the Commissioner, in setting rates, to consider the extent to which Massachusetts residents wear seat belts, as reported in an annual survey of seat belt use conducted by the Governor's Highway Safety Bureau. As part of the proceeding to fix and establish private passenger rates for 2004, a seat belt study

dated October 17, 2003, was filed in the record. *See, Decision on 2004 Private Passenger Insurance Rates*, Docket No. R2003-17, Ex. 32. That survey reflected an increase in seat belt usage, but continued to show that such usage in Massachusetts is below the national average. By letter dated November 17, 2004, the AIB stated that the 2003 Seat Belt Survey is the most recent of which it is aware. We concluded last year that the seat belt survey results demonstrated that the statute's requirements for a specific rate adjustment had not been met, and therefore made no specific adjustment. We noted, however, that in accordance with the statutory mandate, the survey results would be considered as a criterion in setting rates on bodily injury coverages, and as additional support for the specific decisions made on those rates. For the same reasons this year, we will again make no adjustment to the 2005 rates based on seat belt use in Massachusetts.

II. MAIN RATE

The Main Rate portion of this proceeding addresses losses and expenses. The contested issues this year include: loss development for the basic bodily injury coverages, otherwise referred to as "A1/B", loss trending; company expenses; inclusion of contingent and override commissions in the rates; calculation of increased limits factors, and class/territorial relativities, as well as the commission expense pure premium.

A. LOSSES

1. Loss Pure Premium and Basic Limits Loss Development Factors

Sections 100A and 100B of the AIB's advisory filing address calculation of the loss pure premium for Accident Year ("AY") 2003 and calculation of the basic limits loss development factors. The purpose of these sections is to estimate ultimate losses for 2003 that will then be trended forward to 2005. The estimate of loss pure premium includes both claim costs and allocated loss adjustment expenses ("ALAE"). Ratesetting relies on loss data from previous accident years. Because the number of claims and the final value of each claim that is submitted in a given policy year may not be known for years to come, that final value must be estimated using a loss development methodology. Calculation of the loss pure premium for the AY 2003 provides the starting point from which ultimate losses will be developed. Loss development itself involves the review of loss reports at

different reporting periods in order to determine changes from one report to the next. See, e.g., *Decision on 1999 Rates* at 7-8 (describing loss report layout and loss development). At issue this year is the loss development factor (“LDF”) that the Commissioner should use for coverages A-1/B.

a. Loss Pure Premium

As a first step in loss development, the pure premium for the A1/B coverages must be established. That pure premium is based on industrywide data on reported losses and case reserves. This year the AIB, in its estimate of loss pure premium for 2003, adjusted the value of the Safety Insurance Company (“Safety”) accident year 2003 reported losses by adding \$28 million to it. It based its adjustment on a comparison of Safety’s 2001 and 2002 average claim costs at first report to its 2003 average claim costs. The AIB asserts that this adjustment reflects a change in Safety’s accounting/reserving practices for initial case reserves for AY 2003, that reduced its AY 2003 estimated losses. The AIB, characterizing this as an accounting change rather than a “real” improvement to losses, concluded that an adjustment was appropriate.

In support of its approach, the AIB argues that the SRB found its ultimate AY loss and ALAE estimates to be actuarially reasonable and justified, and agreed that adjusting base losses is a reasonable technique. It further notes that Ms. Blank testified that if adjustments were not made for individual reserving practices, the rates would be inadequate. Further, it notes, the AG’s witness, Ms. Gotham, agreed that extreme changes in reserving practices would support adjustments to estimates of loss pure premium or to LDFs and that it might be appropriate, for purposes of loss development factors, to break out the largest three to five companies. The AIB argues that the AG, although he objects to the AIB’s adjustment to Safety’s reported losses, produced no calculations to support his proposed estimates of loss pure premiums, and that the basis for his loss pure premium recommendations is not in the record. In addition, it asserts, the AG did not adjust loss pure premium for the uninsured motorist (“U-1”) coverage to reflect Safety’s reserving practices, although failure to do so is inconsistent with an adjustment to A1-B.

The SRB concludes that the AIB’s estimates of ultimate accident year losses and allocated loss adjustment expenses (“ALAE”), including its adjustment to the data to

reflect individual company case reserving practices, are justifiable and reasonable. The SRB reviewed the ultimate loss reconciliation process for the basic bodily injury coverage, A-1/B, A-2, and U-1, because these are the coverages for which case reserving occurs at a significant level, and performed a reconciliation analysis to assess whether the AIB's estimates were actuarially reasonable. Its witness, Cara Blank, FCAS, MAAA, concluded that the AIB's A-1/B LDF of 0.9945, A-2 LDF of 0.5845 and U-1 LDF of 1.0566, in light of the significant variations between unadjusted ultimate paid and incurred loss estimates, appeared reasonable.

The AG argues that the loss development methodology adopted in the Decision on 2004 Private Passenger Rates "opened a Pandora's box" by relying on uncreditable loss development and unsubstantiated adjustments to carrier-reported losses. He asserts that the adjustment to Safety's reported losses is not justified, is unsupported by documents from the company, and will increase complexity in ratemaking without improving precision. The AG points to testimony of the AIB's witness, William Scully, MAAA, FCAS identifying potential problems with company-specific adjustments and stating a general preference for an industry-wide basis, in the hope that any data anomalies would wash out in the overall review. The AG argues, further, that the AIB's adjustment to Safety's reported losses is unreasonable because it is based on the belief that 2003 claim severity is equal to the 2001-2002 average severity, a belief based on a statement by Safety representatives that it had changed the way it set case reserves for bodily injury claims in 2003. He notes that the AIB did not file, and claimed that it did not possess, any documents from Safety explaining the need for, or reasonableness of, this adjustment.

The AG argues that the AIB's calculation effectively ignores Safety's 2003 reported claim severity data and sets it equal to the average of the 2001-2002 severity. The result of that calculation is a 25.59 percent increase in Safety's 2003 claim severity. The AG criticizes the AIB's decision to adjust the Safety data for the entire amount of this difference, noting that Ms. Blank testified that a ten percent fluctuation is reasonable and would be accepted without the need for an adjustment. Further, the AG points out, Ms. Blank agreed that some portion of the difference in claim reserves could be related to items such as inflation, claim composition, and speed of payment, which are unrelated to reserving practices. The AG concludes that loss pure premium for the A1-B coverage

should not be adjusted on the basis of any individual carrier practices. He recommends a 2003 A1-B loss pure premium value of \$187.58.

b. Loss Development Factors

The AIB derives its loss development factors by averaging the current and the prior year age-to-age factors, giving fifty percent weight to each. For the A1-B (basic limits bodily injury), A2 (PIP) and U-1 (uninsured motorist) LDFs, the AIB adjusted the ultimate LDFs to account for the increasing market share of the Commerce Insurance Company (“Commerce.”). It states that its recommended LDFs were developed this year using the methodology proposed by the SRB in the filing on 2004 rates, a process that reweights the LDFs for individual insurers to reflect changes in market share resulting from industry consolidation and acknowledged differences in company reserving practices. Specifically, the AIB notes, the methodology recognizes Commerce’s changing market share differences between its reserving practices and those of the industry as a whole. The AIB argues that it applied the criteria articulated in the *Decision on 2004 Private Passenger Rates* to determine whether separate development is appropriate for an insurer, but did not adjust Safety’s development factor because it had already adjusted its losses.

Analysis and Discussion

Neither the SRB nor the AG objects to estimating loss development factors based on the average of the most recent two years. However, the AG opposes both the methodology adopted in the *Decision on 2004 Private Passenger Rates* for developing factors based, in part, on consideration of individual company data and the \$28 million adjustment that the AIB made to the Safety accident year 2003 reported losses. The *Decision on 2004 Rates* adopted a methodology proposed by the SRB that arose from an inquiry into the effect of recent consolidation in the market on relative case reserve adequacy. The SRB, instead of looking only at values for the industry as a whole, looked at accident year histories for both the industry as a whole and for individual companies, and concluded that consolidation has affected relative case reserve adequacy in recent years. It noted that the principal reason for its results is the increase in the total market share of the Commerce Insurance Company. The SRB’s approach was to add the 50/50 weighted ultimate loss levels for each company, as calculated in the Commissioner’s

ratemaking database, and to estimate the all-industry first report to ultimate factor as the ratio of the totaled “ultimate” to the total first report losses. The factors underlying the decision to adopt a methodology that balances individual company and industry-wide data have not changed, and we are not persuaded to reverse our approval of that methodology.

At the same time, we are cognizant of the concern that company-specific adjustments should be approached cautiously. While it may be appropriate to adjust individual company loss reports to account for extreme changes in reserving practices, the record must support the existence of such changes. We note Mr. Scully’s testimony that individual company data anomalies may balance each other out. Ms. Blank also testified that a ten percent fluctuation in reserves is reasonable and that differences in claim reserves could be related to items such as inflation that are unrelated to reserving practices. For that reason, we find that an adjustment should be made only on sound evidence that a significant reserving change that is outside normal bounds has occurred and that the adjustment will more accurately reflect losses, thereby ensuring that the rates are fair and reasonable. The AIB did not provide evidence or documentation to support the need for, or reasonableness of, an adjustment to Safety’s losses that exceeds changes that fall within a normal range. We will therefore reject its proposal to add \$28 million to Safety’s reported losses, but will instead allow an adjustment in the amount that represents a greater than ten percent change in Safety’s reported losses between 2001/2002 and 2003¹.

c. Loss Pure Premium Trend Factors

Loss trending is the process by which loss pure premiums developed from the latest experience period are trended forward to the average accident date in policy year 2005. For loss trending purposes, coverages may be grouped together or considered separately. There are five specific coverages at issue this year for loss trending: A-1/B, Bodily Injury; A-2, PIP; Property Damage Liability (“PDL”); Collision; and Comprehensive. All parties this year propose different loss trends for the A-1/B and A-2 coverages. The AIB and the AG’s recommendations differ for the PDL, collision, and comprehensive coverages. The AIB’s trend recommendations for medical payments (“MedPay”) and uninsured motorist

¹ This adjustment will result in a loss pure premium for A1/B that is lower than the AIB’s recommendation but higher than the value recommended by the AG.

coverage (“U-1”) are not disputed by any other party. I will therefore approve a 0.852 trend factor for MedPay and a 0.976 trend factor for U-1.²

The AIB generally argues that its loss trending recommendations are reasonable, unbiased and based on clearly stated and substantial evidentiary foundations. It asserts that the other parties’ recommendations are based on less adequate foundations, are self-contradictory, and are too low. The AIB urges rejection of the AG’s trend factor recommendations for PIP, PDL, collision, and comprehensive on the ground that they are biased low by his focus on snowfall. The AIB argues that the AG’s snowfall adjustments are biased, asserting that they reduced all losses for both 2002 and 2003 by round numbers that were based solely on judgment, rather than actuarial data. It contends that none of the AG’s adjustments are based on calculations, and that ratemaking data do not exist that indicates that losses occur because of snow and ice or for some other reason. In addition, it states, the AG’s adjustments to the 2002 and 2003 losses are made for snowfall, which was within one standard deviation of the mean snowfall.

The AIB further objects to the AG’s snowfall adjustment because he made no adjustments to loss data for other years, such as the winter of 2001-2002, in which snowfall was lower than average. The AIB argues, as well, that the AG’s adjustments are inconsistent. He adjusted PIP losses for snowfall in 2002, but not in 2003, and adjusted comprehensive losses for 2003, and not for 2002. Further, it argues, the AG adjusted losses for all coverages, even though his witness testified that bodily injury and PIP losses would be less affected by snowfall. It points out that the AG’s largest adjustment, \$29 million, was to AY 2002 bodily injury losses and that, for the same accident year, he adjusted PIP losses downward by \$12 million. At the same time, the AIB notes, the AG proposed a smaller \$9 million adjustment to PDL losses and a \$20 million adjustment for collision losses for AY 2002.

The AG argues that, in evaluating and selecting loss trends, the Commissioner should consider unusually good and bad winter weather. Both the SRB and the AIB, he

² I note that for U-1 coverage, the AIB developed its trend using 2003 losses it had adjusted due to the Safety Insurance Company reserving change. Although I have allowed a partial adjustment for Safety’s reported losses above, I adopt the AIB’s recommended trend factor for U-1 coverage. No party contested the recommendation.

states, recognize that weather can affect claims activity. The AG asserts that the winter of 2002-2003 was unusually severe, and that snowfall was higher than any year since 1995-1996. He notes that in the *Decision on 1999 Private Passenger Rates*, Docket Nos. R98-40, R98-41, R98-42, the Commissioner, in determining loss trend factors for A-1/B, PIP, physical damage and uninsured motorist coverages, used a dummy variable³ to account for the 1996 experience. He asserts that, in determining loss trends based on experience through 2003, she should consider the upward pressure on losses resulting from higher snowfall in the winter of 2002-2003. The parties' arguments in support of trend factors for specific coverages will be addressed in detail below.

i. Weather-Related Adjustments

The AG's filing includes adjusted loss data for A1/B, PIP, PDL, Collision, and Comprehensive coverages for what he perceived to be an unusually high snowfall total for the 2002-2003 winter. He performed linear regressions on both an unadjusted and snow adjusted basis, but did not use the adjusted data in the trend calculations which form the basis of his actual recommendations. Although the AG does not rely on his snow adjusted data, he includes the adjusted data for the purpose of giving credence to his recommendations, and asserts in this brief that the "Commissioner should consider unusually high or low snowfall amounts as a judgmental factor when selecting among different loss trends." Therefore, as a preliminary matter, I address the AG's argument on weather-related adjustments.

Although the purpose of applying a linear regression is to smooth out variations in the data, an extreme variation in data may need to be independently adjusted to prevent an inaccurate projection. For example, in the *Decision on 1999 Rates*, the Commissioner acknowledged that snowfall likely had some effect on 1996 losses, and used a dummy variable to account for the unusual nature of the 1996 losses for certain coverages. *Decision on 1999 Rates* at 26. In reaching this decision, the Commissioner relied upon the SRB and AG's analyses, which demonstrated how the 1996 data point was significantly further from the fitted line than all other points.

³ A dummy variable is used to account for the effects of an independent variable which cannot be quantified. *Decision on 1996 Rates*, Docket Nos. R95-12, 13, 14, 15 at 6, n. 7.

Snowfall is not unusual in Massachusetts, and poor weather conditions can contribute to increased accident frequencies. However, the snow adjustments that the AG submitted this year are not sufficiently supported. The data underlying his adjustments are geographically restricted to Boston, rather than statewide, and are then judgmentally converted from annual snow data to quarterly snowfall amounts. Moreover, snowfall does not always result in increased losses. Numerous factors such as the amount of snow, the degree of icing, the day of the week and the time of day on which the snow falls all work together to affect the actual accident rate. The AG does not demonstrate that the 2002-2003 winter was an extreme variation, such as the one in 1996, thereby requiring adjustment. For example, in regard to PDL and Collision, the pure premium changes for 2002 and 2003 are not especially large or out of line with the changes in prior years. Specifically, data in the AIB's filing show that the Collision pure premium change from the previous year is 0.60 percent for 2002 and 0.83 percent for 2003.⁴ In addition, the data show that the PDL pure premium change from the previous year is 3.55 percent for 2002 and 2.96 percent for 2003.⁵ These values stand in sharp contrast to the observed 16.72 percent pure premium change for Collision and the 11.53 percent pure premium change for PDL for 1996. Ultimately, the AG did not rely on the snowfall data to make his recommendations, he used the unadjusted data. I decline to make any trend adjustments based on the AG's snow adjusted data.

ii. A-1/B (Basic Limits Bodily Injury)

All parties base their recommendations for the A-1/B loss trend on linear regressions. The AIB bases its recommended 1.0740 trend factor for these coverages on a five-year linear regression. The AG, using a five-year regression methodology, recommends a 1.0730 factor, while the SRB recommends a factor of 1.0327, based on a six-year linear regression. The AIB and the AG arrive at virtually identical results; the difference between them is explained by the AIB's adjustment to the Safety loss pure premium.

⁴ See, Ex 2, page 115.

⁵ Ex 2, page 111.

The AIB argues that its five-year regression has the best R-squared⁶ value of four, five, and six-year regressions. It notes that its recommendation is further supported by the last four years of changes that show a consistent pattern of increasing frequency and decreasing severity. The SRB argues that its recommendation is the most reasonable because the six-year regression has the lowest Mean Squared Error (“MSE”)⁷, when considered over the longer nine-year history. Its witness, Ms. Blank, testified that she chose not to limit her analysis to four or five years of data, because these pure premiums tend to exhibit cyclical behavior. She stated that it is a reasonable probability that the current upward cycle will level off or decrease, noting that last year, in examining the 2002 data, she thought the trend would be higher than it turned out to be. The SRB acknowledges that its six-year regression analysis has a lower R-square value than either the four or five-year regressions, but asserts that it is not appropriate to overly rely on the R-square factor in selecting a methodology. It notes Ms. Blank’s testimony that the R-square measures the true linearity of a trend, but that not all trends are linear. The SRB considers that the A-1/B trend is cyclical rather than linear.

The AG recommends a loss trend factor of 1.0730 based on a five-year linear regression using data from 1999 through 2003. He notes that his factor is similar to the AIB’s, but that the latter’s is based on an unreasonable adjustment to the 2003 losses.

I am persuaded that the SRB’s methodology for calculating a trend factor for A-1/B will produce the most reasonable projection. As noted in the *Decision on 2004 Rates*, a six-year time period has been, historically, a well-accepted standard in these cases, and is a good time period from which to start a regression analysis. This finding is consistent with the finding in the *Decision on 2004 Rates* on this same issue. Ms. Blank offered credible testimony that it is preferable this year to use a six-point regression rather than a five-point regression for A-1/B coverage. In particular, she explained that because this coverage tends to be cyclical, it was less preferable to use a five-point linear regression when the fifth oldest year is the lowest valued pure premium in the entire series, and the last pure premium is the highest.

⁶ R-squared, also known as the coefficient of determination (R^2), represents the proportion of variation in the dependent variable that has been explained or accounted for by the regression line.

⁷ In basic terms, the MSE is the average of the “squared difference of the fitted value from the actual value.” T6:13.

Although the five-point regression has a higher R-squared value than the six-point regression, the R square factor merely tells you how much of a trend is truly linear. For this coverage, a purely upward trend is not observed. Since 1998, the changes in pure premium have had two decreases followed by four increases. Specifically, from 1998 to 2003, the values of the A-1/B pure premium were, from oldest to most recent, \$180.68, \$173.04, \$176.14, \$178.77, \$191.61, and \$192.25. Similar to last year, I am persuaded that the results of another goodness-of-fit measure, the MSE test, should also be strongly considered when the historical data shows a cyclical tendency.⁸ *See Decision on 2004 Rates* at 102. Because the MSE test squares the difference between the values, or error, it penalizes a forecast more for deviations that are extreme. Under the MSE test, a large mean squared error indicates that the line is not a good fit. For this coverage, the six-point regression has a lower MSE than the five-point regression when considered over the longer term. I do not find persuasive the AIB's argument that the SRB's use of a nine-year time period for the MSE test is illogical. The use of a nine-year time period is a reasonable approach to obtaining a longer-term perspective of the way in which this coverage, which tends to be cyclical, has behaved.

For these reasons, I am persuaded that the SRB's methodology will produce a more accurate result than the AG and AIB's methodologies. Because of the change ordered to the calculation of the loss pure premium, its methodology shall be applied to a data set that includes that revised value.

iii. A-2 (PIP)

The AIB recommends a 1.0810 trend factor, based on a six-year linear regression, using data from 1998 through 2003, while the SRB recommends 1.0349 factor for this coverage, based on a four-year linear regression. The AG, based on a review of recent historical experience, recommends a factor of 1.000, or unity, in effect resulting in no change from the pure premium for 2003.

The AIB argues that its six-year regression has approximately the same MSE measure as the SRB's four-year trend but has a better R-squared value. It asserts that

⁸ A goodness-of-fit measure checks on whether your estimates are reasonable or highly unlikely, given an assumed regression model.

although Ms. Blank testified that she would rely on both MSE and R-squared measures to evaluate the regression results, she failed to do so. If the MSE measure of the AIB and the SRB PIP regression results is essentially tied, the AIB argues, the better R-squared value should be the deciding factor. The AIB argues that the AG's judgmental PIP selection produces a lower result than the result of any of the regressions the AG performed, including those based on the snowfall adjustments.

The SRB argues that its recommendation has the lowest MSE and the best fit of the regressions it performed. As with its A1/B trend, the SRB acknowledges that its selection has the lowest R-squared value of the three regressions, but asserts that, because the R-square factor only explains how much of a trend is purely linear, it is error to overly rely on it. Ms. Blank pointed out that not all trends are linear, and observed that none of the R-square values provided a good measure of fit. The SRB notes that Mr. Scully testified that the R-squared value generated by the AIB's six-year regression would not be considered a good fit. Therefore, the SRB asserts, it is reasonable to look at other statistical measures of goodness-of-fit. The SRB urges rejection of the AG's recommendation, arguing that it is not reasonable. It states that his witness, Stacey Gotham, MAAA, FCAS, performed two sets of regressions over three, four, five, and six-year periods, one using unadjusted data and one adjusting the data for snowfall. The SRB argues that the AG's judgmental selection seems result-oriented, because it is lower than the results generated by Ms. Gotham's regressions and does not consider the goodness-of-fit of those regressions, as measured by the MSE test.

The AG argues that none of the regressions performed by the AIB or the SRB generate a reasonable statistical measure of confidence and that, because pure premiums for A-2 have recently declined, the 2005 pure premium should be set at the 2003 level of \$48.19. The AG's analysis is judgmental. He points out that Mr. Scully acknowledged that the R-squared value for the AIB's regression did not show a good fit. Further, the AG argues, the AIB recommends a positive trend which is contrary to the 5.06 percent decrease in PIP pure premium between 2002 and 2003. In the last four reported periods, the AG notes, A-2 pure premium has generally been flat; the increase between 2001 and 2002 was almost entirely reversed in 2003. That historical experience, the AG argues, demonstrates that the AIB's trend is unreasonable.

The trend factor for A-2 coverage is challenging to select because during the past decade the pure premium has exhibited some random variation. Unlike the observed A-1/B pure premium changes, which had two decreases followed by four increases, the A-2 pure premium values show changes going from negative to positive back to negative. Specifically, from 1998 to 2003, the values of the A-2 pure premium were, from oldest to most recent, \$45.64, \$44.23, \$48.17, \$48.18, \$50.76, and \$48.19. Not surprisingly, all parties agree that regressions on the PIP data do not produce high R-squared values. In particular, Mr. Scully testified that although the six-year regression has a better fitting R squared than other regressions, it was not a “good fitting R squared”. I agree with the AG that the historical experience, including last year’s reduction, does not support the AIB’s recommended loss pure premium trend factor, resulting in a 2005 projected pure premium of \$52.11. However, I reject the AG’s contention that no regression provides a reasonable statistical measure of confidence, and that I should adopt his recommendation based on judgment.

As discussed above, the R-squared value is just one goodness-of-fit measure. The four-year regression has a lower MSE than the five and six-year regressions, as analyzed by the SRB over the longer term. The MSE test indicates that the four-year regression is a good measure of fit. As stated above, I reject the AIB’s argument that the SRB’s use of a nine-year time period for the MSE test is illogical. The use of a nine-year time period was reasonable in order to get a longer-term perspective of how a coverage, which tends to be cyclical, has behaved. Moreover, this coverage demonstrates cyclical behavior, and selecting a regression that, among other things, has a lower MSE, is consistent with our decision on this coverage in the *Decision on 2004 Rates*. In addition, the recent experience for this coverage supports the use of a four-year regression. It is reasonable to use a shorter regression if the older values are less responsive to recent events, and are likely to forecast the future inaccurately. Unlike A-1/B coverage, A-2 had a reduction in pure premium in 2003, and the A-2 pure premium values for the most recent four years are generally similar in value, but seemingly disparate from the lower two oldest values.

For these reasons, I am persuaded that this year the SRB’s methodology, using the four-year regression, will be more responsive to recent history, and produce the most

accurate result for the A-2 coverage and therefore adopt the SRB's recommended a trend factor of 1.0349 for A-2 coverage.

iv. Property Damage Liability

The AIB recommends a PDL pure premium loss trend of 1.094 based on a six-year linear regression using 1998 through 2003 data. It argues that five or six-year trend periods have traditionally been used for this coverage, because it "behaves well" according to regression statistics. Further, the AIB asserts, longer time periods tend to provide more stable trend projections than shorter periods. The AIB argues that the AG's selected regression results should not be adopted because they violate the goodness-of-fit standards enunciated by the AG in the proceeding to set 2004 rates. That standard utilized the F-statistic⁹ as a measure of the goodness-of-fit. The AIB argues that this year the AG does not mention the F-statistic as a measure although, if applied to the AIB and the AG regression results this year, it would show a better significance for the AIB's six-year regression. Further, the AIB asserts, the AG's loss trend recommendation contradicts his testimony. It points out that the AG argues that AY 2002 and 2003 are distorted by snowfall, but then chooses a shorter four-year trend period without adjustment, rather than the more stable six-year trend period recommended by the AIB. The AIB argues that it is irrational to pick shorter time periods, in order to be more responsive to recent events, if you also believe that the most recent data is anomalous.

The AG recommends a trend of 1.083 based on a four-year linear regression, using data from 2000 through 2003. The AG notes that the R-squared value for the four-year regression is slightly better than for the six-year regression. He also urges the Commissioner to consider the effects of weather and to select a trend that reflects the statistically severe winter of 2002-2003. The AG argues that if a weather-related adjustment had been made, the linear regressions for PDL would all be below the AIB's recommendation. Based on historical experience, the AG argues, the AIB's trend is unreasonable. The SRB makes no recommendation for this coverage.

Unlike the cyclical trends observed for the A-1/B and A-2 coverages, the historical data show that the PDL pure premium has steadily increased since 1997. In reviewing

⁹ The F statistic is the ratio of the explained variance to the unexplained variance.

different goodness-of-fit measures, including the almost identical high R-squared statistics, Ms. Gotham contends that the four-year regression is preferable to the six-year regression for PDL, but concedes that the six-year regression also provides an adequate fit. The regression period selected for this coverage should be responsive to recent events but also long enough to smooth out any out-of-the-ordinary data. The AG has asserted that the 2002-2003 winter was anomalous. In last year's *Decision on 2004 Rates*, a five-year regression was adopted to project 2004 pure premium for this coverage. I am not persuaded by the AG's arguments this year that the values provided by the four year projection are preferable this year to the six-year regression methodology. For the reasons stated above, I also decline to adjust the data in trend calculations to reflect certain weather conditions.

I therefore adopt the AIB's recommendation of a trend factor of 1.094 for PDL based on a six-year linear regression.

v. Collision and Limited Collision

The AIB recommends a 1.148 collision loss pure premium trend factor, using a six-year linear regression for 1998 through 2003. The factors that support this longer period approach to developing a trend factor are, it argues, identical for collision and PDL. As with the PDL recommendation, the AIB argues that the AG did not utilize the methodology he recommended last year to measure goodness-of-fit, the F-statistic, and that had he done so, the measure would have shown that the AIB's six-year regression produced a better result. The AIB also reiterates that it is unreasonable for the AG to recommend a four-year regression when he views the data for the two most recent years as anomalous. In such circumstances, the AIB argues, a six-year regression produces more stable results.

The AG recommends a 1.039 trend factor for these coverages, based on a four-year linear regression. The AG notes that he performed regression analyses using three, four, five and six years of data and that, even though the three-year regression had the highest R-square value, he selected the result of the four-year regression to increase stability. The AG asserts that if adjustments for the winter of 2002-2003 had been made, the three, four, five, and six-year linear regressions for Collision would all be below his recommendation.

In addition, the AG points out that on a national basis, over the last three years, Collision coverage has started to trend downward.¹⁰ The SRB made no trend recommendation for this coverage.

Over the past decade, Collision pure premiums have increased in Massachusetts, with large changes occurring between 1995-1996 and between 1999-2000. Mr. Scully testified that he found it reasonable to select a six-year regression methodology because it puts the last large increase into the experience, and that regression fit well. Although the R-squared value is better for the four-year regression than the six-year regression, as well as the five-year regression, these results are not unexpected when the six and five-year regressions include the large 1999-2000 change.

The rate of change for the Collision pure premium data is very different from that observed for PDL. While the PDL pure premium data consistently increases from year to year, the Collision pure premium data can be characterized by large rates of change in one year periods (1995-1996, 1999-2000) followed by very little change in pure premium over the next several years. In view of the historical experience in Massachusetts, I am persuaded that it is reasonable to include the last large increase in the experience period used to forecast the future because of the potential for another large change in this coverage. At the same time, however, for this coverage the incremental changes in pure premium are not constant, and the AG's recommended pure premium trend based on the most recent four years of experience is more responsive to the data after a large change has occurred.

After considering the patterns in the data, I believe the five-year regression provides the most appropriate weight to the large 1999-2000 change as well as the subsequent moderate changes. I, therefore, believe it is appropriate to select a trend factor of 1.12 for collision and limited collision coverages, based on a five-year regression.

vi. Comprehensive Coverage

The AIB recommends a trend of 1.049 for comprehensive coverage, based on judgment. Similar to last year, the AIB claims that the regression model does not perform

¹⁰ Variables, such as competition, make the trends observed on a national basis different from the trends that occur in the Massachusetts private passenger automobile insurance market.

well for comprehensive coverage due to large and sudden changes in glass claim frequency in the years 1996, 2001, and 2002. The AIB argues that Mr. Scully explained the basis for its recommendation: that of the last five pure premium changes, the largest increase cancelled out the later largest decrease. The remaining three changes averaged to a two percent per year trend for comprehensive, *i.e.*, a trend factor of 1.049.

The AG's recommendation is also based on judgment, a trend of 1.000 or unity. The AG argues that, based on historical experience, the AIB's proposed trend is unreasonable. With the exception of the data point for 2001, the AG points out, the comprehensive pure premium between 1996 and 2003 has ranged between \$81.73 and \$77.81; further, he asserts, it has actually declined from \$81.73 in 1996 to \$80.57 in 2003. In addition, the AG reiterates the AIB's contention that the 2001 large increase was cancelled out by the 2002 decline. The SRB made no recommendation for this coverage.

With regard to comprehensive coverage, it was noted in the *Decision on 2004 Rates* that "[a]ll parties agree that the 2001 data point was unusually large, and that the 2002 data point was equally significant in its decline from 2001." *Decision on 2004 Rates* at 108. Both the AG and SRB actuaries were in agreement that this extreme high followed by an extreme low continues to infuse some uncertainty as to how this coverage should be forecasted. Mr. Scully testified that he guessed that the intense scrutiny which was placed on the glass industry due to the large increase in glass claims caused the glass industry to curtail their aggressive marketing practices, and this is reflected by the 2002 reduction in claims. However, Mr. Scully pointed out that the 2003 point has rebounded, suggesting that the decrease in 2002 was not a sustainable improvement. Ms. Gotham testified that she felt a trend factor of 1.00 was appropriate because it was not clear whether it would trend upward or downward.

The evidence on this record supports the position of the AG and AIB that the unusual historical experience of Comprehensive coverage supports a judgmental selection of the loss pure premium trend factor for 2005. However, I am not persuaded that the past experience supports either the level of the AIB's recommended increase or the AG's unity recommendation. While the 2001 pure premium value is unusually high, the 2002 pure premium appears to be consistent with the remaining pure premium observations for all

years except 1995. I, therefore, temper their recommendations by averaging them, and judgmentally select a loss pure premium trend factor of 1.025 for comprehensive coverage.

B. COMPANY EXPENSES

1. THE AGENCY-COMPANY RULE

The “agency-company rule,” as it has been applied in recent years to develop company expense ratios, was established by the Commissioner in the *Decision on 1986 Rates*. See also *Decision on 2001 Rates*, at 34-35, for a discussion of the history and purpose of the rule. The rule uses an industry average for all companies, both direct writers and companies that sell through independent agents, to determine general expenses, taxes, licenses and fees, but uses the average of agency-only companies to determine “other acquisition” expenses. After determining expense ratios for each company, separately for liability and physical damage coverages, weighted averages based on market share are developed. Ultimately, a single value for the overall company expense ratio is developed from the weighted averages for liability and physical damage coverages.

The AIB followed the agency-company rule to develop company expense ratios this year. No party contests the AIB’s application of the rule, and it will be used to fix and establish 2005 rates.

2. The Outlier Adjustment Factor

The expense allowance included in the rates is based on the expenses reported by companies in response to an annual expense call. For companies that operate in Massachusetts and other states, expenses are allocated to Massachusetts based on the number of private passenger automobile insurance exposures in the Commonwealth.

For many years, the Commissioner applied an adjustment, known as the competition adjustment factor (“CAF”) to company expenses. The adjustment factor was based on the average expense ratios of companies below a certain percentile that were presumed to be the most efficient; expense data from the remaining companies were excluded for purposes of the CAF calculation. The CAF was instituted as a response to a wide variation in expenses among Massachusetts private passenger automobile insurers, which, for lack of a better explanation, was presumed to have resulted from inefficiency. It

was intended to ensure that only reasonable company expenses were passed on to policyholders.

In the proceeding to establish 2003 rates, the SRB proposed, as an alternative to the CAF, a standard deviation methodology for excluding unreasonable expenses. See *Decision on 2003 Rates* at 27-28. The SRB calculated the mean of company expense ratios, and then established a cut-off of two standard deviations on either side of the mean to identify outliers. The mean was then recalculated without considering expense data from the outliers.¹¹ The purpose of this adjustment was to eliminate any distortion the outliers had on the average company expense ratio.

The Commissioner did not explicitly adopt the SRB's outlier methodology in the *Decision on 2003 Rates*. However, she did adopt the SRB's recommended value for the adjustment, noting that its methodology provided "a reasonable first step toward revisiting the basis for adjusting the company expense pure premium to ensure that only reasonable expenses are included" in the rate. *Id.* at 32.

The SRB proposed a similar standard deviation method for setting the 2004 rates.¹² Based on the evidence in the record, the Commissioner adopted its recommendation, finding that "a two standard deviation cut-off point was an appropriate methodology ... that will ensure that only reasonable expenses are included in the rate." *Decision on 2004 Rates* at 120. To motivate companies to limit expenses, the Commissioner also excluded from the calculation only those companies whose expense ratios fell above the two standard deviation cut-off point.

For 2005 rates, the AIB and SRB applied the methodology adopted by the Commissioner in the 2004 rate decision. Both reached the same results: an overall company expense ratio of 7.38 percent (derived from liability and physical damage expense ratios of 7.15 percent and 7.77, respectively). Because the expense ratios fell

¹¹ Specifically, the SRB excluded data from one company whose expense ratio fell above the two standard deviation threshold and another whose expense ratio was close to the threshold and significantly higher than the next closest.

¹² The SRB's methodology was substantially similar to its proposal for 2003 rates, however, the methodology for 2004 rates added an adjustment to allow the Commissioner to "calculate the company expense ratios for non-agency companies using the *average* other acquisition ratio for agency companies," rather than the actual other acquisition ratio of non-agency companies. The revised methodology "eliminate[d] the risk of excluding non-agency company other acquisition expenses more than once, and tie[d] directly to the expense base generated by the agency company rule." *Decision on 2004 Rates* at 118.

within two standard deviations from the mean, both the AIB and the SRB applied an outlier adjustment factor of 1.00. The AG disputed the methodology adopted in the *Decision on 2004 Rates*, and recommended a standard deviation cut-off of 1 or 1.5 or the use of a .85 CAF under the former methodology. In the alternative, the AG proposed for the first time that the two standard deviation cut-off be applied separately for liability and physical damage coverage. His approach resulted in outlier adjustments of 1.00 for liability coverage and .90 for physical damage coverage.

a. Positions and Arguments of the Parties

The AG criticizes the two standard deviation methodology adopted in the *Decision on 2004 Rates*, and recommends a return to the former CAF methodology. He argues that the current methodology does not provide enough incentive for companies to reduce costs or address the unexplained variations in expenses for agency companies. The AG recommends that, if this methodology is retained, a more stringent standard, such as 1 or 1.5 standard deviations, be applied to determine outliers.

If the standard deviation methodology is maintained, however, the AG recommends that it be applied to expense ratios for liability and physical damage coverages separately. He notes that companies allocate expenses between these two types of coverage in their annual statements, and that the expense ratios are calculated separately for them. The AG questions why coverages are combined for the purpose of determining outliers, arguing that the combined coverage approach is of limited use because it accepts expenses that would be excluded if the two standard deviation methodology were applied separately based on coverage.

Based on his proposed methodology, the AG notes that only one carrier's physical damage expense information would be excluded. The carrier is Allmerica, which has a 19.31 percent expense ratio for physical damage as compared to the 3.38 percent expense ratio of Commerce Insurance Company for the same coverage. The AG acknowledges that Allmerica's expense data appear anomalous, but nonetheless finds it troubling that the current methodology does not identify Allmerica as an outlier.

The AG asserts that the failure to identify Allmerica as an outlier proves that the current methodology is inferior to the CAF in that it provides no incentive for companies to lower expenses. Moreover, he maintains, the continued application of the current

methodology may actually encourage lax expense controls and reporting. In support of this, the AG notes that some companies are incorrectly reporting expenses based on premiums, not on exposures. He urges the Commissioner to require strict compliance with the expense call requirements and exclude information that is inaccurate or allocated incorrectly.

The SRB argues that the AG's proposal to apply the standard deviation methodology separately to liability and physical damages coverages has never been used before in these proceedings. It maintains that the AG has not met his burden of demonstrating that the change in methodology is justified and that it will improve the ratemaking system. The SRB further characterizes the AG's approach as result-oriented, noting that the AG would have reached the same results as the SRB and the AIB if he had followed the industry-wide standard and made a single calculation involving combined coverages rather than devise a novel method of separate calculations for the two types of coverage.

The SRB notes that the AG's witness, Stacey C. Gotham, could not explain how, if the total of company expenses is reasonable, one subset could be unreasonable. It further comments that Ms. Gotham's approach appears to be based on the premise that there are significant errors in the expense call data. The SRB argues that even if that premise were true, the AG has not shown why such errors would necessarily mean that company expenses for physical damage coverages are excessive.

The AIB states that the AG's approach is neither reasonable nor consistent with the current methodology. It maintains that it is inappropriate to look at liability and physical damages expenses separately to determine outliers because expense ratios between companies can differ for many reasons. Because the application of the outlier methodology to the combined expense ratio produced no adjustment, the AIB contends that it would be illogical to require an adjustment based on a review of one subset of the expenses.

Citing the *Decision on 1999 rates*, at 47-52, the AIB points out that the current methodology is consistent with the former methodology for determining the CAF, which also combined liability and physical damage coverages to determine company expense.

The AIB suggests that the AG has provided no support for his position as to why coverage expenses should be separated to determine outliers.

b. Discussion and Analysis

It is unquestionable that accurate expense data is crucial to the rate-setting process. The AG's unsubstantiated allegation, however, regarding the accuracy of some of the information reported on the 2003 expense calls, is not sufficient enough to justify a change in methodology.¹³ In the *Decision on 2004 Rates*, the AG's proposals to either retain the CAF or utilize a one-deviation cut-off in applying the standard deviation methodology were rejected. Rather, the two-deviation cut-off was found to be a reliable method of ensuring that only reasonable company expenses would be passed along to consumers. That opinion stated:

The AG repeatedly has expressed concerns that, if we employ the SRB's two standard deviation methodology, only about two percent of companies will be excluded from the CAF and, thus, virtually all company expenses will be included in the rate. However as we concluded in the *Decision on 2003 Rates*, while a higher CAF will indeed eliminate fewer expenses from the rates, there is, once again, no evidence in this record that permits a realistic quantification of the exact proportion of the company expenses that are unreasonable.¹⁴

These findings continue to be sound. In this proceeding, the AG again has failed to proffer any new evidence to warrant a return to the former CAF methodology or to alter the standard deviation cut-off. Moreover, absent evidence that separately applying an outlier methodology to liability and physical damage expense would yield a more accurate assessment of overall company expenses, the fact that companies must calculate separate expense ratios for the Commissioner's expense call and their annual reports is not in itself a persuasive reason to adopt a different methodology.

¹³ The AIB's witness, Kim A. Scott, testified that, after making certain corrections to the data reported on the initial expense call returns, she was not aware of any errors in the expense call data ultimately provided to the Actuarial Committee. (Tr. 2, pp. 68-69). The AG, through his attorney, cross-examined Ms. Scott, about the fact that a few companies allocated company expenses to Massachusetts on a per premium, as opposed to per exposure bases. (Tr. 2, pp. 77-83). However, he has failed to proffer any evidence to establish why this fact would affect the overall integrity of the expense call, or otherwise render the reported company expenses unreasonable.

¹⁴ In addition, a check on the two-deviation methodology produced sound results as compared with two national writers, National Grange and State Farm. *Decision on 2004 Rates*, at 120.

Aside from pointing out that the application of separate outlier adjustments for liability and physical damages coverages would, this year, result in the elimination of one company's physical damages expenses, the AG has failed to articulate or substantiate why this method is generally superior to combining the coverages and determining a single outlier adjustment. Like the CAF before it, the purpose of the outlier adjustment methodology is to remove unreasonable and excessive company expenses from the rates. If the AG seeks adoption of an alternate methodology, he must provide specific evidence to establish a nexus between that methodology and the elimination of *unreasonable* expenses. Such evidence is lacking in this record. Therefore, the current methodology will be retained for 2005 rates.

3. Competitive Commissions (Override and Contingent Commissions)

In setting rates pursuant to G.L. c. 175, § 113B, the Commissioner must factor in the rate the commission allowance that insurers pay to their agents. This commission allowance is commonly referred to as the "commission expense pure premium" ("CEPP"). In addition to this mandatory expense, insurers may also compensate agents, "in the form of commission overrides, bonuses, profit sharing benefits and expense reimbursement." See G.L. c. 175, § 162D. For the third consecutive year, the AIB asserts that the Commissioner should include such contingent and override commissions, which they collectively refer to as "competitive commissions," in the expenses for which companies will be reimbursed in the rates, notwithstanding the fact that these commissions are discretionary.¹⁵ Both the SRB and the AG oppose inclusion of such commissions.

a. Positions and Arguments of the Parties

The AIB acknowledges that the Commissioner has rejected inclusion of competitive commissions in the past, See *Decision on 2003 Rates*, at 30-34, and *Decision on 2004 rates*, at 122-124. Although it has not advanced any new arguments on this issue, it nonetheless asks the Commissioner to reconsider this matter.

The AIB continues to maintain that competitive commission expenses, albeit discretionary, should be included in the rates because the expenses are legitimate costs incurred by companies in their efforts to be competitive in the marketplace. It states that

¹⁵ AIB collectively referred to contingent and override commissions as "excessive commissions" in conjunction with the 2003 rate decision.

competitive commissions are required, in part, to compensate agents who perform services that would otherwise be required of the insurer. The AIB disputes the suggestion that policyholders do not benefit directly from the payment of competitive commissions. The benefit, they argue, is that discretionary commissions enable agents to stay in business, which, in turn, provides consumers with greater choice. For all of these reasons, the AIB believes that the exclusion of competitive commissions from company expenses results in inadequate rates.

The SRB argues that the AIB should be procedurally barred from re-litigating this issue since it has failed to offer any new evidence or other good cause as to why competitive commissions should be included in company expenses. Regardless, the SRB is opposed to policyholders paying for these competitive commissions given that such commissions: (1) are not directly related to services valued by policyholders; (2) may be linked to a producer's sale of other lines of insurance or entire books of business; (3) are not held to any reasonableness standards; and (4) are discretionary, and would result in a windfall to insurers who chose not to incur the expenses.

In addition, the SRB argues that the discretionary nature of the payments effectively removes any oversight by the Commissioner, who would not be able to determine whether the actual payments are excessive or reasonable, a necessary component of any data that is used to be factored in the rate. Moreover, the SRB suggests, allowing companies to choose to pay higher commissions than the CEPP, would in effect undercut the Commissioner's authority to set a CEPP.

The AG is against the inclusion of competitive commissions in the rates established by the Commissioner because he does not believe that the commissions provide any benefits to policyholders that they are not otherwise paying for by virtue of the CEPP, which is calculated to compensate agents fully for the reasonable costs of writing and servicing private passenger automobile insurance business.

b. Discussion and Analysis

The *Decision on 2003 Rates* and the *Decision on 2004 Rates* both rejected similar arguments by the AIB to include override and contingent commissions as company expenses, concluding that the inclusion of such commissions would not comply with the Commissioner's statutory duty to set "adequate, just, reasonable and nondiscriminatory

rates.”¹⁶ This conclusion was based largely on findings that payments of competitive commissions: (1) did not provide a direct benefit to policyholders; (2) are partially based on sales of other lines of insurance or involve characteristics of a producer’s book of business; (3) are not statutorily required; and (4) are not made based on any uniform approach. The instant record also supports these findings.

The AIB has not offered any new evidence to warrant a contrary conclusion. For the reasons set forth in greater detail in the above-referenced decisions, therefore, competitive commissions will not be a factor in determining the company expense premium used to establish 2005 rates.

4. Company Expense Trend Factor

For the purpose of establishing 2005 rates, company expenses for the upcoming year must be estimated. To do this, company expenses for recent years are trended forward. Specifically, a trend factor is applied to 2003 expense call data to fix the expense pure premium for 2005 rates. The AIB proposes the use of a composite company expense trend factor of 1.085, calculated using the methodology that has been employed in the past. This methodology consists of taking the weighted average of a composite of external indicated trends for selected government-generated wage and price indices. The SRB did not object to the AIB’s application of the CDM. The AG argues that the wage trend and overall trend factors calculated by the AIB, 1.116 percent and 1.085 percent respectively, are excessive, and that its trending methodology should be changed to set lower trends.¹⁷

a. Positions and Arguments of the Parties

The AG asserts that the CDM utilized by the AIB to calculate its expense trend is incorrect because it assumes a constant number of exposures. He argues, by failing to factor in the expected growth in private automobile exposures, the AIB has overstated the expense trend. In other words, he asserts, the total trended expense expressed on a per exposure basis may be correct for 2003, but will be too high if multiplied by a larger number of exposures.

¹⁶ The inclusion of contingent and override commissions was also rejected for different reasons in the *Decision on 1987 Rates*.

¹⁷ A wage trend factor of 1.116 corresponds to annual trend of 5.2 percent; the overall trend factor of 1.085 corresponds to annual trend of 3.8 percent .

In order to factor in growth, the AG maintains that the expense trend should be calculated on a per exposure basis, not as an expense per employee trend. On that basis, he recommends an expense trend of 4.3 based on a per exposure trend.

The AIB objects to the AG's approach. It argues that the CDM was designed to produce an objective, external cost trend for company expenses, and that the AG has not adequately established the justification for derivation from this methodology. The AIB points out that the *Decision on 2004 Rates* denied a similar recommendation by the AG, finding that the record did not permit the Commissioner to estimate the relationship between increased exposures and staffing levels. It suggests that the AG's proposal must be denied again this year because he still has offered no evidence on this issue.

In any event, the AIB asserts that the 4 percent growth assumption, *i.e.*, 2 percent per year, projected by the AG for the period 2003 through 2005 is unsupported by the record. While the AG maintains that he arrived at this figure by performing a four-year linear regression on PDL exposure between 2000 and 2003, the AIB notes that the percentages of PDL exposures have been increasing at a decreasing rate since 2001 (2.3 percent in 2001, 1.8 percent in 2002, and 0.4 percent in 2003).

Even if the AG's proposed growth-rate is supported by the record, the AIB maintains that the AG's methodology erroneously views the trend in isolation and fails to take into account increases for certain growth-related expenses, including staff and overhead.¹⁸ While the AIB acknowledges that productivity might offset or diminish some growth-related cost increases, it nonetheless maintains that it is reasonable to link increased exposures and higher company expenses. The AG's position, it asserts, fails to recognize that an increase in business volume will, at some point, lead to increased expenses.

Finally, the AIB states that the AG failed to submit evidence data from the Massachusetts Department of Employment and Training relied on by his witness, Ms. Gotham, to support her testimony regarding annual decreases in the number of insurance company employees.

¹⁸ The AIB also suggested that the AG's methodology failed to account for cost increases that it maintains will result if anticipated changes with regard to auto insurance regulations are promulgated.

b. Discussion and Analysis

The AG's proposal to estimate the wage component of the company expense trend on a per exposure, as opposed to a per employee basis, is rejected. In reaching the same conclusion, the *Decision on 2004 Rates* stated:

We agree with the AG that the relationship between the number of insurance company employees and the number of exposures is not necessarily constant, but the record does not permit us to estimate what the appropriate relationship is between increases in exposures and the maintenance of a staffing level adequate to support those increases. Further, we find that the AG has presented no new evidence this year that persuades us to adopt his recommendation.

These findings are equally warranted this year. The current record contains no credible evidence to establish a reliable correlation between increased exposures and increased company expense. The current methodology updates for changes in insurance company expense structures through the use of the annual expense call. Changes in productivity through the use of human labor or technology are reflected in those reported expenses. We note as well that the base company expense ratios from the 2003 expense call, estimated according to the agency company rule, are 0.77 points lower than last year.

To the extent the AG has attempted to introduce a new methodology, he bears the burden of demonstrating its superiority to the current methodology. To meet this burden, the AG must do more than make an earnest argument, and must introduce sufficient evidence during the hearing process to lay the foundation for the argument and demonstrate the advantages of the proposed change. In this proceeding, the AG has consistently failed on issues regarding the company expense trend factor. As such, the AG's proposed methodology for calculating the company expense trend factor will not be adopted with regard to the 2005 rates.

5. Loss Adjustment Expense Factors

To calculate rates, a claim adjustment expense factor is applied to loss adjustment expenses ("LAE"). LAE are expenses incurred in connection with claims handling, including costs incurred to settle and investigate claims and pay court costs, expert and other witness fees.

The AIB proposes factors of 1.1439 for BI coverages, 1.1160 for PDL coverages and 1.1538 for physical damages coverages, which were arrived at using a longstanding methodology prorating to Massachusetts countrywide adjusting and other expense data from the 2003 automobile expense call based on equal weighting of 2003 calendar year incurred losses and 2003 reported claim counts. The AG recommends LAE factors of 1.126 for BI coverages, 1.112 for PDL coverages and 1.154 for physical damages coverages, which he arrived after applying a two standard deviation outlier adjustment. The SRB made no additional recommendation on this rate component.

a. Positions and Arguments of the Parties

The AG proposes the application of a two standard deviation outlier test to claim adjustment factors to ensure that unreasonable and unnecessary expenses are not included in the rates.¹⁹ He maintains that the same rationale supporting adjustments to company expenses applies to LAE, noting that a two standard deviation cut-off would exclude two companies whose LAE is for BI coverage is at or above 37 percent, White Mountain Group and The Norfolk and Dedham Group; one company whose LAE for property damage is 45 percent, Fireman's Fund; and one company whose LAE for physical damage was reported as 59 percent, The Norfolk and Dedham Group. The AG argues that the outlier methodology he proposes would not restrict reasonable and necessary costs of adjusting insurance claims, but would restrict excessive and anomalous reported LAE. The AG also questions the accuracy of the expense call data on which the AIB based its calculations

The AIB points out that the AG's attempt to impose a normative adjustment to the LAE has been rejected in the past. It suggests that the bases for denial with regard to the 1979, 1986, 1987, 1988 and 1999 rates apply equally today. In particular, the AIB points to language in the *Decision on 1979 Rates* in which the Commissioner expressed reluctance to apply downward normative pressure on claim adjustments at a time when the companies were being called upon to improve fraud prevention.

The AIB contends that other rationales tending to disfavor a LAE adjustment include the recognition of legitimate variations in loss adjustment expenses based on

¹⁹ It should be noted that the AG has failed to explain why he is in favor of a two standard deviation cut-off with regard to LAE, but only a 1 or 1.5 cut-off with regard to company expenses.

differing books of business and an industry-wide need to improve claims handling practices. The AIB maintains that the AG's proposal would create no incentive for insurers to improve their handling of claims, and it would penalize insurers by intentionally underestimating the provision for LAE in the 2005 rates.

According to the AIB, the AG's adjustment is based on a biased calculation and an incorrect reading of the underlying data. It makes the case that the AG narrowed the result of the standard deviation by eliminating low values, and was, therefore, able to exclude data at the high end of the range. The AIB is further critical of the AG's methodology to the extent that it utilized LAE data from a subset of insurers, not from the entire market.

b. Discussion and Analysis

The Commissioner has not been asked to address LAE since the *Decision on 1999 Rates*. Significantly, the AG does not challenge the longstanding methodology used by the AIB to calculate LAE. Rather, he proposes that a two standard deviation cut-off be applied to the LAE in order to identify and exclude outliers.²⁰ On this record, I conclude that the AG has failed to put forward persuasive evidence to justify the application of an outlier adjustment to the LAE with regard to 2005 rates.

The AG's current proposal is premised on the assumption that the exclusion of outlier LAE is a worthwhile objective, a conclusion that is not supported by evidence in the record. To the contrary, LAE outliers should not be identified and excluded arbitrarily and without justification, particularly in an environment where companies are encouraged to follow procedures that will eliminate payments on fraudulent claims. While we agree that unreasonable and excessive LAE should not be passed along to policyholders, the AG has not presented any specific evidence to demonstrate that his proposed methodology would in fact exclude *unreasonable* expenses. Nothing in this record permits a realistic quantification of the exact portion of LAE that is unreasonable.²¹

Absent clear and persuasive evidence that the AG's proposed adjustment directly identifies and excludes excess and unreasonable claim adjustment expenses, limiting claim

²⁰ The only dispute the AG has with the AIB's calculations appears to be premised on the assumption that the expense call data relied on by the AIB was inaccurate. As stated above, however, the AG's unsupported allegation regarding the accuracy of some of the information reported on the 2003 expense calls is not sufficient enough to justify a change in methodology.

²¹ We note, as well, that the industry has agreed in the cost containment docket to a reduction of 0.375 to A1/B and PIP premiums. .

adjustment expenses would not be in policyholders' long-term interests. At the same time, we recognize that, as stated in the *Decision on 1999 Rates*, concerns regarding the LAE component in rates are valid. The parties are encouraged to give this issue careful consideration in the future.

6. Increased Limits Factors

1. Introduction

Massachusetts consumers can purchase additional amounts of insurance, in addition to the statutory minimums, for certain liability coverages such as property damage, uninsured or underinsured motorists and bodily injury. These additional amounts of insurance are known as "increased limits". Increased limits factors ("ILFs") are used to determine the pure premiums that are charged policyholders for all additional amounts of insurance in excess of the statutory minimums. The AIB recommends that ILFs for all coverages which offer higher limits be calculated following the current CDM. Only the application of the BI ILFs is at issue in this year's proceeding.

The statutory minimum limit of coverage for BI, otherwise known as the "basic limits", is \$20,000 per person and \$40,000 per accident. Policyholders can purchase higher limits of coverage for additional premiums. Approximately seventy percent of policyholders purchase BI increased limits coverage; of that seventy percent, approximately half purchase it at the \$100/\$300 limit. Data on increased limits losses is reported and developed separately from data on basic limits losses for each major limit-purchasing group (e.g. the groups who purchase limits of 20/40, 25/50, 50/100, 100/300, 250/500, etc).²² The basic limits pure premium underlying the ILF for each limit is based on the loss experience of only policyholders who purchase that increased limit. The methodology for preparing the data for the purpose of estimating BI ILFs has been undisturbed since the Commissioner's *Decision on 1988 Rates* and is explained in detail in the AIB's filing.

The initial step in preparing the data for estimating BI ILFs is to calculate the basic limit pure premium and the excess limit pure premium independently for each major limit-purchasing group. ILFs are calculated based on the ratio of total limits losses (basic plus increased) to basic limits losses for each such group. The ratio for policyholders that

²² For ratemaking purposes, the experience of those who purchase limits between 24/40 and 50/100 is grouped, because the number at each such level is too small to be credible.

purchase the statutory minimum is 1.00, the ILF factor for policyholders who purchase higher limits of coverage will be greater than one because the increased limits pure premium for these policyholders will be greater than zero. This methodology recognizes the long-standing empirical evidence that the ratio of total limit to basic limit pure premiums varies by coverage limit (e.g. 20/40, 25/50, etc).²³ For rate stability, the BI ILFs for a particular year have been calculated by taking an arithmetic average of the factors developed for the past six years. No party proposes any change to the methodology for calculating the ILF pure premiums or for deriving the ILF factors from pure premium.

The BI ILFs that result from this calculation are then used to determine: (1) the average dollars of increased limits premium that the industry expects to collect on a statewide basis; and (2) the actual premium for an increased limit of coverage that an individual policyholder will pay. The procedure for developing the average values for increased limits coverage is detailed in the AIB's filing. No party proposes any change to this procedure. Deriving the actual premium that an individual policyholder will pay requires application of the ILFs to the *manual*²⁴ rate for a policyholder's driver class and territory.

The AG, however, contends that the AIB's proposed ILFs, as applied, are unreasonable and lead to excessive rates. The AG cites two reasons in support of his allegation: (1) subsidies paid by increased limits purchasers exceed subsidies received by these purchasers; and (2) a mismatch exists between the ILFs and the premiums to which they are applied, because the difference in loss experience within a given classification group (including both class and territory issues) between policyholders who purchase and do not purchase increased limits is not reflected in the premiums.

The AG proposes to remedy these purported problems by balancing rates on a total limits basis and by applying an adjustment factor to BI ILFs. Although the AG initially calculated an adjustment factor of 17.9 percent, he ultimately recommended a five percent reduction in BI ILF, noting that some minor issues may still need to be resolved with regard to this adjustment. In its brief, the SRB urged rejection of the AG's proposal.

²³ *Decision on 1988 Rates*, pages 61 – 73.

²⁴ The manual rate is the starting point in the calculation of a given policyholder's premium. Manual rates are established for 162 driver class and territory combinations which reflect the operators' years of driving experience and the garaging location of the vehicle. Manual rates additionally reflect the discounts and accident violation records expected for each driver class and territory combination.

Arguments

The AG argues that the AIB's BI ILFs produce excessive premium charges for more than two-thirds of policyholders who purchase increased limits BI coverage. He asserts that purchasers of increased limits BI coverage pay a rate higher than that indicated from the expected costs, and that the magnitude of the overcharge, approximately 20 percent, has varied little over time. The AG argues that the evidence of overcharge is undisputed, and that it arises for two reasons, an imbalance in the subsidies because there is no offset to for the subsidies generated by policyholders who purchase increased limits, and a mismatch between the ILFs and the premiums to which they are applied.

For basic limits coverage, the relativities are balanced, and subsidies received equal subsidies paid. The subsidy imbalance arises, the AG states, because policyholders who buy BI increased limits generally live in territories where the rates, because of the subsidy system, are higher than they otherwise would be. Because increased limits premiums are calculated by applying the ILF to the basic limits premiums, he asserts, the subsidy in the basic limits premium is carried forward into the increased limits layers, but that subsidy is not balanced to ensure that, overall, the subsidies paid balance the subsidies received. Therefore, the AG argues, the system allows insurers to collect and retain, in the form of overcharges, subsidies intended for policyholders. The AG argues that Mr. Schwartz calculated the subsidy imbalance resulting from tempering at 4.0 percent.

The AG relies on Actuarial Notice 04-2 (Ex. 3) to support his argument. He concludes that, because policyholders in territories with high rate subsidies for the compulsory package are the policyholders with the highest cost-based rates, those territories are expected to have the "lowest level" of ILFs since a lower percentage of policyholders in such territories purchase increased limits. Similarly, those policyholders in overcharged territories are expected to have the "highest level" of ILFs because a higher percentage of such policyholders purchase increased limits coverage. The goal of the AG's balancing methodology is to ensure that all rate subsidies balance to zero statewide.

The AG asserts that both his expert and the AIB's expert testified that subsidies are unbalanced, and that no evidence contradicts such testimony. Therefore, he argues, there is no support for a finding that an imbalance does not exist. Further, he argues, his filing

includes a step-by-step algorithm for balancing relativities, and therefore subsidies, for all BI premiums, both at basic and increased limits. The AG comments that no evidence in the record disputes the appropriateness of his proposed correction or proposes a different method to correct the subsidy imbalance.

The AG also argues that the method by which a policyholder's increased limit BI premium is calculated from the manual rate results in premium charges that are too high. Specifically, he contends that "The BI ILFs are multiplied by a BI basic limits premium that is higher than the value used in deriving the BI ILFs, and this causes the excess premiums to be excessive." He contends the pure premium underlying the A1/B rate is always higher than the basic limit pure premium underlying the ILF in the manual rate calculation, resulting in an "excessive" increased limits premium, and he proposes an adjustment factor to the BI ILFs to reduce the ILFs for this problem.

The AG, in his second argument, states that the current BI ILF methodology includes a mismatch error that results in overcharges to individual policyholders. He notes that policyholders who purchase only BI basic limits on average incur much higher losses per exposure than the basic losses per exposure for those who purchase increased limits. However, there is no special basic limits charge for increased limits purchasers. All policyholders pay for basic limits at rates developed for each driver class and territory combination for all limits. The mismatch occurs, the AG argues, because the ILF that is calculated using historical basic and total limits costs for purchasers of each layer of increased coverage, is then applied to the average basic limits premium of all policyholders, including those who purchase only the mandatory basic limits. Because it is applied to a higher basic limits pure premium, the resulting premiums for increased limits coverage are higher than they would be if applied to basic limits pure premium derived only from the experience of increased limits purchasers. The AG argues that he has offered a formula to correct the mismatch, and that nothing in the record challenges the existence of the mismatch error or disputes his calculation.

The AG argues that the purchasing pattern for increased limits coverage is not a material concern and should not prevent correction of the ILF error. Although the *Decision on 2004 Rates*, at 111, concluded that any substantial shift in purchasing patterns

could affect the assumptions underlying the AG's methodology, he points out this year that no expert has testified that a reduction in the cost of increased limits coverage would affect purchasing decisions. Further, he asserts, there is no evidence that a change in purchasing patterns would affect or correct the ILF error. The AG states that the data show that increased limits purchasing patterns have remained at a virtually constant rate since 1998, regardless of upward or downward changes in the premiums for that coverage. Therefore, he concludes, no correlation exists between cost and the decision to purchase. In addition, the AG argues, purchasing patterns do not affect the indicated ILF adjustment, that has remained relatively stable over time. He asserts, as well, that no portion of the AIB's rate filing and no prior decisions consider the effect of premium changes on purchasing patterns for increased limits or other optional coverages.

In response to concerns raised in the *Decision on 2004 Rates* about the reasons why the average premium paid by increased limits purchasers may vary, the AG argues that no expert testified that premium variation resulting from class, territory, SDIP, or other rating factor affects the increased limits error or its correction. He argues that his analysis removes the effect of class and territory on premium by comparing the relative costs of increased limits purchasers, based on their experience, to rate relativities that reflect such premium factors as class and territory. The AG asserts that the SDIP rating is not relevant to his analysis, because no credit or debit for SDIP rating is applied. He further argues that factors such as the multi-car and low-mileage discounts, and differences in losses in towns within a territory do not affect the ILF error or its correction. The AG concludes that an explanation may exist for the difference in experience between purchasers of increased limits and those who purchase only basic limits, but that such difference is constant over time, and results in excessive premium charges for increased limits.

Finally, the AG states that, under c. 175, §113B the Commissioner, utilizing a series of procedures that include determining an ILF, sets premium charges, not rates. Specifically, the Commissioner's duty is to fix and establish "adequate, just, reasonable, and nondiscriminatory *premium* charges" rather than rates. G.L.c. c. 175, §113 B (emphasis added). Thus, he argues, no meaningful distinction exists between "rates" and "premiums" for purposes of the ILF discussion. The critical question then becomes

whether ILFs set by the Commissioner will produce reasonable premium charges. In any event, the AG asserts, he is not asking the Commissioner to adjust total premiums or gross revenues, but seeks to ensure that the premiums for policyholders who purchase increased limits coverage are correct and reasonable.

The AIB opposes the AG's methodology for a series of reasons. It questions why the AG has judgmentally asked for a five percent adjustment for BI ILFs, after articulating that a 17.9 percent reduction is appropriate based on his methodology. Further, the AIB argues, the AG's proposal has been offered twice before, in the proceedings to set rates for 2003 and 2004, and has been rejected both times.²⁵ It asserts that the AG's proposal has not changed, and should therefore again be rejected. Addressing the AG's recommendation to balance BI increased limits rates, the AIB argues that adoption of his proposal would delay the publication of rates, because it would require that the manual rate be calculated prior to a determination of the overall rate decision, which would in turn require the AIB to publish its actuarial notice on subsidies in rates before manual rates are calculated and published.²⁶ The manual rates, the AIB states, are an input into the AIB's actuarial notice and the AG's proposal would result in the classical chicken and egg scenario. It also would delay the Commissioner's setting of rates which is, for all practical purposes, already as late in the year as it can be in order for companies to effectively implement such a rate in the proceeding year.

The AG's analysis this year, the AIB states, focuses on the difference between experience (pure premium) based basic limits relativities and rate-based basic limits relativities, quantities that, the AIB argues are expected to be different. Because the AG's proposal rests on an incorrect underlying premise that these relativities should be identical, the AIB argues, it must be rejected. The AIB highlights testimony from the AG's witness, Mr. Schwartz, that variables such as the multi-car discount, the low-mileage discount and differing town loss experience within territories all cause experience and rate relativities to differ. The AIB asserts that the AG's witness admits that the premise underlying his

²⁵ We note that the Commissioner's rejection of the AG's ILF argument in the Decision on the 2004 Rates was remanded to the Commissioner by the Supreme Judicial Court for further findings, and proceedings if necessary. This remand is pending before the Commissioner.

²⁶ Manual rates are established to balance to the average rate underlying the Commissioner's rate decision. The AG's proposed method would require a decision on basic limits rates and the calculation of the manual basic limit, followed by a decision on the ILFs.

proposed ILF adjustment is based on the false assumption that the rate relativities and experience relativities be identical. The AIB argues that manual rates vary by class and territory, and that rates are calculated for individual risks by applying unbiased factors and discounts that reflect statewide loss experience to those manual rates. However, the distribution of individual insureds' risk characteristics, such as SDIP step, may not be identical across class/territory cells. It is this disconnect that is at the crux of flaw in the AG's proposal. The AIB offers a list of reasons why experience relativities may differ from rate relativities; some experience relativities, such as those developed on the basis of age, gender or marital status, may not be used to develop rate relativities. As another example, it notes that senior citizens' loss experience may be little better than that of other experienced drivers, but that the rates reflect a 25 percent discount for such operators. The multiplicity of reasons for differences between increased limits loss experience relativities and rate relativities, the AIB argues, indicates the futility of the AG's attempt to demonstrate that they should match. Adoption of the AG's approach, which would force the experience ILF relativities to be identical would, the AIB asserts, require rate relativities for increased limits to be calculated using impermissible rating variables, such as age and gender, both of which are prohibited by statute.

The AIB argues, as well, that contrary to the AG's position, no mismatch exists in the calculation of BI ILFs. Experienced ILFs are calculated for each set of limits as the ratio of the total limits BI losses for that set of purchasers to the basic limits BI losses for that set of purchasers. Therefore, the AIB argues, BI ILFs are matched to the group that actually purchases the coverage, and no "mismatch" exists.

Further, the AIB characterizes the AG's proposal as a shift from rate regulation to premium regulation. It notes that the Commissioner sets rates, but that premiums result from applying the manual rates and rating factors to the risk characteristics of and purchasing decisions made by individual risks. Adoption of the AG's proposal, the AIB argues, would require the Commissioner to forecast either future purchasing patterns for BI increased limits coverage or implicit and explicit rate subsidies. Such changes, it asserts, cannot be justified on this record or under current ratemaking rules. Rates, the AIB comments, are charges per exposure, and as those exposures increase, losses increase.

Finally, the AIB argues, the AG's proposal should be rejected because he has proposed no well-defined competing ILF methodology. It asserts that the AG would calculate ILFs the traditional way and then reduce them on average by 17.9 percent, based on a "hideously complex calculation." The AIB argues that the AG's approach does not provide a simple, clear and unbiased alternative to the CDM, but recommends a methodology that would produce a different reduction factor each year, further complicating an already complex ratemaking process.

Although the SRB did not make a filing on ILFs, it urges rejection of the AG's methodology on the ground that he has not demonstrated that it is superior to the established one. Further, the SRB asserts, the AG bases his adjustment on the difference between the data relating to the relativities underlying the BI ILF calculations and the relativities underlying the rates. That the two sets of values are not identical, the SRB argues, results from a number of factors, including rate subsidies, discounts, the SDIP, and the type of relativity that is analyzed. The SRB also criticizes the AG's decision to judgmentally select an ILF factor of 0.95, rather than to adopt the 0.821 factor that he calculated.

Discussion and Analysis

The AG first proposed a change to the methodology by which BI ILFs are calculated and applied in the proceeding to set 2003 Rates. As noted in the *Decision on 2003 Rates*, the AG bears the burden of demonstrating that this methodology is superior to current practice. As in 2003 and 2004, we again remain unpersuaded, based on this record, that the AG's proposed methodology should be adopted at this time. The AG's argument that the opinions of his witness are uncontested, even if accepted as true, does not mean that the AG has met his burden. We have carefully examined the testimony that the AG has presented this year and reach the following conclusions.

The AG's proposed methodology is based on the fundamental premise that increased limits purchasers pay premiums that are unreasonably high. His stated intent is: (1) to remedy the imbalance in subsidies paid and received by increased limits purchasers; and (2) to address the "mismatch" that occurs due to the application of BI ILFs to average losses of all policyholders rather than to losses incurred by increased limits purchasers.

On the first issue, the AG acknowledges that the basic limits rates vary from one group of policyholders to another because, among other things, subsidies are in the rates as a matter of public policy and, in Mr. Schwartz's words, serve a legitimate public purpose. The AG concludes, however, that increased limits premiums that are derived from subsidized basic limits rates incorporate a subsidy that goes from policyholders to insurance companies, rather than to other policyholders. However, the evidence submitted by the AG does not support the underlying premise that subsidies contribute to ILF premiums. Mr. Schwartz testified that the values for experience relativities that he calculated do not include subsidies by limit. Addressing his calculation of rate relativities, he testified that each purchasing group would include classes and territories which both receive and which pay subsidies. He stated that there is going to be a general tendency for those subsidies to cancel each other out. Further, the AG premises his argument on the claim that policyholders in highly subsidized territories are less likely to purchase increased BI limits, and that policyholders in territories that pay subsidies are more likely to buy increased BI limits. However, aside from the AG's bald assertion that this is the case, there is no evidence in the record to support this claim. Some two-thirds of Massachusetts policyholders purchase increased limits coverages.

The evidence that the AG offers to support his assertion that an imbalance exists in the subsidies paid and received by increased limits purchasers is based on his estimate of the total increased limits loss pure premium as a percentage of the total basic limits loss pure premium. Based on his analysis, he concludes that the AIB's rate for BI increased limits is about 49 percent higher than the experience losses would indicate. However, the AG does not offer a standard for what the percentage relationship between the average increased limits premium and average basic limits premium should be. What he does offer implies a 49 percent subsidy level in the average premium paid by increase limits purchasers.

Nothing in this record supports the premise that anyone pays such a high level of subsidy. The AG cites to Actuarial Notice 04-2 as support for his assertion that the subsidies are not balanced among increased limits BI purchasers. We are not persuaded that the Actuarial Notice supports the AG's position, but note that it provides evidence that the alleged percentage subsidy overcharges do not average to 49 percent.

Actuarial Notice 04-2 provides an overall estimate of rate subsidies (both undercharges and overcharges) for each rating territory for the compulsory package of coverages. It shows rate subsidies for all coverages combined, rather than by individual coverage. The Notice does not show the distribution of policyholders by limit for any driver class/territory combination.

The AG observes that the largest subsidy overcharges are for the compulsory packages that occur in the lowest rated territories. According to Actuarial Notice 04-2, the average overcharges in this category for the four lowest territories are 14.2 percent, 13.7 percent, 14.7 percent and 15.4 percent. Because the basic limit BI premium represents approximately 49.3 percent of the total compulsory average premium²⁷, if the average subsidy in this premium is 49 percent, the average subsidy in the remaining premium must be -19.0 percent²⁸. This is not a realistic conclusion given the means by which subsidies are introduced in the rates. We agree with the AIB insofar as the AG has failed to quantify the alleged imbalance, and to prove how his methodology would produce such balancing.

The AG also argues that purchasing patterns for increased limits for BI are not relevant to this proceeding because we do not analyze purchasing patterns for any other types of coverage. While there may be some truth to this assertion, it does not make them irrelevant to the consideration of ILFs. By arguing that subsidy imbalance occurs because more suburban, subsidy-paying policyholders purchase increased BI limits, the AG makes purchasing patterns, as they relate to territorial distributions, an issue. Yet he has presented no evidence that shows that only certain consumers purchase these increased limits or to demonstrate the differences in purchasing limits by territory. There is no evidence in the record to support this claim of the AG.

Moreover, we conclude that, based on the evidence before us, the AG has similarly failed to establish that an improper “mismatch” occurs when BI ILFs are applied to the average losses of all policyholders, rather than just increased limits purchasers.

²⁷ The proposed average rates for 2005 in Ex. 2 are \$259.83 (20/40 A1), \$39.19 (20/40 for B), \$76.80 (PIP), \$214.47 (PDL), and \$16.49 (20/40 UM) or \$606.78 in total. The proportion of this average premium for BI is $(\$259.83 + \$39.19)/(\$606.78) = .493$.

²⁸ The average subsidy on these four territories is 14.5 percent. If 49.3 percent of the premium underlying the compulsory package is for basic BI, and the average subsidy is 49 percent, then the subsidy for the remaining coverages is -19 percent.

The AG asserts that all of the BI ILFs are excessive because the basic limit loss pure premium underlying the BI manual rate is higher than the basic limit loss pure premium underlying the BI ILF for these policyholders. This assumption that the underlying factors must be the same is incorrect.

The underlying basic limit pure premium for each increased limit reflects the experience of all policyholders in all territories and driver classes who purchase that increased limit²⁹. The resulting ILF recognizes the risk associated with the higher level of coverage. The “traditional” methodology continues to be used for property damage liability and uninsured motorists. That methodology bases the ILF on the ratio of the excess layer of loss to the statewide average basic limits losses for all policyholders regardless of the limit of coverage purchased.

Both approaches align the available data to estimate the risk of higher losses that result from a higher coverage limit, as a proportion of the basic limit. Configuring the data for this purpose that differs from the data configuration underlying the manual rate calculation does not invalidate the appropriateness or accuracy of the ILF. The basic limits pure premium that is used as the foundation of the property damage liability ILFs is not the same as the pure premium underlying the manual rate to which it is applied, yet the AG does not object to that “mismatch”. Nor does he object to the fact that discount factors for annual mileage and multicar discounts are not based on pure premiums that align exactly with the pure premiums underlying the rates to which they are applied.

The assumption that the lower average basic limit losses associated with policyholders who purchase higher limits of coverage are correlated with lower average basic limits premiums is assumed in the current ILF methodology. The AG does not dispute this in principle or in fact. The AG’s estimation of the average basic limit manual rate for each limit-purchasing group actually affirms the reasonability of this assumption.

The AG’s “evidence” that the basic limit pure premium underlying the manual rate for increased limits BI purchasers is higher than the pure premium underlying the BI ILF is based on a comparison of the basic limit pure premium relativities underlying the ILF and the average basic limit manual rate relativities for each limit purchasing group.

²⁹ That includes any variations that derive from driver age, gender, marital status or accident violation record.

The AG performed certain comparisons among the limit purchasing groups, and concludes that, because the range of the average 20/40 manual rate relativities by purchasing group is narrower than the range observed for the average basic limit pure premium relativities, and that because the ILF pure premium differentials are lower than the corresponding rate differentials for the increased limits purchasing groups, the pure premium underlying the manual rates for those policyholders are higher than they should be. We disagree with this conclusion because we are not persuaded that the underlying pure premiums must necessarily be the same.

First of all, the AG's analysis provides no information about the pure premium underlying the manual rate to which the ILF factor is applied. What the AG shows is simply the average 20/40 manual rate for each limit-purchasing group based on that group's driver class and territory mix. If the mix were identical for each limit-purchasing group, the average 20/40 manual rates would also be the same. The fact that they are not says nothing about the actual loss pure premiums underlying a specific driver class/territory manual rate. Furthermore, the increased limit premium for a specific policyholder and limit is not calculated by applying an ILF to a statewide average manual rate for the limit-purchasing group.

Secondly, subsidies in the rates necessarily reduce the overall rate range in the market place because all rates are brought closer to the average rate. A cursory review of the table in Actuarial Notice 04-2 that was referenced in the AG's filing shows that the impact of rate subsidies reduces the range of compulsory average rates from 0.57 to 3.38 times the statewide to 0.65 to 2.02 times the statewide average. While rate subsidies narrow the range of rates, they do not correspondingly alter the range of the loss premiums underlying them. To the extent that purchasers of increased limits tend to come from lower rated classes and territories, the pure premium relativities underlying the manual rates would also be lower than the manual rate relativities for the increased limit purchasing groups.

The AG conspicuously tries to conceal the impact of subsidy in this analysis, by focusing attention only on the amount by which the manual rate relativities exceed the ILF basic limit pure premium relativities for the increased limit purchasing groups. He fails to display the equally significant result that the basic limit loss pure premium underlying the 20/40 limits is 31% *higher* than the corresponding average manual rate relativity for 20/40

purchasers. The statewide basic limits pure premium underlying the limit purchasing groups average ILF pure premium and manual rate relativities. The statewide average manual rate is established to adequately cover all basic limits losses. The AG incorrectly attempts to rationalize a reduction to BI ILFs by suggesting that the basic limit losses underlying the statewide average manual rate are excessive in total.

The AG's proposed methodology is also based on the fundamental premise that increased limits purchasers are paying premiums that are unreasonably high. If the AG truly believed in the veracity of this premise, then he should also be questioning the derivation of ILFs for PDL and U-1, as well as the discount factors. However, as we noted in the past two rate decisions and as much as can be gleaned from Mr. Schwartz's murky testimony, the average premiums paid by increased limits purchasers may vary for a variety of reasons, including driver class and territory and, to the extent that the lower loss costs for these drivers are linked to lower SDIP ratings, they already receive credits. We conclude that, based on the evidence before us, the AG has similarly failed to establish that an improper "mismatch" occurs when BI ILFs are applied to the average losses of all policyholders rather than just increased limits purchasers. We do not find the AG's arguments in this area entirely without merit, however, and we encourage the AG to further explore and explain these positions in future proceedings.

For all of these reasons, we will not adopt the AG's proposed methodology to calculate and apply BI ILFs but, instead, for 2005 rates, we will continue to base BI ILFs on the arithmetic average of the last six years of ILF experience.

Rate Subsidies and Territorial Adjustments

a. The Parties' Recommendations

The AIB's filing this year included an extensive analysis of rate subsidies, including the calculation of driver class/territory relativities and of off-balance factors, prepared as a response to the Commissioner's order in the *Decision on 2004 Rates*, at 136. The AIB makes four specific recommendations based on its study: 1) use PIP loss experience to derive PIP class/territory relativities; 2) raise the levels of tempering for those relativities; 3) raise the level for stage 1 capping to eight percent above the statewide average rate change and retain the thirteen percent combined Stage 1 and Stage 2 rate cap;

and 4) continue the phase-in of the interclass constraint off-balance correction. It notes that the SRB also proposed a set of modifications to the procedures for calculating relativities.

The AIB argues that it and the SRB broadly agree on the principles underlying their respective proposals for those four modifications to the current system for developing manual rates by driver class and territory. It states that although it recommends the specific modifications included in its advisory filing, it views the SRB's recommendations as reasonable alternative approaches to correcting the problems arising from the current system. To that end, it argues, it is more important that the Commissioner take action than that she choose a particular party's recommendation.

The AIB argues that the Commissioner should not adopt the AG's proposal, because it is more of a template or a general concept, rather than a program that can be implemented directly. Further, it states, the AG's calculations are based on a combination of all compulsory coverages, even though the adjustments to manual rates are calculated separately for each coverage.

The SRB also makes a series of recommendations to the current methodology for calculating manual rates that revise the class/territory subsidies applied to the otherwise fixed-and-established rates. First, it proposes to change the tempering logic by revising the tempering caps applicable to principal operators with less than six years of driving experience. It states that its proposal is designed to narrow the difference between the average tempered and the average formula pure premium relativities, while still providing some rate relief for inexperienced operators in urban areas. It notes that its proposal will affect rates gradually based on the overall rate capping mechanisms that are currently in place. The SRB further recommends that tempering be eliminated for the comprehensive coverage, because it covers losses, such as glass claims and theft, that are independent of the operator's experience. It urges the Commissioner to adopt its proposals, arguing that its recommendations are reasonable and constitute a significant improvement on the current methodology.

The SRB also recommends that agent commissions be incorporated into the rates as a variable, rather than a fixed, expense. It asserts that the current methodology, for BI, PIP

and PDL coverages, incorporates the commission expense pure premium in the rate as adjusted for the specific driver class/territory pure premium relativity. For physical damage coverages, a fixed dollar amount is loaded into the rate for all class/territory combinations. A more accurate approach, the SRB states, is to recognize commissions as a variable expense consisting of a fixed percentage for each coverage. It asserts that this change will have a negligible effect on the manual rates for the BI, PIP and PDL coverages, but will recognize commissions in the rates more accurately. For the physical damage coverages, it will allow manual rates to reflect more accurately commissions paid for those coverages, and correct the inequities created by fixed dollar loading. It characterizes the resulting rate increases and decreases as “modest.” The SRB agrees with the AIB that PIP manual rates, by driver class and territory, should be based on actual PIP loss, claim and exposure data rather than on BI data. This recommendation arises from the differences between the class/territory experience for PIP and BI. The SRB concludes that it is logical and reasonable, and that the Commissioner should adopt it.

The SRB proposes two changes to the rate capping mechanisms related to territorial assignments: elimination of “Stage 2” capping; and increasing the rate caps from five percent to eight percent. On the first issue, it argues that in recent years capping for changes in territory definitions has had little, if any effect, because towns are limited to moving only one territory every two years. The SRB concludes that stage 2 capping is irrelevant, complicates manual ratemaking unnecessarily, and should be discontinued. The SRB also endorses the AIB’s proposal to increase the rate cap from five to eight percent, on the ground that the impact of capping has diminished to negligible levels. Its witness, Ms. Blank, testified that it is important that rate caps reflect changes in experience in the driver class/territory rate differentials. She stated that the level of rate subsidy has increased in the past few years, in part because of the low five percent rate cap. Acknowledging that rate stability is important, she testified that rates should also be responsive to changes in experience.

The SRB also proposes to eliminate the unintended territorial subsidies that arise from interclass constraints that are applied to align the rates so that experienced operators pay less than inexperienced operators. Because this adjustment creates net losses or gains in the overall premiums, an off-balance factor is applied. The SRB argues that it is

appropriate to align the rates within a territory, and that to do so it is necessary to off-balance for each territory, rather than to apply the off-balance factor statewide. It therefore proposes to phase out the unintentional subsidy created by the current methodology by requiring experienced drivers in a territory to pay the subsidies for inexperienced drivers in that territory. The new methodology would be phased in over a twenty-year period, by gradually shifting the proportion of the off-balance that is applied statewide and that paid in a particular territory. The SRB argues that its recommendation is reasonable and eliminates the unintended subsidy gradually in a conservative manner.

The SRB urges the Commissioner to reject the AG's alternative methodology, that would establish a class/territory grid for the compulsory coverages. The SRB argues that the actual prices in the manual rates are calculated separately by coverage, and not together in a compulsory package.

The AG opposes the AIB and the SRB proposals, asserting that their proposals eliminate a large portion of the territorial subsidy for urban drivers and will therefore increase the rates for those drivers. He argues that neither the SRB nor the AIB has provided a principled basis for its proposal, or analyzed the impact of its recommendations on urban drivers or on the territories that it would affect. The AG proposes to leave subsidies at their current level but to develop a grid structure that clearly identifies the subsidies and prevents them from "wandering unexpectedly." The grid, he states, will ensure that subsidies are transparent, comprehensible and stable, serve as the basis for future discussions of subsidies, and can be used to establish a subsidy clearinghouse that will neutralize the impact of subsidies on insurers. The AG, citing to the *Decision on 2003 Rates*, notes that Massachusetts, as a matter of public policy, adjusts rates to subsidize urban drivers, acknowledging that factors that contribute to their higher rates, such as traffic congestion, are not exclusively urban problems. He refers, as well, to Ms. Scott's testimony that the methodologies for providing subsidies change every year, without particular reason, and that unintended and intended subsidies occur as a result of the various mechanisms in the current system.

The AG reviews past decisions addressing the methodology for calculating the off-balance factor for interclass constraints, noting that it was rejected three times before it was

approved in the *Decision on 2003 Rates*, 56. In the *Decision on 2004 Rates*, however, the Commissioner suspended further phase-in of the new methodology, because the parties had not examined more fully the interplay of the territorial rating system with the impact of manual rate adjustments. The AG argues that the AIB and the SRB, rather than devise a coherent process to address the entire question of rate subsidies, have recommended modifications of the existing methodologies with little or no explanation of the rate impact on drivers. The net effect of their recommendations, the AG asserts, will generally raise rates for urban drivers, who are already paying the highest rates in the state, and reduce them for suburban drivers. Even though some proposals may affect only a few urban territories, others will have a wider effect. The AG argues that subsidies have long been recognized as appropriate and necessary, in part because drivers from non-urban areas contribute to urban traffic problems, and also benefit from the urban density that is a cause of high accident frequency. He observes, as well, that subsidies are also based on the idea that it is good public policy to keep insurance affordable in urban areas. The AG argues that although the AIB has estimated the impact of its proposed changes on average rates, it has not analyzed their effect in urban areas. Further, he argues, the AIB and the SRB, rather than propose or demonstrate a superior method for providing subsidies, have proposed methods for dismantling the current system, including a recommendation that would increase capping levels to reduce the time period for achieving the full effect of the proposed modifications.

Overall, the AG argues, the AIB and SRB proposals do not advance the goal of developing a rational subsidy structure. However, he notes, the AIB, in a footnote to its filing, proposes an approach that would establish subsidy levels directly, instead of through the rate calculation process. A class/territory grid would allow subsidy levels to be predetermined and imposed as a final adjustment to actuarially cost-based rates. The AIB considers that this methodology would simplify ratesetting, make subsidies more transparent and adjustable, eliminate the evolution of unintended subsidies, and manage fluctuations in subsidy levels. The AG recommends that the Commissioner reject the proposals to eliminate the existing subsidies and adopt a class/territory grid approach.

b. Discussion and Analysis

The average rates are converted to manual rates, from which individual policyholder's premiums are calculated, by applying a series of relativities that reflect loss experience by driver class and in the territory in which the vehicle is garaged. Rates are higher in urban areas with a relatively high population density than in non-urban areas, and inexperienced operators pay more than those who have been driving for more than six years. For reasons of public policy, the application of those relativities is modified through various procedures, including adjustments, tempering and capping, in recognition that non-urban drivers contribute to traffic density in urban areas and to make insurance more affordable for inexperienced operators. The calculation of manual rates incorporating class and territorial relativities and modifications to them has become a complex system, generating procedures, such as interclass constraints, to compensate for unreasonable results produced by the basic methodologies.³⁰ The AIB and the SRB propose several changes to the relativity methodology; the AG urges that no action be taken to modify the current system until a thorough analysis can be performed of all subsidies and a new approach developed based on a matrix. We have considered the parties recommendations and positions and reach the following conclusions.

i. PIP Relativities

Currently, PIP relativities are calculated based on relativities developed from experience relating to the basic BI coverage. The AIB and the SRB propose to change that methodology to allow PIP relativities to be calculated on PIP experience, on the ground that PIP experience differs from BI experience. While this change might result in more accurate relativities, the record does not provide an analysis of the precise effect on policyholders. Because this is a mandatory coverage, any change will affect all insureds. Therefore, we do not adopt this recommendation this year, but will reconsider it in the future if the facts on the record more fully analyze its effect on policyholders in all territories and driver classes.

ii. Treatment of Commissions as a Variable Expense

³⁰ Interclass constraints, in brief, are a procedure that is applied as a final step in developing manual rates, to ensure that the rates for driver classes reflect differences in experience levels.

The SRB asks that the relativity calculations treat commissions as a variable expense, arguing that the change would more accurately recognize in the rates the way commissions are actually paid. The SRB did not analyze the specific effect of this change, but asserted that it will have a negligible effect on the manual rates for the BI, PIP and PDL coverages, and correct the inequities created by fixed-dollar loading for the physical damage coverages. Because the proposed adjustment will improve the accuracy of the relativity calculations for the mandatory coverages, without having a significant effect on policyholders, we adopt the SRB's recommendation. We are also persuaded that, in the interest of improving accuracy and creating consistency with the liability coverages, it is reasonable to treat commissions for the optional physical damage coverages as a variable expense as well. Further, it will incorporate a more realistic expense ratio in all physical damage rates.

iii. Eliminating Tempering for Comprehensive Coverage

The SRB also recommends eliminating tempering for comprehensive coverage, on the ground that it covers losses, principally glass claims and theft, that do not relate to driving experience. Ms. Blank testified that tempering for the comprehensive coverage does not have a huge effect and that, because comprehensive is not rated by driver class, its elimination will equally affect experienced and inexperienced urban drivers. She noted as well that only three territories receive any benefit from comprehensive tempering, and pointed out that although all three are urban, they are only a small portion of all urban territories. We are not persuaded that it is appropriate at this time to abandon a tempering process that does not affect driver classes but is based on territorial subsidies. We will reconsider this issue in the future once the parties have fully developed a class/territory grid structure or matrix that better identifies rate subsidies. We therefore do not adopt the SRB's recommendation.

iv. Adjusting Tempering for Inexperienced Drivers

The process of tempering rates by driver class also reflects a public policy to subsidize inexperienced drivers. Because of tempering, the premiums paid by inexperienced drivers are significantly lower than what they would pay if their premiums were based on the true costs of providing their coverage, rather than on the subsidies they

receive. The AIB notes in its filing that the large subsidies for inexperienced principal operators have increased in recent years because tempering levels have not changed in response to actual loss experience for this group of operators. A comparison of the effect of tempering in 1997 and in 2004 shows an increase in the disparity between actual experience and rate level. Because the rate reductions that result from tempering for inexperienced principal operators are larger now than they were in 1997, the relativities for classes and territories that pay for those reductions are increased. Further, the number of risks that are subsidized through tempering has increased significantly since 1997. A reduction in the subsidy rate for the classes of inexperienced drivers will allow their rates to rise somewhat closer to the rates based on actual experience, and will result in an overall decrease in the rates for experienced drivers. This change in the tempering methodology will particularly benefit experienced urban drivers because, under the current tempering methodology, the rate differential between experienced and inexperienced drivers in urban territories is narrower than the rate differential in non-urban territories.

Adoption of the SRB's recommendation will result in a more appropriate relationship between the rates for experienced and inexperienced operators statewide. Further, the SRB's proposal leaves intact a fifteen percent tempering for BI and PIP rates and five percent for PDL and collision for drivers with less than three years of experience.

v. Rate Capping

The AIB and the SRB both recommend a change in the capping process that limits the effects of premium increases. Currently, capping may occur at two stages in the rating process. In years in which territory definitions are revised, municipalities are permitted to move one territory up or down. That movement is based on changes in their relative loss experience. Rating territory boundaries are established based on pure premium relativities that, for most territories, represent six percent pure premium differentials. That six percent, for purposes of rate development, translates into rate differentials of approximately five percent. By limiting the movement of municipalities resulting from revised territory definitions to a single territory, the rate effect is limited to approximately five percent for all operators in the territory, regardless of driver class.

The capping that the parties address in this proceeding relates to the amount of rate change that will apply to any driver class in any territory as a function of the prior year's rate. Decision average class-territory rates are capped from the otherwise calculated average rates, that have been adjusted through tempering class-territory relativities, so that no class-territory rate changes by more than +five percent above the statewide average rate change. In years when territory definitions change, this cap is applied to the prior year rate under the former territory definition, and captures any changes to the rate that result from assignment to the new territory. Stage 2 capping limits changes for class-territory rate by an additional +eight percent above the statewide average change for changes resulting from biennial territorial reassignments of municipalities. The total rate change is limited to +thirteen percent. Ms. Scott testified that under the current system, average rates for a municipality that stays within the same territory can only increase five percent above the average increase, but that if the municipality moves to a higher rated territory the average can rise by an additional eight percent.

The AIB filing notes that capping limits the recognition of deteriorating loss experience in the rates. It also concludes that capping has become almost irrelevant in recent years, because the increase in the number of risks that are tempered means that the variation in relativities that produce the average rates has decreased, and now produces less variation in indicated rate changes by class and territory. When underlying relativities are almost the same from year to year, the resulting average rates are unlikely to change differently from the statewide average change, and capping need not be applied. However, the AIB concludes, the relatively small changes in underlying relativities are not the result of stable variation in experience, but reflect the effect of tempering. The AIB notes that the effect of its recommended change to the A-2 and tempering levels will be limited by capping. In order to make rates more responsive to these changes, the AIB proposes that Stage 1 capping be limited to +eight percent, and Stage 2 capping to +five percent. The SRB recommends abandoning Stage 2 capping altogether. The AG takes the position that no changes should be made until the entire class-territory subsidy system is reviewed.

We are not persuaded, particularly for a year in which some municipalities will receive territorial reassignments, that it is reasonable to abandon totally a longstanding capping methodology that is designed to limit the effect of those reassignments. However,

we are persuaded that it is also reasonable to adjust capping for inexperienced driver classes consistent with our approach to revising the tempering for those classes. The principle that capping is an appropriate mechanism for limiting rate increases and the overall thirteen percent limit will not change. We are adjusting capping for inexperienced driver classes (17 through 26) to set the higher eight percent limit for Stage 1 capping, and the lower five percent limit for Stage 2 capping. For inexperience drivers, increasing the limit at Stage 1 will help improve the relationship between indicated and capped rates. No change will be made in the capping percentages for other driver classes.

vi. Interclass Constraints

This year, the AIB and the SRB recommend that the Commissioner reactivate the twenty-year phase-in of territorial rating in the balancing of interclass constraints, established in the *Decision on 2003 Rates*, but suspended in the *Decision on 2004 Rates*.. The AG opposes this proposal, and, instead, recommends that the Commissioner freeze the balancing at the current level and cease any further phase-in until the issue of overall subsidies in the rates is addressed.

As a final step in deriving the manual rates, which are the basis for calculating the premiums that individual policyholders actually pay, a series of interclass constraint rules are applied. Interclass constraints were introduced in the rate setting methodology in 1982, and were applied in the same manner from rate year 1988 through rate year 2002. The purpose of interclass constraints is to ensure consistency and reasonableness of rates between driver classes. As an example, if the otherwise determined Class 10 (experienced operator) rate is greater than the Class 18 (inexperienced occasional operator licensed for less than three years) rate in a given territory, the Class 10 rate is set equal to 95 percent of the Class 18 rate. Because interclass constraints are not intended to change the overall rate level, an off-balance factor is then applied.³¹ Prior to the *Decision on 2003 Rates*, the off-balance factor was determined as a ratio of the statewide average rates with and without the application of the new constraints.

³¹ The ratesetting process develops an average rate level based on the experience of all drivers. That overall rate level is expected to cover insurers' losses, expenses, and underwriting profits. If manual rate calculations result in rates that are higher than the overall rate, off-balance factors are applied to ensure that the overall rate level is unchanged.

In the 2003 rate proceeding, the AIB sought to modify the methodology for determining the off-balance factor by shifting from a single statewide adjustment to an approach that adjusts each territory separately. The AIB's primary stated reason for proposing a change in the off-balance methodology was the methodology's unexpected effect on territory rate levels, which created additional subsidies in some territories. The AIB noted that the problems with a statewide adjustment surfaced in 1995, when an additional territory (Territory 27) was created. Although Territory 27 was expected to be the lowest rated territory, the manual rates did not reflect the rate differences predicted by a pure premium analysis, and, in some cases, were higher than those for Territory 1. The AIB asserted that the rationale for interclass constraints did not include the goal of increasing the subsidies in the rates but that, since 1995, its analysis of those subsidies has identified the effect of the interclass constraint methodology. The AIB noted that, in some cases, constraints had a more significant subsidization effect than mechanisms that were specifically intended to create subsidies, specifically the flat loading of the residual market deficit and the tempering and capping of class/territory relativities. Further, the AIB argued, interclass constraint subsidies were not consistent with subsidies produced by those explicit mechanisms. In addition, the AIB argued that the previously-used interclass constraint methodology altered the intended rate change that should result from the Commissioner's methodology for distributing the statewide decision rate across territories and classes.

The AIB also recommended that, in the interests of rate stability, the off-balance approach be changed from a single statewide adjustment to separate territorial adjustments over time. The Commissioner concluded that the interclass constraints should be phased out over a twenty year period. She also ordered the parties to examine more fully the issues of the interplay of the territorial rating system with the impact of these manual rate adjustments.

In the *Decision on 2004 Rates*, the Commissioner suspended the phase-in of the shift in the method of determining interclass constraints, on the ground that, even though implementation of interclass constraints was not intended to subsidize territorial rates, the parties had not presented a full examination of the issues of the interplay of the territorial rating system with the impact of these manual rate adjustments, as they had been directed

to do. The Commissioner concluded that, without further examination, additional tempering of these constraints must be discontinued.

This year, the AIB and the SRB urge reimplementation of the phase-in. The AG opposes it, for the same reasons that he has in the past, and urges the Commissioner to freeze territorial balancing at the current level and prohibit any further phase-in until the issue of overall subsidies in the rates is addressed.

The AIB has proposed development of an alternative approach to identifying subsidies in the rates, through development of a class/territory grid structure. The AG agrees that such an analysis would serve to make subsidies more transparent and prevent unexpected results. We agree that such an approach is preferable to the current system. Accordingly, as we did last year, we make no further change in the off-balance methodology this year, pending review of the entire subsidy methodology.

The parties are hereby ordered to cooperate in the development of a class/territory grid structure or matrix that can be used to develop rate subsidies and serve as a basis for tempering or other adjustments in the future.

vii. Advanced Driver Training

The SRB recommends a three-year trial program that would give a premium credit of five percent on the BI, PIP, PDL and collision coverages for drivers, who successfully complete an Advanced Driver Training Course. It recommends that it be off-balanced in the 2005 rates based on an estimate of the number of drivers likely to complete such a course in 2005. Ms. Blank testified that the program, although fairly expensive, provides more hands-on driving experience than the typical driver's education school, and has been successful in Vermont.

The AIB does not object in principle to offering such a credit but argues that, because of the many unresolved issues about the program, adoption at this time would be premature. The AIB notes that the SRB filing does not provide detail regarding this program in its filing, and raises the question as to whether the Registry of Motor Vehicles has the sole authority to approve this training program. It also notes testimony relating to the need for legislative action.

The SRB's proposed credit offers a novel expansion of the credits for driver education training that are now offered to inexperienced automobile operators and to motorcyclists who complete approved courses. As a matter of public policy, it is important to offer encouragement to inexperienced drivers, those with less than seven years driving experience, to participate in training programs that will improve their basic skills. If such programs, by teaching greater understanding of driving hazards, succeed in reducing accident rates, injuries to drivers and passengers, and the costs associated with accidents, they will have a positive effect on all Massachusetts motorists. Although, as Ms. Blank testified, additional details are needed on the proposed scope of the program, and the procedures that must be established for successful operation in Massachusetts, we approve the implementation of the proposed discounts for inexperienced operators who successfully complete advanced driving training programs.

Currently, the Private Passenger Automobile Insurance Manual sets out procedures for classifying drivers based on completion of driver training programs, and defines what is considered a satisfactory program for that purpose. It notes that, for Massachusetts drivers, the course is prescribed by the Registry of Motor Vehicles, and sets out rules for determining when a course completed in a state other than Massachusetts satisfies those standards. The premium discount for completion of an advanced driver training course should be estimated on a basis consistent with the discount for completion of basic driver training. The parties are ordered to work with the Registry of Motor Vehicles to expedite approval of an advanced driver training course, with the goal of making it available to inexperienced operators in 2005, and to incorporate an appropriate discount into the Manual. We encourage the parties to explore other possible ways to improve operator skills, with the goal of reducing accident frequency and severity.

III. COMMISSION EXPENSE PURE PREMIUM

1. Background

Pursuant to G.L. c. 175, § 113B, the Commissioner must identify a specific dollar amount for the commission expense pure premium ("CEPP"). The CEPP must be set at a level that will cover the reasonable expenses producers incur in connection with the sale of private passenger automobile insurance. *Decision on 2004 Rates; Decision on 2003 Rates*. The set dollar CEPP amount then is used as a basis for developing commissions as a

percentage of the premium for various coverages, utilizing a formula that weights CEPP for each coverage. *Id.*

2. The Parties' Recommendations for the 2005 CEPP

a) MAIA

MAIA recommends a CEPP of \$150.84 for 2005, based on the results of a cost study done by Tillinghast Towers Perrin ("Tillinghast") on its behalf in 2004 ("2004 Cost Study"). Its recommendation would result in an increase of about 32 per cent over last year's CEPP. MAIA asserts that its 2004 Cost Study is "substantially improved" over its 2002 Cost Study, and that it successfully accomplished the Commissioner's express request in 2003 for "sound data on agencies' historical costs and cost increases in reaching a determination of the CEPP."

The 2004 Cost Study is based on four sources of data: (1) expense information (including wages) taken from their federal tax returns for 2003 by 129 individual agencies writing private passenger automobile insurance in Massachusetts that participated in the study which, MAIA asserts, were randomly selected; (2) expense trend data from the US Bureau of Labor Statistics ("BLS") and the Department of Employment and Training ("DET"); (3) exposure information from the Commonwealth Automobile Reinsurers ("CAR") and (4) seasonality adjustment and effective date information from the Automobile Insurers Bureau ("AIB").

MAIA identified the following improvements in the 2004 Cost Study vis-à-vis the 2002 Cost Study. The 2004 Cost Study contains full data sets (including expenses, premiums, commissions and other data) from 77 percent of the agencies asked to provide expense information, while the response rate was only 14 percent in the 2002 Cost Study. The 2004 Cost Study utilizes actual exposure data as provided by CAR for all participating agencies, while some of the agencies participating in the 2002 Cost Study submitted only estimated exposure data. The 2004 Cost Study uses a full set of data from a single year's worth of expenses, while the 2002 Cost Study used two years' worth of data from only a portion of the participating agencies. MAIA asserts that expense data used in the 2004 Cost Study allows for more consistent data evaluation among agencies than was possible in 2002. The 2004 Cost Study includes actual 2003 wages and thus, MAIA asserts, provides

a sounder basis for wage allocation to private passenger automobile insurance per agency than did the 2002 Cost Study, which included and allocated wages based on data from MAIA's 1997 cost study.

The 2004 Cost Study was performed by dividing MAIA's 1,684 members member agencies into six categories, into which the members were sorted based on three "regions" of the state³² and two sizes of agencies ("large" and "small"), determined by the number of employees.³³ Agencies within each category were randomly sorted and contacted by the Tillinghast. Surveys were sent to approximately ten percent of the agencies within each category, 168 in all. A total of 129 agencies participated in the study, a response rate of 77 percent. Only agencies that were members of MAIA were part of the survey sample.

MAIA divided agency operating expenses into seven categories: wages, benefits, taxes, rent, office expense, travel expense and all other expenses. It assigned values to each category for individual agencies based on their federal income tax forms. To estimate the average costs per agency, it then divided the total expense dollars by the number of agencies that provided expense information. Because those costs relate to sales of lines of insurance other than private passenger automobile, MAIA then undertook to separate total costs by line of business. In doing this, MAIA allocated expenses to private passenger automobile expenses based on three factors: premiums, commissions and wages. For premiums, MAIA determined a private passenger automobile expense ratio simply by dividing the private passenger automobile premiums by the all-lines-combined premiums for each agency. The same approach was used to create a commissions ratio. MAIA allocated wages to private passenger automobile insurance business by grouping job titles into three categories. Category A wages were defined as wages related to job descriptions that are primarily related to personal lines insurance. Wages related primarily to commercial lines business were termed Category B wages. Category C wages were wages related to all other job titles.

Category A wages were allocated to private passenger automobile insurance business based on an agency's private passenger automobile to personal lines ratios for

³² The geographical regions were the same as those used in the 2002 Cost Study.

³³ Agencies with four or more employees were classified as "large," as in the 2002 Cost Study. According to MAIA, 35 percent of its member agencies are in this category.

premiums and commissions. Category C wages were allocated to private passenger automobile insurance business based on the average of an agency's private passenger automobile to all lines ratios for premiums and commissions. Category B wages were not allocated to private passenger automobile insurance business. The average of the private passenger automobile premium and commission allocations was also applied to rent, office expenses, and other expenses. The private passenger automobile wage allocation was applied to wages, benefits and travel expenses, and the private passenger automobile commission allocation was applied to the remaining expense category, taxes.

b) The AG

The AG recommends that MAIA's proposed increase be denied because MAIA has not provided reliable or sufficient data to justify such increase.

c) The SRB

The SRB recommends that MAIA's proposed CEPP should be denied based on the paucity of dependable data in the 2004 Cost Study. The SRB recommends applying a one-year trend factor to the 2004 CEPP to reflect likely increases in agency costs next year. Arguing that the data presented by MAIA is demonstrably unsound, the SRB recommends that trending from the 2004 decisional value is a better practice than trending from the flawed data underlying the 2004 Cost Study.

In its initial filing, the SRB's trend procedure produced a slightly higher CEPP (\$119.14) than its final recommendation of \$119.02. In that filing, Caleb Huntington, the SRB's witness, suggested using "MAIA trend factors and weights, with the exception of the wage weight," which he reduced, thus applying the higher wage factor to fewer expense items than did MAIA. However, after considering MAIA's arguments that the SRB re-weighting might have been inappropriately coarse, Mr. Huntington revised his trend methodology and recommended that the Commissioner "adopt the trend weights used on Exhibit 6, sheet 1b of MAIA's Rebuttal Filing, and...use fitted values of the cost indices, taken from Exhibit 6, sheets 2-12 of [that filing]." As Mr. Huntington explained, "[t]here is not historical data available for the period of 2004 to 2005 over which the SRB is trending, so use of fitted values exclusively is more appropriate . . ."

The SRB notes that no party has criticized this revised method for trending last year's CEPP to projected 2005 needs. Thus, the SRB argues that this revised method is a reasonable and appropriate way to update the current commission level. The SRB asserts that the resulting value of \$119.02, its recommendation for the CEPP in this case, can be expected to provide both consumers and agencies with a commission level that is neither excessive nor inadequate.

3. The Parties' Arguments

a) MAIA

MAIA argues that the AG cannot raise the issue of basing cost studies on federal income tax returns, without tax return backup, because it has been relied upon by the Commissioner in the past. MAIA also asserts that the AG offers no significant new evidence or other good cause to depart from this methodology. Moreover, MAIA argues that, when tax return data was supplied by over half of the participants in the 2004 Cost Study, this data confirmed the accuracy of the "other expense" data in the 2004 Cost Study to within 0.5 per cent. MAIA also observed that the proportion of expenses deducted under the "other expenses" category by study participants was less for them than for taxpayers generally for each type of tax return filed. MAIA argues that the AG's recommendation to omit the "other expenses" category is therefore, unsupportable.

MAIA asserts that the AG's argument to exclude "other expense" values entirely can result only in an unreasonably biased, deflated and therefore unreliable CEPP recommendation. Indeed, MAIA notes that the AG's recommendation of a 2005 CEPP of \$114.00, a flat rate, is not supported by the analysis of his own expert, Stacey C. Gotham, MAAA, FCAS.

MAIA remarks that the SRB's approach this year, trending from the 2004 CEPP, ignores the significant difference between the background against which the *Decision on 2004 Rates* was written and the situation this year. When the Commissioner set the 2003 CEPP, MAIA argues, she relied on data in MAIA's 2002 Cost Study since it was "the best available source of information on agent expenses." In setting the 2004 CEPP, MAIA states that the Commissioner then relied, implicitly, on the Cost Study done in 2002 by judgmentally trending forward from the 2003 CEPP to set the 2004 CEPP. In contrast, the

2004 Cost Study provides a recent cost study. Accordingly, MAIA argues, the Commissioner should continue to follow her past practice of relying on the most recent cost study in setting the CEPP. By ignoring the 2004 Cost Study, MAIA argues, the SRB ignores this history. Indeed, MAIA argues, the new 2004 Cost Study was conducted in an improved manner and should be considered the "best recent evidence available now."

MAIA asserts that the SRB has produced no convincing evidence for its contention that wages included in the 2004 Cost Study are "overstated" to include agency profits, and therefore, are an unreliable indicator of an agency's true wages for establishing the CEPP. Furthermore, MAIA notes that the SRB's expert was not a tax expert and his observation about the possible pitfalls in using data from federal income tax returns was not persuasive. Finally, it asserts that the wages reported by participants in the 2004 Cost Study are actually lower than the wages reported by the average of all Massachusetts insurance personnel.

MAIA argues that the SRB's recommendation that total agency expenses should be allocated to the business of private passenger automobile insurance based strictly on commissions is based on several unfounded and incorrect assumptions and ignores the history of how the Commissioner has set CEPPs in the past. MAIA also asserts that other criticisms of the SRB are invalid. MAIA argues that the SRB's comments with respect to agency size are irrelevant, that it has provided no competent evidence for a productivity adjustment, and that its contention that MAIA's proposed CEPP is unreasonable on its face is unsubstantiated by the evidence.

b) The AG

The AG recommends that the Commissioner deny MAIA's proposed increase and that she not adjust the CEPP for 2005. He argues that MAIA has failed to provide reliable or sufficient data to justify its proposed increase.

The AG filed a Motion to Compel Discovery of certain documents related to the cost study or, in the alternative, to compel production of a list of the agencies participating in the 2004 Cost Study. In response, the Commissioner ordered MAIA to include sections of the 2003 tax returns of the agencies involved in the 2004 Cost Study, itemized lists of "other expenses" that the agencies had reported in the study and documentation of the "bad debts" claimed by the agencies. MAIA produced documentation for 66 of the 129 agencies

that participated in the 2004 Cost Study. The AG noted that several of the 66 agencies only provided an itemized list of "other expenses" or failed to provide the "other expense" itemization at all. Information that substantiated "bad debts" claimed was provided for only two of the 33 agencies involved in the 2004 Cost Study who listed values in that category.

The AG argued that he found the 2004 Cost Study to be unreliable because of certain unexplained atypical values, such as the much greater salaries reported by three of the small agencies (agencies having fewer than four employees). The AG also noted that seven of the agencies submitted numbers that inexplicably were rounded to the nearest thousand or hundred dollars, and that MAIA did not contact these agencies to determine whether these values were accurate, even though the IRS requires taxpayers, if they round dollar amounts, to use the nearest whole dollar. Generally, the AG complained that MAIA failed to verify the majority of the values listed in the 2004 Cost Study or to view the agencies' tax returns in order to prevent any errors that may have arisen due to confusion on the part of the agencies. The AG also noted that several discrepancies existed between the information the agencies provided for the 2004 Cost Study and the information that the agencies listed on their tax returns, thereby casting further doubt on the accuracy of the data.

Furthermore, the AG stressed that MAIA failed to distinguish sufficiently between the costs agencies incur in connection with private passenger automobile insurance and the costs associated with other lines of insurance and business. This is because, the AG asserts, MAIA simply multiplied the percentage of each agent's private passenger automobile insurance business times the total expenses for that agent. The expenses related to other lines of insurance, the AG asserted, included travel expenses, which MAIA's expert witness, Katherine Barnes explained were stated for the entire agency; commissions and automobile expenses, which the AG asserted generally are associated with other lines of insurance; settlement of lawsuits; entertainment and depletion. The AG also noted, in passing, that several agencies in MAIA's membership base engage in other businesses, such as accounting and real estate sales, but that the participation of such agencies in the 2004 Cost Study could not be confirmed since the agencies in the study are anonymous. Since Ms. Barnes did not review the entirety of the tax returns of the agencies

or itemized lists of "other expenses," the AG was not convinced that expenses for these other businesses were properly eliminated.

The AG found other flaws with the 2004 Cost Study. For example, MAIA did not prepare any material to describe its study methodology, as Ms. Barnes admitted. Another flaw was that Ms. Barnes took her sample only from the members of MAIA, thereby potentially missing the possible impact of data from hundreds of Massachusetts agencies that are not MAIA members and possibly skewing this result. No attempt was made to adjust for this circumstance.

The AG also found fault with the 2004 Cost Study because Ms. Barnes failed to determine whether the agencies sampled contained an adequate number of Exclusive Representative Producers ("ERPs"); Ms. Barnes was not even sure of the proportion of ERPs in MAIA's membership. The AG argues that the 2004 Cost Study is defective because Ms. Barnes failed to determine whether the agencies sampled contained ERPs in a number proportionate to their participation in the Massachusetts private passenger automobile insurance market, since, according to the AG, "ERPs have different expenses than [sic] other agencies."

The AG argues that the 2004 Cost Study did not distinguish appropriately between "small" agencies (fewer than four employees) and "large" agencies (four or more employees). One problem area concerned how the MAIA membership list treated part-time employees. Moreover, in a footnote, the AG commented that MAIA also failed to determine whether the employees listed in the membership were, in fact, engaged in the business of private passenger automobile insurance; if not, they would not be appropriate for consideration in making the CEPP calculation.

The AG shares with the SRB a concern that large agencies are not represented adequately in the 2004 Cost Study. The AG asserts that this possibility is demonstrated by the fact that the average number of employees in the large agencies that participated in the survey was 7.33, compared to an average of 8.49 employees for large agencies in the total MAIA membership.

The AG also took issue with the failure of the 2004 Cost Study to make a productivity adjustment to take into account the work force's increased productivity as a

result of technological improvements. The AG argued that the justifications made by Ms. Barnes for not including a productivity adjustment were not persuasive.

The AG argued, in conclusion, that MAIA's recommendations do not meet the statutory requirement of G.L. c. 175, Section 113B, as "adequate, just, reasonable and nondiscriminatory." The AG avers that MAIA has presented a flawed study that uses unreliable and unsubstantiated data.

With respect to the SRB's argument that the CEPP for 2005 should be derived by trending the Commissioner's 2004 decision pure premium, the AG argues that the SRB's recommendation to apply a 1.0451 trend factor to last year's \$114.00 CEPP to recommend a CEPP for 2005 of \$119.14 is contrary to standard actuarial practice. The AG argues that it is much more appropriate to trend from historical data than to trend from a decisional value and that the SRB's suggestion of simply trending the decisional value of 2004 will result in a rate that fails to reflect any actuarially sound estimate of the expected value of the agencies' costs. In conclusion, the AG argues that the Commissioner should base the CEPP on what the AG argues are sound actuarial evidence and should not allow MAIA an increase in rates when it has been unable to produce useful and accurate data to justify an increase in the CEPP.

c) The SRB

The SRB recommends that both MAIA's and the AG's proposed CEPPs be rejected. The SRB observes that, although MAIA discusses various methodological differences between the 2002 Cost Study and the 2004 Cost Study, it does not consider any difference in the method used for sample solicitation in those studies. The SRB asserts that MAIA's correspondence with its members contained a "stark message"³⁴ and "an urgent plea for membership action,"³⁵ which may have resulted in biased reporting by the agencies and, thus, led to a higher recommended CEPP.

The SRB asserts that Ms. Barnes's testimony that over 85% of insurance agencies in Massachusetts are members of MAIA was largely based on a nonspecific and

³⁴ The SRB observes that all MAIA members apparently received a letter from Francis A. Mancini, its President and CEO, and Robert J. Vaudreuil, Chairman of MAIA, indicating that agency responses to the 2004 Cost Study were important because, "Our opponents are looking for every opportunity to cut your commissions to the bone."

³⁵ The SRB notes that MAIA told agencies that "Your private passenger auto Insurance commissions and your income—and every Massachusetts agent's future—are at stake."

unsubstantiated remark made to her “a year or two ago” by Francis A. Mancini, president and CEO of MAIA. Furthermore, the SRB further asserts that Ms. Barnes’ derivation apparently assumes that non-MAIA agencies produce roughly the same number of exposures as do MAIA agencies. The SRB asserts that it is unclear what other assumptions may have been made and whether Ms. Barnes’ independent calculation actually produces a number similar to Mancini’s earlier estimate of 85 percent. The SRB thus questions whether the MAIA membership response of 129 surveys constituted a truly representative distribution of the variety of agencies that do business in the Commonwealth. Because no data or information was provided regarding any alleged similarities or differences between MAIA agencies and its non-member agency counterparts, the SRB expressed a lack of confidence in the representative nature of the 2004 Cost Study data. Noting that the Commissioner is charged with the setting of a CEPP for *all* Massachusetts agencies, not only for MAIA members, producing private passenger automobile insurance, the SRB therefore counseled against using MAIA’s data.

The SRB commented that much time was expended in this proceeding trying to determine whether the “wages” reported by the agencies that participated in the 2004 Cost Study may have included certain amounts that would be classified more correctly as “profits,” and that MAIA “obfuscated” this issue. Based on its review of the 2004 Cost Study, the SRB concluded that MAIA, inappropriately, had not excised the “taint” of profits from what should be exclusively expense data in the 2004 Cost Study. To support its position, the SRB reviewed a number of examples that it deemed represented “significant differences” between the terms “taxable wages” and “labor expenses.” Contending that it is eminently clear that, by using unadjusted IRS wages, MAIA has made no attempt to exclude profits from the 2004 Cost Study, the SRB asserts that MAIA’s recommendation must be rejected because such profits should not be included in agency expenses when calculating an appropriate CEPP.

4. Analysis

The preferred method for selecting a CEPP is to examine recent cost study data, and consider adjustments to that data that appropriately reflect anticipated changes in costs

and expenses.³⁶ The Commissioner traditionally has based the CEPP on overhead expenses and labor rates. MAIA has submitted an advisory filing that recommends a CEPP of \$150.84, based on MAIA's 2004 Cost Study. This represents almost a 32 percent increase from the CEPP of \$114.00 that was established for 2004 rates. We note, at the outset, that unlike the AG, we recognize that agencies provide value to consumers of private passenger automobile insurance and are entitled to the reasonable compensation that is recognized in law and guaranteed to them by G.L. c. 175, § 113B.

Our review and evaluation of the 2004 Cost Study, however, has raised a number of concerns. Of particular concern is the lack of independent verification of data that was self-reported by the MAIA member agencies. Although Ms. Barnes testified that she performed some follow up after the data was reported, there was no testimony that this follow up improved its validity. Failure to perform follow-up is particularly unsettling in light of concerns about the reliability of some values in the 2004 Cost Study. For example, values such as the much greater salaries reported by three of the small agencies appear to be atypical, and were not investigated or explained. Although MAIA's 2004 Cost Study is an improvement on previous studies, the lack of comprehensive independent verification undercuts its reliability and, hence, its persuasiveness.³⁷

We are also not persuaded that MAIA's 2004 Cost Study is sufficiently focused on the expenses and costs involved solely in the private passenger automobile insurance business. Many of the values are not narrowed sufficiently to the expenses and costs specifically related to the private passenger automobile insurance business. For example, Ms. Barnes testified that the wages of employees involved in writing life or health insurance business would be incorporated into the wages that were reported by the agencies on the survey forms. The focus in setting a CEPP must be on the expenses of agencies involved in the business of private passenger automobile insurance, not on the expenses of insurance agencies generally.

³⁶ We also note that in 1995, in the proceedings to determine rates for 1996, the parties stipulated that prior methodologies for establishing the CEPP would have no precedential effect.

³⁷ Although we are somewhat concerned about the inflammatory nature of some statements made in the materials that accompanied MAIA's 2004 Cost Study, we do not reject the study on the basis of bias, but we recommend that MAIA avoid such colored statements in soliciting participation in future studies that it might conduct.

Similarly, we are uncertain whether the manner in which MAIA's 2004 Cost Study distinguished "large" from "small" agencies was meaningful. We note that MAIA's study did not determine whether all of the employees listed by the participating agencies were, in fact, engaged in the business of private passenger automobile insurance, rather than other lines of insurance.³⁸ When asked why the 2004 Cost Study did not distinguish a "large" from a "small" agency based on the number of exposures written by the agencies, Ms. Barnes responded that the number of exposures per agency was data that was not available for the entire MAIA membership. We question whether there may be differences that are significant to the calculation of a CEPP between an agency that has many employees but writes few private passenger automobile exposures and an agency with a few employees that writes a lot of private passenger automobile exposures. In the absence of answers to these questions, we hesitate to rely on MAIA's data correlated to the number of employees in an agency rather than to the number of exposures written by an agency. We are persuaded that distinguishing "large" from "small" agencies based on the number of private passenger automobile exposures written would yield more meaningful data within the context of setting the CEPP, which is intended to cover the reasonable expenses producers incur in connection with the sale of a private passenger automobile policy. We therefore recommend that MAIA collect data on this basis in future surveys.

Furthermore, we feel that a better cost survey would ascertain what percentage of agencies involved in the business of private passenger automobile insurance write through multiple carriers, and then make sure that data from an appropriate and representative sample of these agencies are included in the cost study. Faced with no evidence on this point, we hesitate to conclude whether this circumstance is significant, but it does give us pause with respect to relying on the 2004 Cost Study in setting the CEPP for 2005.

We note also that we have not been reassured that MAIA's membership is fairly representative of the variety of agencies in the Commonwealth that engage in the private passenger automobile insurance business. Our concern involves both matters of size and geographical distribution. We recommend that MAIA obtain information from CAR so that it will know how representative its membership is vis-à-vis the entirety of the agencies

³⁸ We note that Ms. Barnes did not send surveys to agencies that did not write personal automobile insurance policies. Tr. 4, p. 11.

in Massachusetts that are involved in the private passenger automobile insurance business before conducting future studies, and that actuarially appropriate adjustments be made. In particular, we also question whether those agencies for which the business of private passenger automobile insurance represents only a minor portion of their current business are underrepresented in the MAIA survey. Such agencies may well be the very ones that did not choose to participate by completing the MAIA surveys. However, we are left in the dark about this matter since Ms. Barnes did not ask why some agencies did not complete the surveys.

MAIA's 2004 Cost Study did not determine whether the agencies sampled contained ERPs in a number proportionate to their participation in the Massachusetts private passenger automobile insurance market. However, in contrast to the AG, we find that there is no evidence in the record to suggest that ERPs have different expenses from those of other agencies. Nevertheless, we believe that a better survey would take cognizance of the existence of ERPs and then make sure that data from an appropriate and representative sample of these ERP agencies are included in the cost study. Faced with no evidence on this point, we hesitate to conclude whether this circumstance is significant, but it does give us pause with respect to relying on the 2004 Cost Study in setting the CEPP for 2005.

We also are concerned that full information was supplied for only 66 of the 129 agencies that participated in MAIA's 2004 Cost Study, or 3.9 percent of the MAIA membership. We find that the size of the sample is too small to provide a reliable base on which to estimate a CEPP for 2005, especially because of the uncertainty as to whether the MAIA sample is fairly representative of the total universe of agencies involved in the private passenger automobile insurance business.

We also question MAIA's use in the 2004 Cost Study of premiums as part of the way that agency expenses are allocated to private passenger automobile insurance business. As Mr. Huntington testified, premiums account for many expenses other than agency commissions, primarily among which, typically, are loss expenses. Commissions, on the other hand, largely reflect the expense to the agency of writing the business and therefore are a more direct measure of agency expenses. We find that commissions are the

more appropriate factor to use in allocating agency expenses to private passenger automobile insurance business. Furthermore, we find that commission specifically for private passenger automobile insurance business is the data that should be collected. Because commissions vary widely between lines of insurance, as Ms. Barnes testified, but are set for private passenger automobile insurance, using commissions specifically for passenger automobile insurance business should provide a reasonable basis upon which to allocate expenses. Moreover, the data should be collected on a per private passenger automobile insurance exposure basis; not on an agency basis. The best practice in future cost surveys would be to allocate agency expenses to private passenger automobile insurance business on the basis of commissions per exposure for private passenger automobile insurance business and then compare this data with data obtained by allocating agency expenses to private passenger automobile insurance business on the basis of premiums per exposure for private passenger automobile insurance business. Obtaining both figures will give the best indication of reliability of one or both of these calculations.

We also find that MAIA's failure to itemize what items constitute "other expenses" makes the 2004 Cost Study a less than reliable basis for setting the CEPP for 2005. We find that Schedule C of the federal income tax forms is not a good source to use in establishing a CEPP. We note that Ms. Barnes does not know "explicitly" what types of expenses, except for those otherwise listed on the forms, are also included in the "other expense" category and are not placed in the other six categories used in the 2004 Cost Study.

Another matter of concern is that the 2004 Cost Study used the amounts reported on federal tax returns as "wages" as an accurate accounting of the wages paid to employees. As Mr. Huntington testified, some of the agencies or producers would have discretion whether to report earnings as "wages" or as "profits" on federal income tax returns.³⁹ To the extent that this means that discretionary earnings could be reported as

³⁹ There was considerable discussion in the record this year about the relationship between "profit" and CEPP. The Underwriting Profits Case, Docket No. R-2204-12, is based in part on the premise that policyholders should benefit from the investment income earned by insurers on premiums before those premium dollars must be disbursed to cover losses and expenses. Because nothing in this record suggests that agencies or producers retain or invest policyholder funds, the concept of underwriting profits is not relevant in the context of CEPP. The principles underlying the underwriting profits provision do not apply to agencies.

"wages" for tax purposes on the tax forms, and, therefore, be accounted part of expenses under the methodology of the 2004 Cost Study, we agree with the SRB that the cost study *could* be based on expense data from the participating agencies that does not square with the concept of "reasonable" expenses that is appropriate within the context of setting a CEPP. In this regard, we note the exceptional salaries reported for three of the small agency participants in the 2004 Cost Study (\$700,000 for agency #29, described as "S3" in Exhibit 5 of the MAIA Advisory Filing; \$1,474,431 for agency #46, described as "S2"; and \$732,000 for agency #96, described as "S2"), concerning which MAIA proffered no insight or explanation. We express no opinion on the accuracy of the agencies' tax reporting, but conclude that the MAIA survey methodology uses "apples" as a measure of "oranges." We recommend that future surveys address this area of valid concern.

5. The AG's Motion for Sanctions

On September 28, 2004, the AG filed a Motion to Compel Discovery of certain documents related to the agents' commissions of producers or, in the alternative, to compel production of a list of the agencies participating in the 2004 Cost Study. By Order dated October 12, the Commissioner ordered MAIA to provide sections of the 2003 tax returns of the agencies involved in the 2004 Cost Study, itemized lists of "other expenses" that the agencies had reported in the study and documentation of the "bad debts" claimed by the agencies.

On November 5, the AG filed a motion seeking sanctions against MAIA, in which he alleged that MAIA had failed to comply with the discovery order entered in this matter on October 12. The AG argued that without the missing documents he could not properly evaluate the data in MAIA's 2004 Cost Study, the only evidence on which MAIA relies to support its request for an increase in the Commission Expense Pure Premium. As sanctions, the AG requested removal of the 2004 Cost Study from consideration in this matter, or an order denying it any weight as evidence. The latter, he argued, is appropriate because much of the data underlying the Cost Study remains unsubstantiated. Further, the AG asserted, no other sanction is available because production of the documents now would not allow sufficient time to evaluate the information before the deadline for submitting briefs. MAIA asked that the AG's motion be dismissed as untimely. By Order filed on November 15, both MAIA's request to dismiss the AG's motion as untimely and

the AG's request to remove the 2004 Cost Study from consideration in this proceeding were denied. The parties were informed that they could argue in their briefs any and all issues relating to the evidentiary value of the Cost Study, the weight to be given to it, and the application of sanctions.

The AG incorporated and renewed his motion for sanctions in his Brief on Commissioner Expense Pure Premium Issues, and we now address this issue. Relief in the form of a sanction removing the Cost Study from consideration in this proceeding is denied. With respect to the AG's other request for relief, we take no action other than noting that we also are concerned about the scant verification of the data in the 2004 Cost Study, as has been discussed in this Decision.

6. Conclusion

Although we find that MAIA's 2004 Cost Study does not provide a sound basis for setting the CEPP for 2005, we are persuaded that the CEPP for 2005 should be increased for several reasons. First, although we do not find that the 2004 Cost Study provides a sound basis for setting the 2005 CEPP, we note that it represents an improvement over past studies, and is adequate to persuade us that some upward adjustment is appropriate.

We are concerned that proposed reforms to the residual market may, at least on a temporary basis, increase agency expenses related to private passenger automobile insurance policies. We note that Ms. Barnes alluded to this in her testimony, stating that "if anything, the agencies would have more work to do per exposure in 2005, given the reform efforts that are happening now." Some agencies may need to purchase equipment or make other expenditures to comply with the new procedures for writing policies for the residual market. Agencies may also be required to deal with more than one insurance company and to comply with mandatory training obligations. They may also need to spend more time with consumers explaining to them the Massachusetts Automobile Insurance Plan. We also anticipate a level of inflationary pressures in 2005 that is similar to the level that led to the increase in the CEPP for 2004.

For all these reasons, we have determined that it is appropriate to select a CEPP of \$ 119.50. However, the parties are cautioned that this judgmental selection does not lessen the need for sound data on agents' historical costs and cost increases to support the

determination of a CEPP for future years. To that end, we have offered recommendations in this Decision with respect to future cost studies.

IV. UNDERWRITING PROFITS

A. INTRODUCTION AND BACKGROUND

The underwriting profit component of private passenger automobile rates is intended to address two goals: 1) to compensate investors in the insurance business for risks associated with that investment, by provisions that are expected to ensure a fair rate of return to them; and 2) to ensure that the rates charged to policyholders reflect insurers total income. Giving equal attention in the ratemaking process to each goal is essential. Insurers exercise choice in deciding where to invest capital; if their return on the risks they insure is not adequate, insurers will choose to deploy their capital in enterprises other than Massachusetts private passenger automobile insurance, potentially harming consumers by reducing the product choice available to them.

The fixed-and-established rates, set annually for policies that will be written during the following calendar year, are expected to cover losses and expenses that relate to those policies. However, those losses and expenses are not all incurred or paid in the calendar year in which the policy is issued. Insurers therefore hold premium income in reserve accounts from which they will pay future expected claim costs; they also hold surplus, funds that insurers are, by statute, required to keep in order to cover unforeseen liabilities. Insurers earn investment income on premiums during the period between the time they receive those funds and the time that such funds must be disbursed to pay claims and expenses, as well as on surplus funds. The underwriting profits provisions reflect, among other things, items such as investment and other income, including finance charge income, that may increase insurers' total receipts, and factors such as earned but uncollected premium ("EBUP") that reduce their expected income.⁴⁰

⁴⁰ The length of time an insurer holds reserves and must maintain surplus to cover liabilities varies with the type of coverage provided. As an example, in private passenger automobile insurance, bodily injury claims are resolved more slowly than claims for physical damage. Insurers receive less investment income on reserves for physical damage claims because they hold the funds for a relatively short time. Therefore, underwriting profit provisions are calculated separately for bodily injury, property damage liability, and physical damage coverages; a final recommendation is then developed based on a weighted average of these provisions.

Since the rate hearings for 1976, underwriting profits provisions have been set by applying mathematical models to financial data on the property casualty insurance industry. That year, the Capital Asset Pricing Model (“CAPM”) was introduced to determine profit needs. The CAPM is a method for determining the risk adjusted return which investors require to compensate them for the systematic risk of their investment. The resulting risk adjusted return is utilized in connection with other models to calculate the underwriting profits provision in the rates. Historically, the mathematical models have been applied to data that reflects the experience of the property casualty industry as a whole.⁴¹ The Myers Cohn discounted cash flow model, first proposed for use in the proceedings on rates for 1982, was used continuously, with some modifications, for that purpose from 1990 through 2003.⁴² Last year, the Commissioner adopted an internal rate of return (“IRR”) model for use in 2004, but declined to commit to its use in future years. Until the proceeding to set rates for 2004, underwriting profits provisions had been expressed as negative values in every year since the modeling process was adopted. Last year the AIB, for the first time, recommended underwriting profit provisions that were all positive values. It does so again this year.

The AIB again recommends using an internal rate of return (“IRR”) model to develop the underwriting profits provision. In support of its position, it offered the testimony of two witnesses, Kim Scott, FCAS, MAAA and Dr. Richard Derrig. The SRB also recommends use of an IRR model, but one that differs from the AIB’s proposed model. Its expert witnesses in this proceeding were David Parcell, a principal in Technical Associates, Inc. (“TAI”), a consulting firm and Cara Blank, FCAS, MAAA. The AG urges retention of the Myers Cohn model but identifies a calendar year accounting model (“CYAM”) as a more appropriate alternative to the IRR. One witness, Allan I. Schwartz, FCAS, MAAA, testified for the AG.

The parties’ final recommended underwriting profits provisions are summarized as follows:

⁴¹ The “whole,” for purposes of these proceedings, has no single definition. Estimates of the beta of equity, for example, traditionally rely on countrywide data for publicly traded property and casualty insurance companies; cash flows, however, may look only at the experience of companies offering private passenger automobile insurance in Massachusetts.

⁴² The Myers Cohn model is generally considered a present value model, in which the present value of premiums is equal to the present value of losses, expenses and taxes. The CAPM formula is used to calculate a risk adjustment to the risk-free rate.

	AIB	SRB	AG
BI	+1.11 percent	-0.14 percent	-5.19 percent
PDL	+1.15 percent	+1.62 percent	-2.27 percent
<u>Phys Dam</u>	<u>+5.00 percent</u>	<u>+2.33 percent</u>	<u>-1.26 percent</u>
Overall	+2.41 percent	+1.10 percent	-3.19 percent

This year, the disputes over the underwriting profits provision again relate to the choice of a profits model for use in 2005, the structure of an appropriate IRR model, and the particular inputs that should be used in the chosen model.

.B. THE PARTIES' CHOICES FOR AN UNDERWRITING PROFITS MODEL

2. The Parties' Recommendations

The AIB recommends use of an IRR model to develop the underwriting profits provision in the 2005 rates. The SRB also recommends an IRR model, but offers one that differs from that proposed by the AIB. The AG prefers a return to the Myers Cohn model and, in the alternative proposes a calendar year accounting model ("CYAM").⁴³ The specific characteristics of each party's model are addressed below.

a. The AIB

The AIB argues, first, that the Commissioner must set underwriting profits provision for Massachusetts that are more consistent with national results. It comments that material in the SRB's advisory filing surveying automobile insurance rate filings in five other states demonstrates that the underwriting profits provision in the 2004 Massachusetts rates are lower than such provisions elsewhere. Further, it asserts, the SRB's survey showed an average total return on equity of 14.40 percent, which is 6.7 percentage points higher than the total return on equity in the 2004 Rates. The AIB argues that Massachusetts can no longer set underwriting profits provisions that are nearly five percent lower than those in the states included in the SRB survey. The AIB asserts that its recommended IRR model is that which the Commissioner used, with two modifications, to

⁴³ The AG makes the same recommendation for the choice of a model this year that he made last year. The Commissioner's decision to adopt an IRR model for 2004 rather than the Myers Cohn model was upheld by the Supreme Judicial Court, 442 Mass. 793 (2004).

set the 2004 rates. It proposes that she again utilize that model, but include a judgmental provision of +5.00 percent for physical damage.

b. The SRB

The SRB offered two models in this proceeding, one in its initial advisory filing and a second in its surrebuttal filing. It argues that its models are responsive to concerns expressed in the *Decision on 2004 Rates*, in that they provide greater clarity, generate an underwriting profits provision that satisfies the statutory standards, and are a further step toward the goal of encouraging more insurers to participate in the Massachusetts automobile market. The SRB states that its initial model is similar to that proposed in last year's proceeding, characterizing it as a total return model that requires inputs for the opportunity cost of capital and expected asset returns. The model was changed, the SRB states: 1) to reflect that the invested assets supporting the policy consist of both policyholder premiums and investor-supplied capital; and 2) to apply a regulatory standard premium to surplus ratio of 2 to 1 to impute the investor capital required to support operations. This model was later revised to exclude policy financing from the underwriting profits calculation.

The SRB model assumes that premium should be sufficient to cover all losses and expenses, when discounted at the risk-free rate, an assumption, it argues, that is consistent with the theoretical basis of the Myers Cohn model. That assumption, it asserts, allows the model to operate on a prospective basis. The SRB asserts that its revised model, unlike others proposed in this proceeding, responds correctly to the presence or absence of financing. It points out that both the AIB and the AG profit models produce higher profit and risk margins when finance charge income is removed and the policy premium is paid in full at inception. It argues, as well, that its model has the advantage of relative simplicity and explicit recognition of premium as a principal asset in support of policy obligations.

The SRB's revised model assumes that all premium is paid in full at policy inception. It asserts that an approach that assumes that policyholders decide not to finance their purchase results in the lowest profit and risk provision with respect to financing. It argues that its model demonstrates that finance charges are not quite sufficient to overcome the effect of delayed remittance of premium and, by omitting finance charges altogether,

does not compensate insurers for underpriced financing. The SRB reasons that financing creates additional expenses for servicing policies and generates lost investment opportunity, both of which are the bases for finance charges and other servicing fees. Its revised model, it asserts, is generous to policyholders because it assumes that the company has full use of the policyholder funds for investment. The SRB argues that the basic policy price should not increase because some policyholders choose to finance or because insurers require less financing than they are entitled to charge. In support of its decision, the SRB points out that companies are not required by statute to accept premium payments in installments or to provide financing arrangements, and must obtain the Commissioner's approval of finance charge plans. It also notes that G.L. c. 175, §113B makes no specific reference to finance plans. The SRB argues that the other parties to this proceeding recognize that finance charges and other service fees are not premium supporting underwriting. In addition, the SRB takes the position that removing the finance charge from the underwriting profits calculation is a reasonable approach because most companies price their product as if the policy were paid in full, viewing finance charges as an offset to expenses. The SRB believes that to the extent that financing policies created additional expense to companies, finance charges should be used to reduce the estimated company expense provision in the Commissioner's rate.

c. The AG

The AG supports continued use of the Myers Cohn model to develop the underwriting profits provision. He asserts that, for 2005, the IRR models proposed by the AIB and the SRB would increase profits over a "standard" Myers Cohn calculation by, respectively, \$224 million and \$172 million. Those funds, he asserts, do not cover legitimate losses and expenses but provide insurers with discretionary funds. The AG notes that the Myers Cohn model was developed for use in a regulatory setting, and reflects the interests of both policyholders and shareholders. In contrast, he states the IRR model views profit and return entirely from the perspective of the shareholder. Further, the AG argues, the Myers Cohn model has produced profit provisions that, on average over the past sixteen years, match profits that insurers earn in a competitive market.

As an alternative to the Myers Cohn, the AG recommends a CYAM that, it argues, avoids the complexities of IRR models. His witness offers two alternative CYAMs, one

using the same inputs as an IRR model, including a cost of capital, asset rate of return, investment and underwriting tax rates, and premium to surplus ratio. The second model requires two inputs, an operating profit target and investment gain on reserves value. Both calculations include finance charges, Earned But Uncollected Premium (“EBUP”) and other income. The AG, responding to the Commissioner’s statement in the *Decision on 2004 Rates* that a CYAM might be a practical model for determining underwriting profits, describes the CYAM as practical, simple and transparent. He notes as well that its results are produced through a single equation that can be calculated in a single page, that it requires far fewer numerical inputs than the IRR models proposed by the SRB and the AIB, and does not require extensive complex computer programs.⁴⁴ A CYAM, the AG argues, is superior because it is conceptually and operationally simpler than IRR models, and permits a more direct understanding of the relationship between insurers’ financial structures and underwriting profits provisions.

The AG argues that the use of a CYAM to set the underwriting profits provision would be consistent with ratemaking procedures in other states. He states that the two other states that actively regulate rates, North Carolina and Texas, use a CYAM to determine the profit provision, and that California requires insurers to use a CYAM to calculate the profit provision in rates. He notes that New Jersey permits use of a CYAM, as well as a discounted cash flow (“DCF”) model, and that the Insurance Services Office (“ISO”) at one time used a CYAM to determine profit for private passenger automobile insurance. The AG points out that the SRB’s survey of rate filings made by ten insurers in four states, Connecticut, New York, New Jersey and Maryland showed that seven of the ten used the CYAM; two used different forms of a DCF model and one an IRR model. In contrast to the widespread use of a CYAM, the AG argues, no regulator or insurer uses either the AIB or the SRB IRR model.

The AG states that the CYAM realistically represents insurers’ financial conditions, accurately models invested assets and asset returns, and reflects the continuous writing of policies and payment of losses. The CYAM, he notes, uses calendar year data for its key inputs that reflect the ongoing nature of the insurance business. Although calendar year

⁴⁴ The AIB states that the CYAM calculation using inputs such as a cost of capital consists of 54 numbers, while the AIB model print-out includes about 5,000 numbers and the SRB’s more than 4,000 numbers.

values are used in single policy multi-period IRR models, the AG argues that their use in that context creates a mismatch that produces anomalous results.

2. The Parties' Critiques of the Recommended Models

a. The AIB

The AIB characterizes the SRB's underwriting profits model as a hybrid, neither a DCF model like Myers Cohn nor an IRR model like that offered by the AIB. It notes that the SRB first presented its hybrid model in its September 17 advisory filing and offered a later version in its surrebuttal filing. Although the AIB comments that the timing of the filings is such that the model may not have been definitively reviewed by the parties, it states that the problems with both models make them not useable to set 2005 rates.

The AIB identifies what it views as six modeling errors or problems in the SRB's hybrid models. It argues that the SRB concedes that its model is not an IRR model, because it separately discounts various flows at the cost of capital, while an IRR model combines all cash flows into a single net cash flow to and from the shareholder, and then discounts that single net cash flow at the cost of capital. The AIB argues that the SRB's model is also not a DCF model because it considers flows, like investment income flows, that are of interest to shareholders, but not to policyholders. In addition, it asserts, the SRB's hybrid model discounts flows at the insurers' IRR, not at the discount rates relevant to policyholders. The AIB argues that the SRB's model is not generally recognized in the financial world, and should not be used to set 2005 rates. It further comments that little documentation supports the SRB models; in contrast, it asserts, the AIB has developed a classic IRR model and supported it with documentation that clearly shows how it works.

Specifically addressing its contention that the SRB model does not include a single net shareholder cash flow, the AIB comments that, although the SRB witness testified that the flow to and from the shareholder is buried in the other flows, it is not obvious how that takes place. Further, the AIB notes, the problem was not corrected in the SRB's surrebuttal filing. The AIB argues that the SRB hybrid model shows investment earnings on assets that do not exist on a cash basis, specifically on accrued premium for which the insurer has not yet received cash. For that reason, it asserts, the model overstates cash assets and cash asset returns. The AIB notes that the SRB's revised model, which assumes that all premium is paid in full at policy inception, affects this issue, but does not reconcile

invested asset dollars and premium dollars. In addition, the AIB argues that the SRB's initial model overstates the contribution of premium flows to the total present value cash flow, no matter what the premium flow represents. It states that viewing the premium flow's contribution to the discounted unpaid loss and expense flow as actual cash, as the SRB does in its revised model, double-counts premium. Further, it asserts if the contribution is not actual cash, then a portion of the invested asset flow is non-existent, and the total of such flows is overstated. Again, the AIB argues, the SRB did not correct this error.

The AIB further criticizes the SRB's hybrid model because it includes net negative cash amounts and flows that imply that premium is inadequate to support losses and expenses. In particular, it notes that the SRB has not proposed a replacement to the problems that, the AIB argues, result from handling physical damage flows on a net basis. It asserts that the negative surplus, negative invested assets and negative investment income in the SRB's physical damage model constitute an absurd result that implies that premium does not support losses and expenses.

In addition, the AIB argues, the SRB's initial hybrid model produced irrational results, because it produced a higher indicated underwriting profits provision as the underwriting tax decreased, when economic logic dictated that, all else equal, it should produce lower results. It notes that the SRB corrected this error in its surrebuttal filing. Similarly, the AIB claims, the SRB's hybrid model produces lower underwriting profit provisions when premium is collected at policy inception, and no finance charge income is projected, that when premium is paid over time, with resulting finance charge income, when under current interest rates it should produce higher results. It notes that the SRB's revised hybrid model works only under the totally unrealistic assumptions that full premium is collected at policy inception and finance income is zero.

The AIB argues that the Commissioner should reject continued use of the Myers Cohn model, asserting that the *Decision on 2004 Private Passenger Rates* and the *2003 Decision on Workers' Compensation Rates* both declined to adopt it, and that the reasons underlying that declination are equally applicable in this proceeding. It asserts that the AG has offered nothing new in the evidentiary record this year to change the precedential value of those decisions. Further, the AIB argues, the input values to the Myers Cohn model

offered by the AG would produce a grossly improper result, in part because they include a positive value for the beta of liabilities. It states, as well, that the AG's input values should be rejected because they were not supported by expert testimony. The AIB notes that the AG's witness, Allan Schwartz, FCAS, MAAA, did not know how values provided to him by Richard Cohn had been calculated. It points out that Professor Cohn was not available for cross-examination and that therefore little weight should be given to his calculations. In addition, the AIB argues, the Myers Cohn model misuses the Capital Asset Pricing Model ("CAPM") to develop the beta of liabilities. It asserts that the CAPM was designed to price equity securities, not debt securities, such as bonds, and is inappropriate for pricing insurance liabilities which are neither publicly traded nor otherwise priced by a functioning market. Finally, the AIB argues, the AG's witness applied the Myers Cohn model in a new and erroneous way, varying the beta of liabilities by quarter. It argues that such a flexible approach to implementation of the Myers Cohn model should not be used to set 2005 rates.

The AIB criticizes the accounting models proposed by the AG, asserting that they were offered as reasonability checks on the AG's Myers Cohn model recommendations, but that no party directly recommends the use of an accounting model to set 2005 rates. Therefore, it concludes, accounting models are irrelevant and should be ignored. Addressing the substance of accounting models, the AIB argues that they violate modern financial theory because they ignore the concept of the net present values of expected cash flow. It asserts that the Actuarial Standard of Practice, No. 30, requires that the elements that are used to calculate the profit provision should all be based on expected future values. The AIB argues that the AG's accounting models mix historical accounting data that do not relate to the expected value of future cash flows and book accounting concepts with cash concepts. Further, it asserts that accounting models are too flexible to have any reliability, pointing out that the model utilized by the AG's witness produces different results with different inputs. It criticizes the AG's choice of inputs to his models, noting differences between values selected for use in an accounting model and those used in the Myers Cohn model. The AIB asserts that no rules or principles constrain the choice of inputs to accounting models, because such models themselves are not based on underlying theory or principles. It characterizes the apparent agreement among the AG's models as illusory, asserting that it results from manipulation of the input values, and would change

as those values change. The AIB argues that at least one of the accounting models proposed by Mr. Schwartz is sufficiently flexible to have its output contradict its input.

b. The SRB

The SRB criticizes the AIB's IRR model because it produces similar results for the BI, PDL and Physical Damage lines, and therefore does not recognize the different levels of investment income opportunity associated with each. Its witness disagreed with the AIB's position that the similarities result simply from its particular inputs, noting that individual company filings in other states show significant differences between the liability coverage profit and risk margin and the physical damage profit and risk margin. The SRB also argues that the AIB's model lacks clarity, noting that the SRB's witness was unable to determine the reasons for the similar results between coverages. The SRB also points out that the AIB has again effectively valued physical damage losses on a gross basis, rather than net of salvage and subrogation. The SRB argues that the Commissioner rejected the AIB's approach last year and should do so again this year. Further, it asserts, the AIB has ignored values produced by its model when it is not satisfied with the results, pointing out that the AIB's model results do not support its recommended five percent profit margin for the physical damage coverages.

The SRB recommends that the Commissioner reject the Myers Cohn model to set underwriting profits, arguing that it has demonstrated flaws in the model design and the AG's implementation which alternatively lead to inappropriately low profit provisions. The SRB argues that it has determined that the Myers Cohn model does not accurately reflect the proper treatment of finance charges because it improperly recognizes them as premium income for federal tax purposes, and considers them a source of investment earning subject to investment income tax. In contrast, the SRB treats finance charges as assessments to compensate for higher servicing expenses and lost investment income. Further, the SRB argues, the Myers Cohn model estimates the premium available for investment based on the premium financing rate while assuming that the risk free rate will be earned on premiums, as if that premium had been paid in full at policy inception. The SRB asserts that Myers Cohn does not differentiate between underwriting profit and risk margins for policyholders who finance and those who do not. It argues that its model

treats financing charges as payments to compensate insurers for the expenses of financing the policy which may lead to incidental premium.

The SRB asserts that the Myers Cohn model does not adequately account for risk, and may create the perception that risk is only associated with interest rates. However, the SRB argues, the prospective ratesetting process includes such inherent risks as error in an insurer's internal projections as well as external risks that may affect an individual company. To the extent that such risks are systematic, the SRB argues, they should be accounted for in the underwriting profits provision. Such risk adjustments, it states, should not generate additional profits for insurers but are intended to improve the likelihood that the expected underwriting profit will be realized. Failure to account for these risks, the SRB argues, will lead to inaccurate rates. The SRB further criticizes the Myers Cohn model because it incorporates a beta of liabilities, a concept that the SRB states is not recognized by the general financial or business community. In contrast, the SRB asserts, the cost of capital measurement in an IRR is "ubiquitous in the financial marketplace." The SRB argues that, absent outside sources, it is difficult to determine if the beta of liabilities is reasonable, and that potential entrants to the Massachusetts market are unable to determine whether they can earn a profit. In response to the AG's proposal to develop a Myers Cohn formulation that bases the risk-adjusted discount rate on the cost of capital, the SRB notes that his results, using that methodology, are remarkably close to the results using the beta of liabilities calculation. The SRB questions why this change was not made long ago, noting that it is contrary to the AG's assertion that an advantage of the Myers Cohn model is that it does not require an estimate of the cost of capital. The SRB argues that its IRR model is superior to the AG's calendar year accounting models because, unlike such models, it takes an economic view of the insurance business and recognizes the need to view the commitment of capital to Massachusetts as an ongoing business. At the same time, the SRB argues, no pricing mechanism should be incompatible with the concerns of a start-up operation. The SRB notes that individual companies frequently use CYAMs to develop rates in competitive states, but questions whether such models are simpler or more accurate than DCF or IRR models in a fix-and-establish ratemaking environment. However, if the Commissioner chooses to use a

CYAM this year, the SRB recommends a CYAM like the Metropolitan model included in its surrebuttal filing, rather than the AG's model.

c. The AG

The AG argues that neither the AIB nor the SRB model represents reality, and that both are inconsistent with data reflecting the business of insurance. He notes that both are single-policy models, which assume that the insurer has no assets and is not an on-going enterprise, even though the SRB's witness, Mr. Parcell, testified that insurers write policies throughout the year and for many years, and that surplus and invested assets are carried over from year to year. The AG argues that a model should reflect reality and should not be adopted until it can be shown to do so.

The AIB model, the AG argues, substantially understates the assets that insurers invest in the real world, and does not reflect their actual investment behavior. He asserts that it understates the ratio of invested assets to surplus, and does not recognize that in the real world the value of invested assets in an ongoing insurance business is greater than the sum of premiums and surplus in any given year. Because the AIB IRR model considers premium and surplus to be the only source of invested assets, it understates the funds that insurers invest. Further, the AG argues, data show that the insurance industry's invested assets are virtually identical to the sum of reserves and surplus. Increasing invested assets to a level that accurately reflects reported data is essential in order to estimate the income that insurers will receive from those investments. That income offsets the amount of underwriting profit that policyholders need to contribute in order to reach a target overall profit level.

In addition, the AG notes, the AIB's IRR model, by reducing the level of invested assets and, therefore, the amount of investment income, effectively makes investment income relatively unimportant. As a result, he asserts, the profit outcomes it produces for the various coverages are almost identical. However, whatever the current economic conditions, the investment return for bodily injury liability is expected to be higher than that for property damage liability, and for property damage liability than for physical damage. Therefore, the underwriting profit provision for bodily injury liability should be significantly lower than for property damage liability, and both should be lower than the

provision for physical damage. Because the AIB's IRR model does not produce that result, the AG concludes that it is flawed.

The AG argues that the SRB's first model overstates the shareholder contribution to surplus, incorporating funds that are not needed in the model and are not present in the real world. The model views investor-supplied capital as an investment in the insurance transaction. However, the AG asserts, the model shows a supporting surplus requirement of \$472 at time zero for the bodily injury coverage, but a shareholder contribution of \$1,321. Similarly, he notes, the shareholder contributions for the other coverages are far higher than the surplus requirement in the model. Therefore, the AG argues, the model requires policyholders to pay for shareholder funds that are unnecessary to support the policy and do not benefit them or the insurance transaction. The AG asserts that this flaw in the SRB's first model, like the AIB's failure to set a proper level for invested assets, does not represent reality and requires policyholders to pay higher underwriting profits provisions.

In response to the SRB's representation that it allocates surplus by employing a normative premium to surplus ratio of 2 to 1, the AG argues that the operative portion of its first model uses a much lower ratio of less than 1 to 1. He points out that the SRB's model requires an initial infusion of about \$1,340 in surplus from shareholders for an annual premium of \$1,000. In addition, the AG notes, the fundamental balance sheet equation that underlies insurers' real world operations sets assets equal to liabilities plus surplus. However, the overstated shareholder contribution in the SRB's first model means that assets are smaller than the sum of liabilities and surplus (shareholder contribution). On day one, the AG notes, the model requires shareholders to contribute \$849 over the surplus needed to support the bodily injury coverage, and slightly higher amounts more than the surplus needed for property damage liability and physical damage coverages. He argues that the SRB witness did not know where the excess contribution would go. According to the AG, it is apparent from the model that the shareholder contributions fund invested assets. He argues that under the model, policyholders must pay shareholders a return equal to the cost of capital for shareholder contributions that are not needed to support the policy, while those contributions earn a rate of return that is much lower than the cost of capital. That differential inflates the underwriting profit provision that

policyholders must pay. The AG concludes that the SRB's first model is unreasonable, and that removal of the excess shareholder contribution reduces the profit result by 2.76 percent.

The AG argues that the second SRB model is incorrect for two reasons. First, it eliminates premium flows and assumes that all premium is received up front, even though the SRB's witness agreed that policyholders as a whole do finance policies. In the real world, the AG notes, insurers receive premium over time. Second, it assumes that insurers collect no finance charge income and no other revenue.⁴⁵ Those omissions, the AG argues, are inconsistent with reality and unfair to policyholders. He notes that the SRB's witness testified that insurers do collect finance charge income and revenue from other sources. The AG estimates that in 2005 finance charge income and other revenue are expected to bring insurers about 1.9 percent of premium. The AG points out that the Decisions on 1999, 2001, 2003 and 2004 rates all state that the underwriting profits provision in rates recognizes that insurers receive income in addition to premium, and that the rate charged to policyholders should reflect the presence of that income. He further notes that finance charge income has been included in the underwriting profits calculation since 1983, and other income since 2001. Omission of these sources of revenue, the AG argues is inconsistent with prior decision and results in excessive and unreasonable profit.

Responding to the SRB's stated reasons for ignoring finance charge income, the AG argues that expenses associated with finance charge income and other revenue are included in the rates, because the estimated values for those provisions are net of expenses. He asserts that in their expense calls insurers report expenses incurred in connection with operating finance plans, and that they are included in the expense provision in rates. The AG notes that in the *Decision on 1983 Rates* the Commissioner explicitly found that expenses relating to policy financing are included in the expense portion of the rates.

The AG disputes the SRB's contention that lost investment income offsets finance charge income, arguing that the data show that finance charge income is largely profit and that, at its current level, it is not offset by lost investment income. Further, he asserts the effect of finance charge income on the underwriting profits provision is an empirical

⁴⁵ Other Revenue, which is addressed more fully in a later section of this decision, consists of premium collection-related income, such as "insufficient fund fees, late fees, cancellation notice fees, etc.". As part of the annual Premium and Finance Charge Survey, insurers are asked to report such income.

question that should be addressed within the model itself. However, the SRB's second model provides for the same profit whatever the level of finance charge income. The AG argues that this result is incorrect and unreasonable, stating that if the actual finance charge income is greater than the income that would precisely balance lost investment income, it will result in excessive profit. In addition, the AG points out, in the real world the value of insurers' invested assets reflects premium flow. Therefore, the value of invested assets that insurers report is already reduced by any delays in the receipt of premium. If all premium were received up front, the value of invested assets would increase and, correspondingly, investment income would increase. However, the AG argues, the SRB's second model assumes that premium is received at policy inception, but does not increase the values for invested assets or income. Therefore it does not reflect reality.

The AG also criticizes the SRB's second model because it allows insurers to earn the cost of capital even without finance charge income. In the real world, the AG points out, insurers do receive finance charge income. The combination of premium, finance charge income and other revenue enables insurers to earn more than the cost of capital. The AG argues that the SRB's analogy of policy financing to the purchase of a house fails to recognize that the financing costs represent profit to the recipient, and that the price of the policy should change because of financing decisions. The insurers, the AG points out, are the financiers of insurance policies and profit from their financing operations.

The AG asserts that the SRB's IRR model, contrary to the AIB's position that an IRR model allows for simple and straightforward quantification of the cash flows relating to the functions of an insurance operation, inaccurately models loss, expense and asset flows. He points out that the SRB assumes that commission is paid at time zero, but that its model does not concurrently reduce expenses to reflect that payment. Therefore, the model shows at that time a greater sum of unpaid and paid losses and expenses than the total amount of losses and expenses in the model. Further, the AG argues, the SRB has incorrectly modeled surplus, invested asset and income flows. He states that its model returns surplus to shareholders at the end of each quarter, during which period the assets remain in the policy and policyholders pay shareholders the cost of capital to keep them there. However, the AG asserts, in its calculation of investment income the SRB, rather than leave the invested assets in the model until the end of each quarter, removes them

throughout the period. Investment income is therefore reduced, and policyholders are not permitted to earn income on surplus that remains in the model.

3. The Parties' Responses to Criticism

a. The AIB

Responding to the SRB's assertion that the AIB's model produces recommendations that do not vary sufficiently across coverages, the AIB argues that the "closeness" of its results is largely a function of economic conditions, particularly low interest rates, and of the Commissioner's rejection of the AIB's proposal to model physical damage loss flows on a gross basis, rather than net of salvage and subrogation payments. Addressing the AG's concerns that the AIB's IRR model did not properly reflect the reserve to surplus ("R/S") ratio, because the asset to surplus ("A/S") ratio in each quarter did not equal the R/S ratio plus 1, the AIB argues that the AG's position is based on examination of incorrect figures. It states that the changing A/S ratio by quarter results from delayed premium flow. Further, the AIB asserts, the AG's criticism would apply equally to the Myers Cohn model.

b. The SRB

The SRB argues that the alleged "technical flaws" in its model that the AIB identifies in its rebuttal filing are without merit. It agrees that even though its model does not show an explicit equity flow, it contends that such a flow is embedded in the invested asset flow and the post-tax investment income. The SRB argues that its decision to simplify its model by combining several items into a single manageable flow is not improper, noting that the AIB does not consider this to be a fatal flaw. Addressing the AIB's argument that the IRR model in the SRB's advisory filing credited stockholders with investable assets from premium before the premiums had been received, the SRB points out that, in an additional effort to simplify the treatment of invested assets and premium flow in its model, it amended that model to assume that all premium is paid in full at policy inception.

The SRB, responding to the AIB's criticism of its model on the ground that, because it treats physical damage losses on a net basis, it produces negative surplus, invested assets and quarterly investment income, states that those criticisms are incorrect to the extent that they are 1) a function of the AIB's treatment of the SRB as "balance sheet

exercise” or 2) disappear when the full policy premium is assumed to be paid at policy inception. It notes, as well, that the Commissioner rejected the AIB’s proposal to value physical damage losses on a gross basis and that the SRB’s treatment of loss flows for all coverages as net of salvage and subrogation is consistent with the *Decision on 2004 Rates*.

The SRB observes that it agreed with the AIB’s criticism of the underwriting tax provision in its initial model, and therefore corrected it. Finally, the SRB argues, its model is not flawed because it produces a lower profit and risk margin when it assumes that the premium is paid in full at policy inception. It asserts that the AIB’s criticism is the result of discounting the net present value of the premium and finance charge income on current risk-free rates. However, the SRB argues, these flows are appropriately discounted at the cost of capital; discounting at that rate, it asserts, shows that finance charges are actually underpriced or insufficient. The SRB responding to the AIB’s criticism of its model on the ground that, because it treats physical damage losses on a net basis, it produces negative surplus, invested assets and quarterly investment income, states that those criticisms are incorrect to the extent that they are 1) a function of the AIB’s treatment of the SRB model as “balance sheet exercise” or 2) disappear when the full policy premium is assumed to be paid at policy inception. It notes, as well, that the Commissioner rejected the AIB’s proposal to value physical damage losses on a gross basis and that the SRB’s treatment of loss flows for all coverages as net of salvage and subrogation is consistent with the *Decision on 2004 Rates*.

The SRB asserts, as well, that the AG’s criticisms of its IRR model are without merit. It argues that the AG’s conclusion that the model uses inconsistent values for the surplus contribution from shareholders in different parts of the calculation is, in essence, an assertion that the model does not show a balanced balance sheet. The SRB states, however, that an IRR model is not a balance sheet exercise, in which income and outflow should be equal in each sub-period. Its model, it asserts, measures the differences in timing of loss, premium and expense flows, and investment income, to derive a profit load, and is outside a balance sheet. The SRB argues, as well, that the simplified assumption in its final model, that premium is collected at time zero, renders the AG’s objection moot. In response to the AG’s assertion that the asset flows in the SRB’s model leave funds in “limbo” where they are neither earning investment income or returned to shareholders, the

SRB states that the AG's analysis advanced the timing of flows back to shareholders by half a quarter. The timing issue is important, the SRB states, because the invested asset flow is discounted at the cost of capital, rather than accumulated at the 3.95 percent net asset return shown in the SRB surrebuttal filing. Further, the SRB argues, the AG makes the arbitrary assumption that dollars can be paid to shareholders at mid-quarter, without reference to a quarterly schedule of earnings distributions to shareholders. The SRB also asserts that the AG fails to recognize that insurers do not retain that portion of premium receipts that comprises commissions for any substantial portion of the first quarter. Those funds are not available to earn investment income for either policyholders or shareholders.

The SRB states that the AG implies that the SRB model's assumptions about the payment of premium and the consequent omission of finance charge income, are inconsistent with its provision for earned but uncollected premium ("EBUP"). However, the SRB argues, the SRB's assumptions reduce the profit provision in the AIB model, but do not imply that insurers should not be credited for premium that is earned but not collected. The SRB asserts that it does not maintain that in the real world the full amount of premium is collected at time zero, and acknowledges that unpaid premiums create bad debt for insurers. Anticipating commentary on the effect on the underwriting profit provisions in the rates of deviations and discounts that insurers choose to offer, the SRB points out that its model does not incorporate any risk for company deviations or discounts.

c. The AG

The AG asserts that the SRB, in its surrebuttal filing, made a number of incorrect statements about the Myers Cohn model. He points out that, although the SRB stated that a significant difference between its IRR model and Myers Cohn is the use of a target opportunity cost of capital, it is possible to base the risk-adjusted discount rate generated by the Myers Cohn model on the cost of capital rather than a beta of liabilities. In this case, the AG asserts, the results produced by the alternative formulation are very close. Responding to the SRB's argument that the Myers Cohn model does not recognize business risk, the AG asserts that such risk is recognized by use of a risk-adjusted rate. He notes that the use of a beta of liabilities as a measure of insurance risk pre-dates the Myers Cohn model and that the equation used to derive the beta of liabilities (the "Fairley formula") was developed by the SRB in the 1970's and was subsequently imported into the

Myers Cohn model. Therefore, the AG argues, the concept of a beta of liabilities is a known quantity in Massachusetts ratemaking. He notes, as well, that the SRB's statement that a negative risk premium in rates is "clearly" unreasonable has been rejected in the Commissioner's decisions on 1999, 2001 and 2003 rates. The AG asserts that the SRB incorrectly formulates the Myers Cohn model in its surrebuttal filing, because it eliminates finance charge income. In the Myers Cohn model, the AG argues, the fair premium is a revenue stream that includes finance charge income.

4. Discussion and Analysis

The parties again dispute the choice of a model to derive the underwriting profits provision. The AIB, in essence, urges retention of the IRR model adopted last year, essentially without the adjustments that the Commissioner made last year. The SRB has proposed two models, whose principal substantive difference is a change in the assumptions underlying the timing and amount of cash flow that insurers receive. The SRB's second model assumes that all premium is paid in full at policy inception and that policyholders pay no finance charges.⁴⁶ The AG argues that both the AIB and SRB IRR models have inherent problems, and urges retention of the Myers Cohn model or adoption of a CYAM.

Last year, the Commissioner was presented with two principal modeling options for an underwriting profits provision, the Myers Cohn model and an IRR model.⁴⁷ In the *Decision on 2004 Rates*, she considered extensively the arguments made by the parties and concluded that an IRR model could be used to develop rates that would meet the statutory standards. The reasons for adopting an IRR model were discussed at length in her decision. This year, the AG's advocacy for the Myers Cohn model and the opposition to it by the other parties in large measure reiterate the positions that the parties took last year.⁴⁸

⁴⁶ The other differences are a correction to the model's recognition of income taxes on underwriting results to reflect the correct sign and an updating of the SRB's recommended values for the cost of capital and pre-tax asset returns.

⁴⁷ The AIB and the SRB offered different IRR models.

⁴⁸ The SRB, in its surrebuttal filing, criticizes the Myers Cohn model for a number of reasons. The AG, on the last day of hearings in this matter, offered into evidence an affidavit of Professor Richard Cohn, co-author of the Myers Cohn model, who has appeared as a witness in the matters in other years. The AIB and the SRB both objected to the timing of the AG's submission, and to the fact that Professor Cohn had not been made available for cross-examination. By order dated November 17, the affidavit was allowed, but the parties were allowed to argue whether any weight should be given to it. The SRB argues that it should be given no weight. The AG was aware of the contents of the SRB's surrebuttal filing a week before the

I have been presented with no arguments that persuade me that the reasoning of last year's decision is inapplicable this year. No party has asserted that changes have occurred that would support rejection of the conclusions reached in last year's decision.

Although she accepted use of an IRR model to calculate the underwriting profits provision, at the same time, the Commissioner found that neither of the models offered was entirely appropriate for developing an underwriting profits provision for industrywide ratemaking, and declined to approve either one as a blueprint for future proceedings. The model actually adopted incorporated aspects of both proffered models. This year, I am again not persuaded that any of the models presented is entirely satisfactory.

The AIB's model continues to display the problems that were identified last year. Although it includes exhibits demonstrating cash flows for the physical damage coverages on both a gross and a net basis, it urges the Commissioner to make a one-time judgmental adjustment that would provide for a five percent underwriting profits provision for the physical damage coverages. Its approach still fails to acknowledge the expected receipt of salvage and subrogation recoveries.

The SRB agrees that its model is not a "textbook" IRR model, but describes it as a DCF or net present value model that derives profit and risk margin from a target after-tax estimate of the cost of capital. It states that it does not start with a series of cash flows. Its goal is to develop a risk-adjusted cost of capital that will explicitly recognize the investor's risk. Rather than develop a single flow, as does the AIB's IRR, it discounts both policyholder and shareholder flows; these flows are combined into a present value flow. In its surrebuttal filing, the SRB allies itself more closely with the principles underlying the Myers Cohn model, although it incorporates risk based on the risk-adjusted cost of capital rather than estimating risk through a beta of liabilities.

Whether or not the SRB's model should be considered an IRR model or some other type of financial model, it appears at this time to be at a developmental stage. Although the SRB considers that its model is simpler than the AIB's IRR, this record does not support such a conclusion. The AIB, while describing the SRB's proposal as a DCF

scheduled date for cross-examination of its witnesses. He had an opportunity to cross-examine the SRB's witness about its representations about the Myers Cohn model. He could also have asked to offer a witness. Submitting an affidavit after the record has closed is not a reasonable substitute for testimony. The affidavit has not been considered in this decision.

model, commented that an approach that discounts both policyholder and shareholder flows could be reasonable. At the same time, the AIB noted that the model, as proposed in the SRB's advisory filing, had structural problems that, among other things, did not correctly model changes in the underwriting tax provision. It also questioned the relationship between premium flow and the finance charge income. The SRB agreed that the tax provision in its model required changes, and corrected it in its revised model. Nevertheless, it is apparent that the SRB's initial model had not been sufficiently tested before it was proposed for use.

In addition to revising the effect of underwriting taxes, the SRB's revised model, proposed in its surrebuttal filing, takes a significantly different approach to modeling an underwriting profits provision. It changes two underlying aspects of both the IRR model that was adopted last year and the Myers Cohn model: premium cash flows and finance charges. The revised SRB model eliminates the concept of premium flow, by assuming that all premiums are paid at policy inception, and that policyholders do not pay and insurers do not receive finance charge income. It is based on the premise that policy financing is a matter of consumer choice and on the effect that delay in the receipt of premium has on insurers' invested assets and its investment income. The SRB takes the position that policy financing is more appropriately considered as part of insurers' expenses, a rate component that, in the current ratesetting methodology, is considered in the Main Rate proceedings. The SRB's revised model, as Ms. Blank testified, does not reflect a real world in which premiums are paid over time and policyholders pay financing costs.

A model that is based on assumptions that depart dramatically from the real world should not be adopted without an opportunity for extensive review and analysis by all parties to the rate proceedings. Cross-examination at the end of a vigorously contested proceeding is inadequate for that purpose. Furthermore, because the SRB's revised model links policy financing to company expenses, the interrelationship between it and the expense provisions in the Main Rate will need to be explored. There has been no opportunity to do that this year. For those reasons, we decline to adopt the SRB's revised model.

As noted in the *Decision on 2004 Rates*, a CYAM may be a practical model for developing an underwriting profits provision that reflects actual, real world financial results and is less theoretical than either an IRR or the Myers Cohn model. At the same time, we recognized in that decision that because a CYAM had only been offered in past years as a reasonability check, the merits of that approach and the inputs to it had not been closely analyzed. This year, the AG again urges adoption of the CYAM, characterizing it as practical, simple and transparent, and noting that it can be easily calculated. He argues, as well, that it is the regulatory model of choice in two other states that actively regulate rates, that the ISO uses it, and that other states require or permit its use to determine profit provisions. The AG notes that, according to an SRB survey, seven out of ten filings made by insurers in four other states used a CYAM.

The SRB, while it prefers an IRR model, does not object in principle to the CYAM; it attaches to its surrebuttal filing a copy of a filing by the Metropolitan Group Property and Casualty Insurance Company in Pennsylvania, which it then uses as a reasonability check on the underwriting profits provisions proposed by the AIB, the SRB and the AG in this proceeding. The SRB asserts that the Metropolitan model, in essence, follows the approach taken by the AIB and the SRB, although it does not focus on loss and expense flows for a single policy period. The AIB continues to object to a CYAM on the grounds that it does not reflect modern financial theory; it further asserts that because no theory or principles underlie CYAMs, no rules or principles constrain the choice of inputs to them. It argues that CYAMs are too flexible to be reliable, as demonstrated by the results produced by the different inputs chosen by the AG.

Although the AIB's arguments do not persuade us to reject CYAMs outright as a potential method for determining underwriting profits provisions, we remain unpersuaded that we should adopt one for use in setting 2005 rates. As the proponent of a CYAM, the AG must offer evidence that it is superior to the other proposed alternatives. The use of a CYAM for limited ratemaking purposes in two other states is insufficient to demonstrate that it is the best approach to setting industrywide rates for all policyholders in Massachusetts. Similarly, the SRB questions transporting a methodology that is widely used by individual companies into a procedure for industrywide ratemaking. Simplicity and transparency are admirable values, but should not override the need for a model that

embraces and accounts for the complexities inherent in setting rates to be used by all companies for all policyholders. Further, the record does not support a conclusion that the CYAM refers, conceptually, to a single model, or is a generic terms for an approach that authors formulate differently. The SRB, for example, recommends a particular company's model; the AG's model is that developed by his witness. The record is insufficiently developed to permit a reasoned analysis of the differences between them or their respective merits.

Although we will again adopt an IRR model for developing an underwriting profits provision in the 2005 rates, our decision to do so should not be viewed as a commitment to its use in the future. We again encourage the parties to work outside the constraints of an adversarial proceeding to develop a generally acceptable profits model that will simplify the process of developing rate recommendations.

C. MODEL INPUTS

Implementation of an IRR model begins with an estimate of the fair and reasonable rate of return, or cost of capital, to insurers, and establishes a profits provision that will produce that fair return. After estimating the target cost of capital, the model analyzes discounted cash flows to determine what factor is required to achieve that rate of return. The parties take different approaches to estimating the cost of capital, the return on invested assets, and the treatment of salvage and subrogation recoveries in the physical damage coverage cash flows, as they affect surplus needs for those coverages. These disputed issues will be addressed in turn.

1. The Cost of Capital

a. The AIB

The starting point for the AIB's final cost of equity recommendation is an initial 10.18 percent cost of equity, based on an updating in its surrebuttal filing of the information used to derive its recommendation in its first advisory filing. That value is the average of results from the application of DCF and Capital Asset Pricing ("CAPM") models to financial data. The AIB derives its DCF model input from the application of three DCF models, dividend growth, earnings growth, and plowback, to four quarterly time periods. The CAPM input is derived from estimates for three time horizons for each of

four quarters. The AIB's CAPM estimates are based on equity betas published by the Value Line Investment Survey ("Value Line") for its sample of insurance companies, and its market risk premium ("MRP") estimate averages two values, the Ibbotson-Chen forward-looking MRP estimate and the actual historical MRP estimate. In summary, the AIB states that its cost of capital recommendations are based on an average of DCF and CAPM estimates, produced using public data spanning one year.

The AIB notes that the SRB's final recommended cost of equity is 10.64 percent, that its DCF cost of equity estimates ranges from 9.67 percent to 10.65 percent, and its CAPM estimates from 10.57 percent to 10.95 percent. The AIB argues that the AG's cost of capital recommendations produce results that are outside the bounds of "any conceivable" range of reasonableness. It asserts that they use a biased methodology for determining the beta of equity that gives two-thirds weight to unadjusted equity betas and one-third weight to adjusted betas. The AIB argues that the use of unadjusted equity betas in the CAPM is improper because it produces unreasonable results that are inconsistent with the DCF cost of equity and with the cost of equity in the real world. Further, the AIB argues, Dr. Derrig and David Parcell, MBA, a witness for the SRB, both support the exclusive use of Value Line equity betas. The AIB also urges the Commissioner to reject the MRP based on a 1960 to date average of annual market risk premia. It states that whether she chooses the shorter historical time period proposed by the SRB or the AIB's forward-looking estimate is not important.

The AIB states that the final overall cost of capital is based on a determination of the cost of debt and the debt-equity ratio in insurers' overall capital structure. The AIB recommends a 6.09 percent cost of debt and a debt/equity ratio of 18/82 percent. It notes that the SRB recommends a 5.98 percent cost of debt and a debt/equity ratio of 20/80 percent. The AIB urges the Commissioner to set 2005 rates using its proposed values, which result in an overall cost of capital recommendation of 9.06 percent. In the alternative, it proposes that she use the SRB's ultimate recommendation of 9.24 percent.

b. The SRB

The SRB develops its weighted cost of capital based on an analysis of Value Line data for a group of companies that include twenty-five companies from Value Line's property/casualty insurance industry group and four companies from its diversified

financial services industry group. The latter includes three companies, American International Group, the Hartford Financial Services Group, and Unitrin, that are not included in the sample used by the AIB to develop its cost of capital. The SRB's expert, Mr. Parcell, testified that he included these groups in his sample because they had significant levels of earned premium for property/casualty insurance in 2003. The SRB argues that their inclusion responds to the *Decision on 2004 Rates* by using a group that is the largest available sample of companies that are similar to those providing private passenger automobile insurance. The SRB's analysis also relies on a single edition of the Value Line survey, , the most recent at the time its analysis was prepared, rather than follow the AIB's methodology of averaging the results from the last four quarterly editions of that survey. It argues that its witness testified that the older Value Line editions do not add any significant value to the AIB's calculations.

The SRB uses the term Return on Equity ("ROE") to refer to the cost of capital or the cost of equity, estimating that cost from the results of applying a DCF model and the CAPM to the data. The SRB argues that its DCF methodology is similar to that used by the AIB and produced a result, 10.32 percent, that is similar to the AIB's 10.37 percent recommendation. The SRB's analysis is based on averaging of results for the companies in its sample that pay dividends, rather than on composite industry inputs. The SRB explains that the difference between its results and the AIB's may result from the size and composition of the sample group, and reliance on a single edition of the Value Line Survey. Mr. Parcell also used a three-month dividend yield in his calculations, while the AIB used a spot yield price. The SRB also uses five-year historic and five-year projected values for earnings per share, dividends per share, and earnings retention (plowback) growth, all based on Value Line data while, for plowback growth, the AIB uses only a single year's value and relies on its own calculations. The SRB argues that using consistent time periods for each growth indicator is the preferred methodology, and that the record offers no persuasive reason for the AIB's choices relating to the plowback growth estimate. The SRB acknowledges that in the *Decision on 2004 Rates* the Commissioner stated a preference for an analysis based on industry-wide information, rather than one averaging individual company data, but states that its witness found that the results of using the two methods were nearly identical. The SRB states that the AIB has

not rebutted the SRB's proposed input values to its model other than asset return rate. Therefore, the SRB recommends that the Commissioner adopt its values for a DCF cost of capital.

The SRB recommends a 10.95 percent CAPM estimated cost of capital, noting that its results range from applying that methodology range from 10.57 percent to 10.95, a range that its witness testified is within a range of reasonableness. The differences between the AIB's estimated CAPM cost of capital of 9.98 percent and the SRB's recommendation are explained, according to the SRB, by differences in sample size and the range of Value Line data used in the calculations. Another difference is the methodology for selecting an MRP value for use in the model. The SRB's MRP estimate is an average of the Ibbotson series of market returns, selected for the period of 1975 through 2003. The SRB argues that its selected time frame addresses a directive in the *Decision on 2004 Rates* to address in future IRR proposals the time horizon for estimating the cost of capital. It states that its selection reflects the last three business cycles and the current cycle to date, noting that its witness testified that this period covers twenty-nine years, and is long enough not to be influenced by a single year's results and short enough for most investors to recall events within it, and consider the likelihood of their recurrence. The SRB concludes that its proposed 29-year period established a more relevant MRP than the 1960 to date time period recommended by the AG. It characterizes the AIB's proposal to combine Ibbotson Associates data and Ibbotson-Chen projections as a significant methodological change, noting that the Commissioner rejected that change in the *Decision on 2004 Rates*, and arguing that she should reject it again this year.

The SRB, like the AIB, estimates its beta of equity using a single source, Value Line adjusted betas. It notes Mr. Parcell's testimony that the adjusted beta is that most commonly used in the CAPM context and that, in that context, Value Line betas are most commonly and widely cited among regulators. The SRB argues that its recommendation is not based on any calculations using Value Line and other equity betas, and is not intended to pick the best statistical indicator. Rather, it is to pick the calculations that investors are most likely to use. The SRB argues that the focus should be on what investors consider, not economic or statistical analyses, because the cost of capital is generally determined by investors' expectations and requirements. As an alternative to the use of one estimate of

the beta of equity, the SRB recommends that the average include only one unadjusted beta, either from Standard & Poors or Yahoo!

The SRB identifies another difference between its application of the CAPM and that of the AIB as the risk-free rate. The SRB uses a three-month average, while the AIB relies on data points from the past twelve months. The SRB argues that a three-month average is consistent with the use of average values.

The SRB finds that the AG's CAPM estimate of 6.76 percent is below his 9.57 percent DCF calculation, and only slightly higher than the cost of debt recommended by the SRB. Compared to the cost of capital estimated by the SRB and the AIB, the SRB finds the range of the AG's results to be "troubling."

The SRB, consistent with the *Decision on 2004 Rates*, adjusts its otherwise calculated cost of capital to reflect the role of debt in the capital structure of insurance holding companies. Based on Mr. Parcell's analyses of the capital structure of the group of insurers he used for his DCF and CAPM analyses, the SRB recommends a debt/equity ratio of 20/80. It argues that its consistency requires adoption of its recommendation, and notes that it is not contested by the AIB. Based on the cost of long-term debt only, the SRB recommends debt costs, post-tax, of 5.98 percent. It argues that the AIB's proposed values improperly include trust preferred securities, that are equities, not debt.

c. The AG

The AG argues that the cost of capital in IRR models is a long-term value, and that it is unreasonable to use it in a short-term single policy IRR model. He points out that Ms. Scott, testifying for the AIB, commented on the difficulty of estimating the cost of capital because it depends on investment returns as well as underwriting flows and risk. The AG characterizes the cost of capital calculations in both the SRB and AIB models as complex, noting that they produce six separate and different estimates of the cost of capital. He asserts that the spread in the calculated values is wide, and that different values produce very different outcomes.

The AG notes that the CAPM results are substantially higher than the DCF results because the AIB and the SRB use Value Line data alone. Further, he observes, the DCF results that are also driven by Value Line growth projections, produce a DCF cost of capital three times higher than the Value Line historical data. The AG argues that the

Commissioner expressed concern about the sole use of Value Line data in the Decision on 1994 Rates, and subsequently approved consideration of data from multiple sources as an antidote to reliance on a single data set. The *Decisions on 1999, 2001, 2003 and 2004 Rates* all averaged three data sources, unadjusted Standard & Poors and Yahoo! betas and adjusted Value Line. The AG points out that the CAPM cost of capital estimates, using Value Line data alone, are over nine percent, while the CAPM result following the CDM averaging methodologies is 6.76 percent. The AG's estimate for the DCF cost of capital is 9.57 percent, and his calculation of the weighted cost of capital is 7.41 percent. He asserts that calculations of the cost of capital, published by Ibbotson Associates in March 2003, range from 5.23 percent to 7.57 percent. These non-partisan values, he argues, are relied on by investors, and show that the CAPM cost of capital calculated using the current methodology is more reasonable than the AIB and SRB estimates.

The AG observes that neither the AIB nor the SRB witness knew about the data or methodologies underlying the Value Line projections, and argues that the adjusted Value Line betas differ from the historical and adjusted betas provided by other services, and with Value Line's own historical betas. Further, he asserts that there is no consensus among financial economists that Value Line betas are more "correct" than those calculated by other services. In addition, the AG observes that Value Line adjusted betas have been poor predictors of insurance industry betas, which have declined steadily over the past few years. The AG notes that betas from other sources, including Ibbotson Associates full information betas on which the AIB has relied in the past, all reflect this decline, but that the Value Line adjusted betas do not. If Value Line betas are poor predictors, the AG argues, they should not be used to set 2005 rates. The AG points out that, although Mr. Parcell testified that he used Value Line data because investors rely on it, he also testified that investors rely on other sources as well, including Standard & Poors and Yahoo!. Further, the AG argues that the Commissioner must be concerned with the reliability and accuracy of data.

The AG argues that the CAPM has been described as a methodology for projecting returns to insurers, adjusted to account for systematic risk and is not, as the SRB asserts, an equity concept that cannot be used in conjunction with the beta of liabilities. The AG, responding to the SRB's claim that it is improper in the CAPM to use a long-term MRP

with a one-year average of the risk-free rate, notes that long-term moving averages are not used to calculate current interest rates. He points out that: the SRB's CAPM calculation uses three months of data to determine the interest rates; its expert had never seen anyone determine the short-term CAPM value as a twenty-nine year average of three-month Treasury bills; and that he thought that would be an incorrect method to use.

Discussion and Analysis

a) The Beta of Equity

The CAPM has been used for many years to develop underwriting profits provisions, but is independent of the model that is used to determine the actual underwriting profit. Two key inputs to the CAPM, the beta of equity and the MRP have been frequently contested in these proceedings, and are again this year. Historically, the beta of equity has been considered an all lines, countrywide value, and has been estimated based on a sample of companies in the Value Line Investment Survey. I am persuaded that the SRB's addition of three companies classified by Value Line in the financial services sector that write significant amounts of property/casualty insurance is appropriate, and that the equity beta should therefore include data on those companies.

Since the *Decision on 1999 Rates*, the CDM has developed the equity beta by averaging the results of estimates prepared by three financial services, rather than rely exclusively on Value Line. The parties this year again dispute that approach; both the AIB and the SRB prefer to use Value Line alone. Value Line produces adjusted betas; both Standard & Poors and Yahoo!, the services whose estimates have been averaged with those of Value Line, produce raw betas based on regression analyses over sixty months. The AIB argues that it is improper to use unadjusted equity betas produced by financial services other than Value Line because they produce unreasonable results that are inconsistent with the DCF estimate and with the cost of equity in the real world. The SRB argues that its approach is not intended to pick the best statistical indicator, but to pick the calculations that investors are most likely to use. The AIB's argument that a methodology must be changed simply because it produces a result that the AIB considers unreasonable has been addressed and rejected in past years. That investors rely on Value Line data is not, by itself, a sufficient reason to reject the use of unadjusted as well as adjusted betas to

estimate an industrywide equity beta. We note the testimony of the SRB's witness that investors rely on other services as well.

The AIB and the SRB, as an alternative to using Value Line betas exclusively, recommend that its values be averaged with those of only one other service that produces unadjusted betas, thus giving equal weight to each. The value of estimating an equity beta from more than one data source is supported by testimony on the differences between the methodologies used by Value Line and other companies to compute raw betas, and the formulas used to adjust them.⁴⁹ Further, because industry betas fluctuate depending on investors' perception of the relative riskiness of the industry, the use of estimates from different sources should help offset potential bias in the formulas developed by individual sources. The reason for adopting an approach that gives, in essence, two-thirds weight to unadjusted betas and one-third to adjusted betas is not clear. The *Decision on 1999 Rates* referred to differences in the algorithms used by reporting services; however, it appears that Yahoo! and Standard & Poors both perform regression analyses which result in almost identical results. If the goal is to balance raw data with adjusted data, we find it reasonable to average Value Line's estimate with one of the other services. Because even weighting will more fairly represent the two different approaches, we find that it is superior to the current CDM. The table prepared by Mr. Parcell shows that there is no significant difference between the average equity beta as calculated by Yahoo! and Standard & Poors. In recognition of the long history of Standard & Poors in the financial sector, for 2005, we will balance the Value Line estimates with those provided by Standard & Poors.

We note, however, testimony that betas of equity, both adjusted and unadjusted, are estimated using a variety of formulas. Examination of a broader range of estimates from services other than Value Line, Standard & Poors and Yahoo! may also assist in developing an appropriate industry-wide estimate of the beta of equity. Recommendations drawn from such an examination, however, should fairly balance the results of adjusted and unadjusted estimates.

⁴⁹Mr. Parcell testified that Value Line derives its raw betas from weekly deviations of stocks versus the New York Stock Exchange, while Yahoo! uses monthly deviations of the security versus the Standard & Poors 500. A third company, Merrill Lynch, uses different data from Value Line, and makes adjustments to it using a formula that, according to Mr. Parcell, is similar to that used by Value Line.

b. The Market Risk Premium

The methodology for estimating the market risk premium has changed over time, from use of the long-term average from 1926 to the most recent year to a process that balances an average for the period from 1960 to the most recent year with that long-term average. The reasoning underlying that choice is that investors tend to place greater reliance on more recent data, but are not unaware of the effects of historical events on the stock market. The AIB argues this year, as it has in the past, that the MRP value it recommends is necessary in order to produce a CAPM cost of capital that is commensurate with the cost of capital it estimates from its DCF model. The *Decision on 2004 Rates* rejected that argument. This year, the SRB proposes a different approach that would estimate the MRP by averaging the results for 1975 through 2003 as published by Ibbotson Associates in its 2004 Yearbook. Mr. Parcell's selected 29-year time period reflects three business cycles, as calculated by the National Bureau of Economic Research. His choice is based on the premises that this period is long enough not to be influenced by a single year's results and short enough for most investors to recall its essential characteristics and evaluate the likelihood that they will recur.

Although it is not unreasonable to calculate a market risk premium over a time period that begins more recently than 1960, we are not persuaded that investors look only at relatively recent data and do not weigh events that occurred over a longer historical period. Further, as Dr. Derrig testified, the data on market risk premia is extremely noisy. Averaging a longer series offsets the effect of that noise. A reduction in the basic time period over which the MRP is averaged will increase responsiveness to more recent conditions, but should be balanced with data produced by a longer series. We will therefore, in developing the 2005 underwriting profits provision, preserve the balancing principle in the current CDM, but will assign 75 percent weight to the series from 1975 through 2003 and twenty-five percent to the entire long series.

The AIB, as it did last year, averages risk-free yields for three different time periods to estimate the overall CAPM cost of capital. The *Decision on 2004 Rates* acknowledged that question about that choice had been raised, and asked the parties to address those issues in future proposals for an IRR model. The AIB states that the three time horizons, short, intermediate and long-term that it again proposes to use are consistent

with the methodology developed in the most recent case on workers' compensation rates and balances analysis of very short and longer investment horizons. Those longer horizons, Dr. Derrig testified, acknowledge that insurers writing automobile insurance in Massachusetts are going concerns, and that their returns should be commensurate with longer horizons. We conclude that it is reasonable to use this approach again to develop an overall CAPM cost of capital.

c. DCF models

As with the CAPM, we find that it is appropriate to use the enlarged sample proposed by the SRB to estimate the cost of capital using a DCF model. Further, consistent with the *Decision on 2004 Rates*, we find that the calculations should include all companies in that sample, including those that do not pay dividends. The SRB's methodology for developing the DCF cost of capital differs slightly from the AIB's. To estimate dividend yield, it takes the current value of dividends per share and divides it by the average stock price over the three-month period May through July of 2004. The AIB, to estimate dividend yield, accepts Value Line's results from a procedure that estimates the total of cash dividends to be declared over the next twelve months and divides that value by the recent price on a single day. We agree with the SRB that the use of the average stock price is preferable.

The SRB also averages five-year historical data and five-year projections from Value line to estimate growth in dividends per share, earnings per share and earnings retention rate, or "plowback" rate. In contrast, the AIB performs its own plowback calculations and considers them for only one year, rather than five years, although it also recommends consistent use of Value Line data. The AIB did not explain the reason for its decision to use a single year plowback calculation. We agree that it is reasonable to use five years of historical and projected data from the same source to develop a DCF cost of capital and, with the requirement that the SRB's calculations include all companies in its sample, not just those that pay dividends, will approve use of the SRB's methodology.

d. Adjustments to the Cost of Capital

i. Calculating the Risk Free Rate.

The risk-free return, as calculated from United States Treasury strips, has consistently been adjusted to account for expenses that insurers incur in managing their

portfolios. This year, the AIB recommends an adjustment to the risk-free interest rate for investment expenses only based on those actually incurred by countrywide insurers. In the interest of stability, it selects a value of 0.28 percent that is the average of the 2001-2003 countrywide investment expense ratios. The SRB incorporates this value in its filing. The AG recommends an expense adjustment of 0.15 that is consistent with the value used in past decisions.

The AIB's recommendation for the expense allowance for the risk free rate does not address the reasons for the differences between the two recommendations. The *Decision on 2004 Rates*, addressing a similar discrepancy, noted that the 0.15 percent expense adjustment for risk-free rate is relates to the expenses associated with a passive investment strategy that is used to manage a portfolio of both risk-free and risky securities and other investments. Nothing in the record this year suggests that the reasoning underlying that decision has changed. A change from a 0.15 percent investment expense to a 0.28 percent is significant and requires more support than has been offered in this record. At the same time, we recognize that investment expenses, even for a passive investment strategy, may increase over time. On this record, however, we will make no change this year to the longstanding expense adjustment to the risk-free rate of 0.15 percent.

ii. Adjustment for the Cost of Debt Financing

Both the AIB and the SRB adjust the otherwise calculated cost of capital to account for insurer's mix of debt and equity financing. The SRB recommends a capital structure of 80 percent equity and 20 percent debt, based on six months of Value Line data for the SRB's expanded sample of companies. The AIB recommends a relationship of 82 percent equity and 18 percent debt, also based on Value Line data, but for a smaller sample of companies and averaged over four quarters. Further, the AIB's values are not limited to long-term debt but include preferred securities. We are persuaded that the debt equity ratio should look at long-term debt only. We note Mr. Parcell's testimony that because most companies do not have preferred stock, he did not consider it as a separate item. The data in the AIB filing show an increase in the ratio of debt to equity over time. We find that the SRB's use of six months of more recent Value Line data is appropriate for estimating the debt equity ratio for 2005. However, the SRB recommended a value for the cost of long-term debt based on the median, rather than the average cost for the sample. The traditional

methodology applied to samples of property/casualty insurance companies has been to use the average of a series of values. However, the series of value in the sample show a wide variation. In such circumstances, we are persuaded that the use of the median value rather than the an average is equally appropriate. We will therefore use the median as calculated by Mr. Parcell as the value of the cost of long-term debt.

iii. The Small Size Factor

The AIB argues that when a simple CAPM is used to estimate the cost of capital, an additional firm size factor should be taken into account. This year, it states that there is a theoretical possibility that part or all of a firm size adjustment would be covered by the adjustments that Value Line makes to the equity beta. Therefore, the AIB states, it will recommend a firm size adjustment if the Value Line estimates of the equity beta are used.

As noted above, we decline to adopt the AIB's recommendation that we rely entirely on Values Line estimates of the beta of equity. The AIB's analysis of the relationship between Value Line adjustments and the size premium strengthens that decision. The issue of a size premium has been raised in prior ratesetting proceedings, independently of any discussion of Value Line estimates, and has been consistently rejected, on the ground that there is no evidence that the small size effect exists. The AIB has made no persuasive argument that a size adjustment should be made, directly or indirectly, this year. Further, the AIB has proposed no value for any size adjustment. Last year, the AIB attempted to link a size premium to a decision on a debt equity adjustment. The *Decision on 2004 Rates* declined to follow the AIB's recommendation, noting that a size premium must be evaluated on its own merits, not imposed to compensate for the results of the application of other factors. We reach the same conclusion this year. No adjustment will be made to reflect differences in the size of insurance companies.

2. Asset Returns

Insurers receive the cost of capital from returns on their investments as well as premiums from policyholders. If the investment yields are understated, the provision for underwriting profits in the rates will increase, and policyholders will pay more in premium. A realistic expectation of the asset returns is required if the rates are to be reasonable. Both the SRB and the AIB calculate an estimate of the return on assets for use in their

models. Although the Myers Cohn model does not require an estimate of asset returns, the AG recommends a methodology for calculating an asset return value for use in setting 2005 rates. All parties use countrywide data from Best's *Aggregates and Averages* for property casualty insurance companies to determine the classes of assets that insurers hold. Per \$1,000 of invested assets, approximately sixty-six percent is invested in bonds, twenty percent in stocks, and the remainder in mortgages, real estate, and cash.

a) The AIB

The AIB states that it calculates its asset returns using current market yields, actual insurance company portfolio distributions and bond durations, and actual expected stock investment tax rates. Applying that methodology to updated data, the AIB's surrebuttal filing recommends an initial overall asset return of 4.81 percent, which is then adjusted downward to 4.53 percent to reflect investment expense of 0.28 percent, and ultimately to 3.30 percent to reflect investment tax rates. The SRB recommends asset returns of 5.41 percent before taxes and expenses and 3.95 percent post-tax and expenses. The AG recommends a pre-tax investment return of 6.2 percent and an after-tax value of 4.7 percent.

The AIB argues that the SRB's estimates are unrealistically high. It identifies four differences between its approach and that of the AIB. First, the AIB calculates asset returns over a one-year historical data period, while the SRB uses three months. The AIB argues that the twelve-month period is consistent with the longstanding CDM for calculating risk-free yields and with that it is correct to use the same twelve-month period to calculate bond yields as well as the cost of capital. It argues that there is no reason to create an exception to the methodology that has been in place since 1982.

The calculation of bond maturities is also disputed. The AIB argues that they should be measured according to the NAIC approach, that looks at time to maturity as of the date of the balance sheet that is under examination. It asserts that this method correctly matches current bond market yields to current maturities, not to inflated past maturities. In contrast, the AIB points out, the SRB measures bond maturity according to the time when the bond was purchased, thus applying current bond market yields to previous maturities. The AIB argues that the SRB's method produces unrealistically high yields because it attributes yields to bond maturities that are no longer correct. It asserts that bonds are

priced daily on the market, based on movements in interest rates, not on the time to maturity or date of issue of bonds. The SRB's methodology, the AIB states, assigns different yields to a twenty-year bond issued ten years ago, depending on whether it was bought ten years ago or today. The AIB takes the position that the bond market, the NAIC and the AIB methodology treat these bonds identically. According to the AIB, the SRB agrees that current market yields provide the correct measure of bond yields, and that it is therefore erroneous to attribute current market yields to inflated bond maturities that no longer exist in current portfolios.

Third, the AIB opposes the SRB's stock tax rate, arguing that it proposes an incorrect hypothetical value, when an IRR model should use actual expected tax cash flows. It asserts that the SRB's witness could offer no justification for the 17.5 percent tax rate on stocks, and notes that he had previously recommended a more realistic, and actual, stock investment tax rate of 26.67 percent. Finally, the AIB opposed the SRB's asset returns because they are based on a data source, ValuBond, which is not available at no cost to all parties, while the AIB's are based on the Wall Street Journal. The AIB argues that the Commissioner should not have to use limited resources either to obtain ValuBond data at no cost on a daily basis only or to pay a subscription fee for more extensive access.

The AIB argues that the AG's asset returns are inflated because they are improperly based on embedded returns. The AIB argues that the use of embedded yields violates all principles of underwriting profit modeling, as expressed in professional literature and the Casualty Actuarial Society Actuarial Standard of Practice No. 30.

b. The SRB

The SRB utilizes a four-step process to estimate the asset returns for its IRR model, relying in each case on Mr. Parcell's testimony to support its recommendations. The SRB, like the AIB, bases its estimated on consolidated property/casualty industry group data on insurers' investment portfolios, as reported by A. M. Best, as the basis for its estimates. It notes that the AIB recommended use of data from *2004 Best's Aggregates and Averages*, when it is available. The SRB and the AIB use the same categories of investments and the same allocations of assets to each category to develop their recommendations on asset returns.

The SRB asserts that it and the AIB generally agree that the calculation of asset returns should be based on fair estimates of returns on the typical insurer investment portfolio for 2005. However, the SRB recommends calculating asset returns for each class of security, except for common stock, on the basis of a three-month average yield, from July through September 2004, while the AIB uses a twelve-month trailing historical average for the risk-free spot yield. The SRB argues that its approach is superior because it averages every business day within the three-month period, while the AIB actually uses an average of twelve spot yields spread over twelve months. Therefore, the SRB concludes, its methodology includes more real data points. It also argues that the three-month yield includes more current data, that such data are the most accurate predictor of future performance, and are particularly valuable in a volatile market. The *Decision on 1982 Rates*, the SRB argues, did not address the merits of a three-month versus a twelve-month average yield, but considered only whether an estimate based on an average of treasury bill yields over a year was superior to using a single day rate. The SRB contends that a conclusion on the relative stability of a twelve year average and a single day data point is not relevant to a decision to adopt a three-month average.

The SRB and the AIB also disagree on the maturity structure of insurers' bond portfolios and the different estimates of current yields for intermediate- and long-term bonds. The SRB recommends use of ten-year maturities for intermediate and twenty-year maturities for long-term bonds, while the AIB defines intermediate-term bonds as those with maturities of one to ten years and long-term bonds as those with maturities of more than ten years. The SRB asserts that the crux of the disagreement is whether expected bond yields should be based on bond maturities as measured by the date of purchase or as measured by the remaining time to the maturity date, regardless of the purchase date. The SRB asserts that it is appropriate to estimate yields based on the maturities of bonds at the time of purchase.

The SRB asserts that the dispute over bond maturities is related to the issue of using "embedded" rather than "actual" bond maturities to determine an appropriate rate of return on assets. It argues that Mr. Parcell uses the term "actual" to refer to the terms in place when the bond was first issued, while the AIB refers to such maturities as "embedded" rather than "actual" or "current." The SRB asserts that whatever language is

used, the real dispute is over what durational values better represent what insurers will realistically expect to earn on the investments they hold. It argues that the NAIC requirements for reporting bond yields in annual statements do not represent the NAIC's view on the assignment of bond maturities for the purpose of determining the asset rate of return or demonstrate how regulators should view asset portfolios for that purpose. Further, the SRB notes, it is proper to use accounting concepts, rather than market concepts, because *Best's Aggregates and Averages* reflect accounting values. In addition, the SRB points out, the maturity date for bonds issued by insurers does not change throughout the life of the bond, and that bonds are not actually sold and repurchased each year. It notes the testimony of Dr. Richard Derrig, a witness for the AIB, that valuing bond yields as if they were purchased annually at the remaining maturity level would imply that insurers annually decrease the average maturity of all bonds held, a conclusion that the SRB says is incorrect.

The SRB bases its yields for intermediate- and long-term bonds on data reported by ValuBond. Although the AIB objects to the use of that data, rather than data published in the Wall Street Journal, on the ground that it is "private," the SRB states that ValuBond data are publicly available on Yahoo. Further, it argues, ValuBond data are preferable because the Wall Street Journal does not publish detailed yields by rating or by maturity. In any event, the SRB asserts, the AIB concedes that either source may be used to calculate current bond yields.

The SRB points out that the AG agrees that the AIB's method of calculating bond maturity artificially depresses the value of bond returns. It argues that the Commissioner should adopt its recommendations this year because, with the exception of using a three-month average to estimate current yields, it is similar to the recommendation she adopted in the *Decision on 2004 Rates*. Further, it asserts, Mr. Parcell's methodology has produced rates of return that reflect actual industry results and are, on average, somewhat lower than industry results. The SRB notes, as well, that the methodology that Mr. Parcell uses in Massachusetts, which classifies bond maturities by ten-year periods, differs from that he uses in other states to calculate bond maturities. It argues that the methodology he recommends in this proceeding results in a more reasonable approximation of the yields on invested assets than the understated yields produced by the AIB's methodology.

c. The AG

The AG observes that the SRB agrees with the premise articulated by the Supreme Judicial Court almost twenty-five years ago, that insurers typically earn profit on investments, not underwriting. Therefore, the AG argues, it is important that the investment rate of return in the profit model be fair and reasonable.

The AG argues that historical data are used in virtually every aspect of ratemaking, and that they provide the most reasonable estimates of 2005 asset returns. He notes that insurers report the total amount of their invested assets, their total investment income, and their realized and unrealized capital gains, thus making reliable data available. Using actual reported investment returns, the AG argues, reflects insurers' actual investment strategies and portfolios, and allows an accurate estimate of the distribution of insurers' invested assets. Using historical data on assets also allows historical tax payment data to be used to calculate the investment tax rate. The AG argues that the AIB, even though it rejects historical data for its IRR model, acknowledges that the annual statement returns may be a better predictor of returns. The AG asserts that over the last 16 years, property/casualty insurers earned an average pre-tax investment return of 7.4 percent, and that in 2003 they earned investment income, including realized and unrealized capital gains of 8.0 percent. The after-tax return was 6.7 percent. The AG notes that he has not used these values in his models, but considers them to be indicative of insurers' ability to earn a substantial return on their investments.

The AG recommends a combined approach for estimating investment returns, that looks at the most recent reported investment income and adds the long-term investment return on capital gains. He argues that it is responsive to current rates, and determines returns earned by companies on their actual portfolios, rather than on an imaginary portfolio. The long-term capital gains component, the AG asserts, provides a stable capital gains return based on actual capital gains earnings. This method, the AG argues, reflects substantive changes from year to year, lessens fluctuations, is simple to calculate and based on indisputable data, and is consistent with estimates of loss costs, which rely on reported experience to set 2005 values. The AG combines the 2003 4.4 percent investment income with a 1.8 percent average of realized and unrealized capital gains over the period 1988-2003 produces a pre-tax investment return of 6.2 percent, and after applying a 23.5 percent

tax rates, based on the rates insurers actually pay, results in after-tax investment return of 4.7 percent. The AG argues that this is a reasonable value and a realistic expectation of 2005 returns.

Addressing the use of Value Line data, the AG argues that if Value Line data are used exclusively to calculate the cost of capital, consistency requires that its data should also be used to estimate the 2005 asset return. He asserts that Value Line growth estimates and projections that are used in the cost of capital calculations are in part based on Value Line companies' asset returns, and on asset return projections made by Value Line analysts. In addition, the SRB witness testified that the Value Line company group includes few Massachusetts insurers and differs in financial profile from the average property/casualty insurer. In circumstances where the cost of capital is derived from a non-average group of companies, the AG argues, data from the same group should be used to calculate the asset rate of return. Further, the AG argues, investors who rely on Value Line data also rely on Value Line asset returns; it is therefore unreasonable to accept their reliance on Value Line data related to the cost of capital but to ignore reliance on Value Line asset return data. The AG points out that Value Line reports several values for asset returns, excluding capital gains, including a projected 2005 investment income rate of 5.5 percent, and 2007-2009 projection of 6.5 percent and an historical average from 2000-2004 of 5.5 percent. To each of those values, the AG adds a long-term realized and unrealized capital gain of 1.8 percent. In addition, he notes, Value Line provides income tax rates. The AG argues that the average of the Value Line historical and projected values is about 6.1 percent after tax.

The AG argues that the AIB's asset return model is incorrect and should not be used to set profit provisions for 2005. He states that the AIB applies current interest rates to a presumed asset distribution that is intended to reflect the asset categories held by insurers. Underlying the AIB's model is the assumption that insurers turn over their entire bond portfolio each year and purchase new bonds with the maturity data indicated on the annual statement. However, the AG notes, Mr. Parcell testified that in the real world insurers do not do that. The AIB's methodology, the AG argues, systematically understates the bond returns that insurers will earn and consistently reduces the maturity of bonds the companies actually hold. The SRB, the AG argues, uses the AG's asset model

but partially compensates for the results by applying longer-term rates to the AIB categories. However, the AG comments, Mr. Parcell acknowledged that the average bond maturity in his calculation is too low. The AG states that the average maturity of bonds held by insurers is fifteen years, longer than the maturities used by the AIB and the SRB. Because interest rates rise with increases in the maturity length of the investment, using a shorter maturity period results in downward bias in the expected investment return. The AG notes that Mr. Parcell, in estimating asset returns in other states, uses a different and simpler methodology to estimate bond returns, taking a single average maturity date for bonds and applying a single interest rate that reflects that average maturity. The AG points out that Mr. Parcell testified that in his experience that methodology more accurately reflects actual expected rates of return than the AIB's model. The AG argues that the unrealistic nature of the AIB and SRB asset returns is lower than any of the historical and Value Line after tax values, and that the AIB method produces unreasonable results.

Discussion and Analysis

a. The time period for estimating asset yields.

To estimate asset yields, the SRB uses three months of data from the period July through September 30, 2004, the most recent period available before it submitted its surrebuttal filing. For United States Government bonds Mr. Parcell relies on Federal Reserve Statistical Releases, and for other bonds on ValuBond, a reporting service. The common stock he relies on a three-horizon CAPM, with a beta of 1.0. Preferred stock data are taken from the Mergent Bond Record. For all types of bonds, the AIB averages twelve months of data taken from the Wall Street Journal. Like the SRB, it estimates returns on common stock from its three-horizon CAPM estimates, and preferred stock from the Mergent Bond Record. The AIB argues that the use of twelve months of data to estimate asset returns is consistent with the methodology for estimating the risk-free rate from United States treasury strips. The SRB states that more recent data is less stale and a better predictor of returns for 2005.

We are persuaded that the methodology for estimating asset returns should be responsive to current conditions and should emphasize more recent data. We conclude that a twelve-month average, as used by the AIB, focuses on stability, but does not adequately reflect more recent data. We find that averaging the SRB's data over the three-month

period that is in the record will improve responsiveness but still reflects multiple data points.

b. Data Sources

The AIB voices a preference for Wall Street Journal bond data, on the ground that it is the same source as that used for the risk-free rate and is easily available. No party asserts that the ValuBond data is inaccurate or otherwise unreliable. That it charges for access for older data does not persuade me that it is inappropriate for use in ratemaking. On this record, it appears that ValuBond provides more information on bonds than does the Wall Street Journal, and I will therefore approve its use.

The AG argues that asset returns should be derived from historical data, and that Value Line data should be used as a basis for asset returns, on the ground that it is consistent with reliance on Value Line data both for other purposes in this proceeding and by investors. However, as discussed above, Value Line data is not used exclusively to calculate the equity beta, because of adjustments that it performs on raw data. We would be reluctant to adopt Value Line data on asset returns, absent consensus that Value Line produces accurate values. Furthermore, the Commissioner has not, historically, relied on market forecasts of insurers investment returns, but instead estimates values based on an analysis of asset distributions and anticipated yields, a methodology that is responsive to current market conditions. While historical data is useful as a reference point to assess the long-term accuracy of methodologies, the AG has not demonstrated that an approach based principally on history or the use of Value Line data would improve the methodology for developing an underwriting profits provision. While we do not reject the proposition that the use of asset return data from Value Line or other financial services might be appropriate, we will not approve their use this year.

c. Bond maturities and yields

The AIB again bases its bond yields this year on the assumption that the bond maturities should be calculated as the time remaining on the bond as reflected in the 2003 annual statements, and that bond yields should be estimated as the current market yield for bonds of that maturity. It argues that the NAIC takes this approach in evaluating company portfolios. The AIB's approach this year follows that proposed last year. The *Decision on 2004 Rates* rejected the AIB's methodology, finding that it would significantly understate

what insurers would reasonably expect to earn on investments that they hold, not what they might earn if they purchased the investments now. We have been presented with no reason to reverse that decision. Both the SRB and the AG agree that the AIB's methodology should not be adopted. We will adopt, for purposes of this proceeding, intermediate and long-term bond yields for all bond asset classes, the average of three months of data as estimated by Mr. Parcell in the SRB's advisory and rebuttal filings.

d. The Investment Tax Rate

The AIB recommends that the Commissioner use an investment tax rate on equities of 29.4 percent. That value is comprised of a 14.2 federal tax rate on dividends and a capital gains tax rate of 34.1 percent. The AIB argues that it calculated its capital gains component from a real-world portfolio turnover rate of 36 percent for an actively managed portfolio. The AIB contends that the 17.5 percent tax rate on equities, as recommended by the SRB and the AG, is incorrect because it is a made-up number with no basis in reality and could not be realized by holding stocks for many years. It asserts that it has never been, and could not be, defended on the merits, observes that the SRB's witness, David Parcell, offered no evidentiary support for a 17.5 percent rate, and notes that Mr. Parcell has previously estimated the appropriate tax rate on equities, based on actual data, to be 26.67 percent.

The SRB and the AG recommend an investment tax rate on common stock of 17.5 percent. The SRB refers to the conclusion in the *Decision on 2004 Rates* that that rate, which had been approved in prior years, had not been shown to be unreasonable, and argues that the AIB has failed this year to provide any new or persuasive evidence that the continued use of a 17.5 percent tax rate on common stock is no longer appropriate.

The AG states that the appropriate tax rate for stocks was addressed in the Decisions on 1999, 2001, 2003 and 2004 Rates. He argues that the AIB has presented no new evidence on this issue this year, and that its recommendation should not be adopted. The AG asserts that the theory underlying the AIB's method, that a specific fraction of capital gain is realized each year, assumes inflexible behavior that no real investor would pursue. Further, the AG argues, the AIB's recommended investment tax rate is unreasonable, because it is higher than historical tax rates and all Value Line historical and projected tax rates.

The question of an appropriate tax rate on common stock has been raised in past years. The Decision on 2004 Rates, at 53, noted that the reasoning underlying the estimate of a 17.50 percent investment tax rate on common stock had been extensively addressed in other years. We have been provided with no new argument and no persuasive evidence this year that insurers no longer have the opportunity through tax planning to reduce capital gains taxes below the 35 percent marginal rate. We therefore approve the continued use of a 17.50 tax rate on stock transactions to calculate the investment tax rate. We will adopt the AIB's proposed values for the investment tax rate on other asset yields.

e. Investment Expense

The AIB recommends an investment expense provision of 0.28 percent, noting that the SRB agrees with that value. It argues that its recommendation is based on the actual investment expenses associated with insurance company investment portfolios. It criticizes the AG's recommendation of a hypothetical 0.15 percent investment expense provision, on the ground that it lacks an evidentiary basis and is based on an assumption that contradicts reality. In addition, it notes that the accounting model offered by Mr. Schwartz utilizes the 0.28 percent value. Whatever the reason for using a hypothetical value for investment expense in the Myers Cohn model, the AIB argues that it is proper in an IRR model to use the true expected value of cash flows and expenses.

We will therefore approve an investment expense provision of 0.28 percent that reflect the range of expenses that insurers incur on their investment portfolios.

3. Other Issues

'''

a. The Single Policy Model

The dispute that arose in the proceeding to set 2004 rates over the merits of a single policy model as opposed to a model that assumed issuance of one policy per quarter did not arise this year. Both the AIB and the SRB use single policy models this year. The AG's argument that the SRB and AIB models do not adequately reflect that insurance is an ongoing enterprise is not persuasive. The single-policy model has been the basis for ratemaking for many years. Automobile insurance rates are set for one year, and the underwriting profit provision applies to individual policies. It is therefore reasonable to use a single policy model to derive that provision. The asset returns and the method of

calculating the cost of capital and the leverage ratio are all empirical values derived from insurance industry data that recognize that it is an ongoing enterprise.

b. Premium Cash Flows in the IRR Model

The premium cash flows that the AIB employs are those developed from a 2001 Private Passenger Automobile Premium Payment Call. The SRB's initial model was based on the AIB's cash flows, and the AG did not oppose their use. The SRB's revised model does not reject the AIB's premium cash flows as inaccurate; rather, it abandons them as a factor in the model. Because we do not approve use of the SRB's revised model for 2005, we approve use of the AIB's premium cash flows to derive the underwriting profits provision for 2005. The *Decision on 2003 Rates*, that adopted the results of that call, also noted that it would be appropriate to conduct such studies periodically, to capture the effect of changes in the marketplace and of the payment choices that insurers offer to consumers.⁵⁰

c. Loss Cash Flows

The AIB this year included in its filing loss cash flows for the physical damage coverages based on both gross losses and losses adjusted to reflect the receipt of salvage and subrogation recoveries, *i.e.*, net losses. It argues, however, that a loss flow calculated on a net basis produces negative surplus at various times, a result that is inappropriate in an IRR model. The AIB's calculation of a physical damage underwriting profits provision based on net cash flows produced a value of +0.81 percent; its calculation based on gross flows produced a value of +4.32 percent.⁵¹ Rather than use that value, however, the AIB requests a one-time adjustment that would judgmentally set the underwriting profits provision for physical damage at +5.0 percent. The AIB argues that it is incorrect to continue the use of net cash flows as the Commissioner did in the *Decision on 2004 Rates*. The *Decision on 2004 Rates* considered, and rejected the AIB's argument that the underwriting profits provision for physical damage coverages should be based on gross loss flows. The reasons for the Commissioner's conclusion are articulated at length in that decision and need not be repeated here. Ms. Blank, testifying for the SRB this year, stated

⁵⁰ If models proposed in the future are to be based on alternatives to current data on premium flow, a new study may be essential.

⁵¹ Neither of these values reflect a 0.34 adjustment for earned but uncollected premium; adding that value makes the AIB's recommendation more positive.

that in her experience most insurers calculate their physical damage profit provision on a net basis. The AIB's preference for a provision based on gross losses thus appears to be contrary to industry practice. The AIB this year has offered no additional argument and no evidence that persuades us to reverse the methodology adopted in the *Decision on 2004 Rates*.⁵²

d. Leverage Ratios

Leverage ratios are utilized to determine the amount of surplus that must be committed to support the insurance policy obligations. The AIB first recommended use of an actual leverage ratio, *i.e.*, the ratio of reserve to surplus, of 1.68 percent, a value that it later updated to 1.67 percent. Its recommendation is based on a five-year average of annual statement surplus and reserves for all insurers except state funds, as published in *Best's Aggregates and Averages*. It notes that its methodology is consistent with the use of countrywide data for other underwriting profits provision, and that the companies on which it calculates its value are the same as those it uses in its calculation of asset returns and Federal investment tax rates. It asserts that its calculated value is close to the 1.61 ratio approved in the *Decision on 2004 Rates*.

The SRB's model uses a hypothetical leverage ratio of premium to surplus of 2.00. It also, in its advisory filing, provides an alternative calculation of reserve to surplus ratios based on a limited sample of companies that predominately write private passenger and homeowners insurance, as compiled in *Best's Aggregates and Averages*. The SRB then removes from the sample the State Farm group, because it has an exceptionally low reserve to surplus ratio. Based on its analysis, the SRB concludes that an appropriate reserve to surplus ratio is 1.45. However, the SRB rejects the concept that a leverage ratio should be developed from balance sheet data, arguing that such data do not fully reflect an economic view of the insurance business. It asserts that balance sheet data include data on policies written in the prior years and do not adequately measure the surplus needed to support a new policy issued at a future date. The SRB notes that before an IRR model was adopted, a regulatory premium to surplus ratio was used to develop the underwriting profits provision.

⁵²The *Decision on 2004 Rates* invited an overall analysis of the effects of subrogation on all coverages, but no such analysis was submitted this year.

The AIB objects to the SRB's approach, arguing that it contradicts use of an actual, rather than a hypothetical ratio. In addition, the AIB argues, the SRB admits that actual reserve to surplus ratios in the industry are lower than the SRB's hypothetical recommendation. According to the AIB, the AG's Myers Cohn model implicitly uses a 2.00 premium to surplus ratio. It further notes that his witness, Mr. Schwartz, through the use of actual premium to surplus ratios of 1.375 in his accounting models, effectively admits that a hypothetical two to one premium to surplus ratio is incorrect and different from actual industry data. The AIB argues that neither the SRB nor the AG has offered evidentiary justification for their leverage ratios, or a reason to reverse the *Decision on 200 Rates* on this issue. It asserts that a hypothetical leverage ratio should not be used in an IRR model, which is supposed to use expected cash flow. Further, the AIB argues, the AG placed into the record a 2.19 reserve to surplus ratio, derived from a series of adjustments to the 1.67 reserve to surplus ratio.

The AG, noting that models may use various leverage ratios, states that the 2 to 1 normative ratio of premium to surplus that the SRB recommends has traditionally been used in Massachusetts. He argues that the normative ratio offers two advantages over the data-determined ratios: stability and appropriateness from a regulatory standpoint. He points out that a normative ratio may be used in either an IRR or a CYAM. The AG provides two different leverage ratios in the two CYAM calculations in his advisory filing. He argues, however, that if the AIB's reserve to surplus approach is used, the data should be adjusted to reflect the \$68 billion dollar reserve deficiency for the property casualty industry as reported in an A. M. Best Special Report for the year ending 2003. The AG notes that this deficiency is not specific to automobile insurance, but points out that the AIB's leverage ratio is based on all lines data. The AG's recommended adjustment would increase the AIB's leverage ratio to 2.19.

Discussion and Analysis

In the *Decision on 2004 Rates*, the Commissioner adopted a value for the reserve to surplus ratio based on countrywide data. That choice is consistent with the use of countrywide data to estimate other components of the underwriting profit provisions, such as: 1) market data used to calculate the DCF estimate of the cost of capital; 2) the equity beta used in the CAPM; and 3) asset distributions. The AG's witness, Mr. Schwartz,

testified that this is an acceptable method of determining a leverage ratio. We agree that the use of actual experience is generally preferable for ratemaking. We are not persuaded that a nominal premium to surplus ratio is appropriate for use in a model that is expected to examine financial realities associated with private passenger automobile insurance rates.

We are also not persuaded that the alternative values calculated by the SRB in its advisory filing should be adopted. Adopting the results of a specific sample selected by the SRB is inconsistent with the use of countrywide data. The AG's recommendation for an adjustment to the countrywide data is based on reported deficiencies in countrywide loss reserves, most of which, he agrees, do not relate to automobile insurance. We therefore conclude that an adjustment based on deficiencies in other lines of insurance is not appropriate for developing the underwriting profits provision. We will therefore adopt the AIB's recommended reserve to surplus ratio of 1.67.

e. Finance Charge Income

The AIB recommends a finance charge income provision of 1.74 percent. The AG incorporates this value into its CYAM models; the SRB recommended its use in the IRR model appearing in its initial filing. However, the SRB later revised its model to eliminate a finance charge provision entirely. The AIB argues that because no party disagrees with its finance charge recommendation, it should be approved.

The AIB estimates expected finance charge income in 2005 as the value developed from the adjusted 2003 finance charges as a percent of premium. The finance charge income from the 2003 is reported on the Premium and Finance Charge Survey that companies complete annually, and is then adjusted by changes that companies report in that survey. This year, adjustments were made for changes to finance charge income made by The Premier, Quincy Mutual and Boston Old Colony insurance companies. The AIB states that no adjustment could be made for changes made by the Arbella Mutual Insurance Company, because they were not proportional across all risks. The AIB states that additional changes to billing plans may be made for the 2005 rate year, but argues that other change in the marketplace may affect actual results; as an example, some companies have expanded the availability of payment through electronic fund transfers ("EFTs"), that incur no installment charges. Fee increases by some companies may therefore be offset by

reduced fee income to others. I note that the AG adopts the AIB's recommendation in his models.

On this record, I am persuaded that the value of 1.74 percent is a reasonable value for finance charge income and will adopt it.

f. Earned But Uncollected Premium (EBUP)

The AIB recommends a 0.34 percent provision for EBUP. It points out that the SRB incorporates that same value in its IRR model, as does the AG in his proposed models. Therefore, the AIB states, the 2005 rates should include an EBUP provision of 0.34 percent. The AIB's recommended provision this year is slightly lower than that proposed last year. No party disputes the 0.34 percent value, and it will be adopted.

g. Other Revenue

In addition to premium, insurers collect other revenue in the form of various fees and charges. The *Decision on 2001 Rates* approved an adjustment of 0.14 percent of premium to reflect other income. The value of other revenue is estimated from information reported in the Premium and Finance Charge Survey. The AIB states that the 2004 Survey showed a 0.16 percent value for other income. The AIB recommends, however, that no adjustment be made for "other revenue" received by insurers because it introduces inconsistencies into the rates. The AIB argues that, in the real world "other investment expense" outweighs that revenue. The investment expenses that, it asserts, offset other revenue, are those shown on lines 10a, 11 and 12 of the investment expense income exhibit on company annual statements. The companywide direct written premium is used as the base for determining such expenses as percent of premium, and are then weighted by Massachusetts private passenger written premium to obtain an estimate of other investment expense that corresponds to other revenue. The AIB asserts that no other rate component reflects other investment expense, and that failure to reflect both other expenses and other revenues introduces negative bias into the rates.

The AIB argues that the SRB agrees with its position, because it did not modify its finance charge adjustment to reflect other revenue. The AG's recommended 0.16 percent adjustment for other revenue adjustment, adopts the AIB's estimated value but rejects its position that other revenue should be offset by other investment expense. The AIB argues

that the AG fails to respond to the basic point that insurers pay such expenses in the real world, and that those expenses are not accounted for elsewhere in the rates.

The AG opposes the AIB's position that other revenue should not be included in the underwriting profits provision because it is entirely offset by interest expense, depreciation on real estate and other deductions from investment income. He argues that the AIB has established no relationship between the AIB's proposed deductions and the revenue that is obtained from fees imposed on policyholders, and that the NAIC does consider any of these items to be investment expenses. The AG points out that the AIB seeks to deduct interest that companies pay on money that they borrow, without including the income that they earn by investing those funds. Depreciation on real estate, he asserts, is reflected in the asset returns shown in the AIB IRR model; deducting it elsewhere would double count any effect it may have. The AG also comments that the AIB did not provide any information on the "other deductions" that it claims should be subtracted from investment income. To the extent that these expenses are relevant to the actual investment portfolios of insurance companies, the AG argues, they already reflect in asset returns.

The AG argues, as well, that the AIB has sought to include interest expense, depreciation and other deductions in prior rate proceedings, either as part of the investment expenses or as a reduction to other revenue, and that the Commissioner has rejected its proposals. This year, he asserts, the AIB has offered no information or made any argument that it has not put forth before. Therefore, he argues, the Commissioner should, as she did in the *Decision on 2004 Rates*, include other revenue in the rates, and decline to adopt the AIB's recommendation to offset other revenue with other investment expenses.

Discussion and Analysis

The *Decision on 2004 Rates* noted that for the reasons set out in the *Decision on 2001 Rates* it is reasonable to include other revenue in the underwriting profits provision. The record this year offers no basis for rejecting that conclusion. The *Decision on 2004 Rates* also observed that the items that the AIB characterizes as investment expenses are reported on annual statements as deductions from income, not investment expenses. It concluded that the AIB had not demonstrated that they should be correctly viewed as investment expenses, or how they relate to Massachusetts automobile insurance. The AIB has offered no evidence or argument this year that persuades us to revise our conclusions.

We therefore include an other revenue value of 0.16 percent in the underwriting profit provision and decline to adopt the AIB's proposal to incorporate "other investment expense" as an offset to other revenue.

Jean F. Farrington, Esq.
Hearing Officer

V. CONCLUSION

The premium rates, classifications and ruling reflected in this decision are hereby promulgated in accordance with the authority granted to me by Section 113B of Chapter 175 and other sections of the Massachusetts General Laws. As ordered, rate manuals are to be prepared in conformity with the instructions specified in this decision.

Any person or organization aggrieved by any part of this decision may, within twenty days of the date hereof, file a petition for review by the Supreme Judicial Court as provided in Section 113B of Chapter 175 of the Massachusetts General Laws.

This decision has been filed on this 15th day of December, 2004 in my office and with the Secretary of State as a public document.

Julianne M. Bowler
Commissioner of Insurance