

**State of Vermont**

**Department of Labor and Industry**

**Legislative Study on Workers Compensation**

Mercer Risk, Finance & Insurance Consulting

November 15, 2003

---

**Scott J. Lefkowitz, FCAS, MAAA, FCA**

# CONTENTS

I. Presentation of Results .....	1
A. Introduction .....	1
1. Scope of Assignment .....	1
2. Terminology Defined.....	3
B. Conclusions .....	7
C. Recommendations.....	10
II. Analysis.....	13
A. Observations.....	13
1. Benefit Costs and Claim Related Expense Costs.....	13
2. Legal Defense and Other Non-Direct Benefit Costs.....	15
3. Insurance Company Expenses and Profit.....	16
4. Assigned Risk Market .....	18
B. Discussion of State Insurance funds.....	19
III. Data Used for this Study .....	22
A. Data Provided by the National Council on Compensation Insurance.....	22
B. Data Provided by the State of Vermont .....	22
C. Data From Other Sources .....	23
IV. Approach and Methodologies .....	24
A. Description of Basic Actuarial Methods .....	24
B. Key Considerations .....	24
V. Caveats & Limitations.....	25

## VI. Graph Listing

### A. Benefit Analysis – Without Cost Related Adjustments

1. Lost Time Claim Frequency per Million of Premium Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
2. Indemnity Severity Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
3. Medical Severity Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
4. Indemnity Severity Trends and Medical Severity Trends Without Cost Related Adjustments, by State, All Years, 10 Years, 5 Years
5. Combined Indemnity and Medical Severity Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
6. Indemnity Pure Premiums Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
7. Medical Pure Premiums Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
8. Combined Indemnity and Medical Pure Premiums Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000

### B. Benefit Analysis – With Cost Related Adjustments

1. Lost Time Claim Frequency per Million of Premium With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
2. Indemnity Severity With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
3. Medical Severity With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
4. Indemnity Severity Trends and Medical Severity Trends With Cost Related Adjustments, by State, All Years, 10 Years, 5 Years
5. Combined Indemnity and Medical Severity With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
6. Indemnity Pure Premiums With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
7. Medical Pure Premiums With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
8. Combined Indemnity and Medical Pure Premiums With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000

### C. Other Benefit Related Graphs

1. Lost Time Claim Frequency per 100,000 Workers, by State, 1997-98, 1998-99, 1999-00
2. Medical Benefits as a Percentage of Total Benefits, by State, 1982-2000

### D. Allocated Loss Adjustment Expense

1. Filed Allocated Loss Adjustment Expense Ratios to Loss, by State, 2001, 2002, and 2003
- E. Company Expense and Profit
1. Ratio of Company Premium to Loss Cost Premium, Data Reported to NCCI, by State, 1995-2001
  2. Average Company Selected Loss Cost Multiplier 1998-2002, Top Nine Writers in Vermont
  3. Average Company Selected Expense and Profit Provision 1998-2002, Top Nine Writers in Vermont
  4. Average Company Selected Profit Provision Only 1998-2002, Top Nine Writers in Vermont
  5. Average Company Selected Total Expense Provision Only 1998-2002, Top Nine Writers in Vermont
  6. Average Company Selected Production Expense Provision Only 1998-2002, Top Nine Writers in Vermont
  7. Average Company Selected General Expense Provision Only 1998-2002, Top Nine Writers in Vermont
  8. Average Company Selected Tax Expense Provision Only 1998-2002, Top Nine Writers in Vermont
- F. Classification Analysis
1. Statewide Average Current Approved Loss Cost Excluding Loss Adjustment Expense, Comparison by State
  2. Statewide Average Current Approved Loss Cost Excluding Loss Adjustment Expense, Comparison by State, Excluding Clerical Classifications 8810, 8868, and 8872
  3. Code 2883, Furniture Manufacturing, Pure Premium Comparison by State
  4. Code 3574, Computing, Recording or Office Machine Manufacturing, Pure Premium Comparison by State
  5. Code 3632, Machine Shop, Pure Premium Comparison by State
  6. Code 5551, Roofing, All Kinds and Drivers, Pure Premium Comparison by State
  7. Code 5645, Carpentry, Pure Premium Comparison by State
  8. Code 8017, Store, Retail, Pure Premium Comparison by State
  9. Code 8018, Store, Wholesale, Pure Premium Comparison by State
  10. Code 8033, Store, Meat, Grocery and Provision Stores Combined, Pure Premium Comparison by State
  11. Code 8810, Clerical Office Employees, Pure Premium Comparison by State
  12. Code 8829, Convalescent or Nursing Home Employees, Pure Premium Comparison by State
  13. Code 8833, Hospital, Professional Employees, Pure Premium Comparison by State
  14. Code 8868, College, Professional Employees and Clerical, Pure Premium Comparison by State
  15. Code 9052, Hotel, All Other Employees and Salespersons, Drivers, Pure Premium Comparison by State
  16. Code 9101, College, All Other Employees, Pure Premium Comparison by State

17. Code 9180, Amusement Device Operation, Pure Premium Comparison by State

# I. PRESENTATION OF RESULTS

## A. Introduction

### 1. Scope of Assignment

Mercer Risk, Finance, & Insurance Consulting (hereafter referred to as "Mercer") has been engaged by the Department of Labor and Industry, State of Vermont, (hereafter referred to as the "State") to conduct a study of workers compensation in the State of Vermont.

Specifically, Mercer has agreed to:

1. Identify the primary cost drivers regarding the cost of purchasing workers compensation insurance in the State of Vermont;
2. Identify potential remedies available to the State of Vermont to at least stabilize the fluctuation in costs over time, if not actually reduce them in the near future; and
3. Identify and compare experience in other jurisdictions.

The scope of Mercer's analysis, as detailed in our response to the State's Request for Proposals, consists of the following:<sup>1</sup>

1. A detailed analysis of the most recent available Vermont workers compensation data from the National Council on Compensation Insurance (NCCI) to determine the impact of changes to the cost of actual workers compensation benefits on premium charges, what have been the cost drivers, and how these cost drivers have changed over the past ten years. In our analysis we evaluate:
  - a. Current overall loss cost and assigned risk rate level adequacy;
  - b. Required current differential between assigned risk rates and voluntary loss costs;
  - c. Current values and trends in lost time claim frequency;
  - d. Current values and trends in indemnity costs per lost time claim;
  - e. Current values and trends in medical costs per lost time claim;
  - f. Current values and trends in indemnity costs per unit premium charged;
  - g. Current values and trends in medical costs per unit premium charged;
  - h. Current values and trends in loss adjustment costs; and
  - i. Current values and trends in the distribution of benefits between medical and indemnity costs.

---

<sup>1</sup> The State originally requested a detailed analysis of current and past distribution of workers compensation medical costs in Vermont, by type of provider and major diagnostic category. Mercer agreed to provide this analysis, contingent on data availability. Data was not available to conduct this analysis. The unavailability of detailed data to provide this information is addressed in our recommendations.

2. A detailed analysis of filed loss cost multipliers, and changes to those multipliers over time to determine the impact of changes to insurance company charges for expenses and profit on premium charges, what the cost drivers have been, and how the cost drivers have changed over time.
3. A detailed analysis of components (expenses, commissions, profit) of filed loss cost multipliers to determine the average contribution of each component, as well as a distribution of charges by component, and how these items have changed over time.
4. A benchmarking analysis of the following items in Vermont to<sup>2</sup> Connecticut, New Hampshire, Rhode Island, Maine, Massachusetts, Oregon, Colorado, and Florida.<sup>3</sup>
  - i. Current values and trends in lost time claim frequency;
  - ii. Current values and trends in indemnity costs per lost time claim;
  - iii. Current values and trends in medical costs per lost time claim;
  - iv. Current values and trends in indemnity costs per unit premium (pure premium) charged;
  - v. Current values and trends in medical costs per unit premium (pure premium) charged;
  - vi. Current average manual charged loss costs for selected workers compensation classifications; and
  - vii. Current values and trends in loss adjustment costs.
5. A comparison of alternative workers compensation insurance delivery systems. We will comment on the following alternative models, using at least three states, but possibly more, as examples:
  - Monopolistic State Funds
  - Competitive State Funds
  - The Oregon Model
6. Suggestions regarding changes to the current system in Vermont in order to stabilize or reduce the magnitude of workers compensation premium rate increases.
7. Suggestions regarding other areas of analysis that will help the parties understand recent trends in workers compensation costs and evaluate alternatives for improving the system.

---

<sup>2</sup> To the extent that information was available and/or applicable in specific states, as noted in Mercer's response to the Request for Proposals. Mercer added the examination of loss adjustment expense at a later date.

<sup>3</sup> Florida was not included in Mercer's response to the Request for Proposals, but was added at a later date at the request of the State.

## **2. Terminology Defined**

Terms commonly applied by the actuarial and insurance communities are used throughout this report. The following are clear definitions of these terms, with applicable discussion specific to Vermont, to assist the readers of this document.

### **Indemnity Losses**

The cost associated with workers compensation wage replacement benefits.

### **Medical Losses**

The cost associated with workers compensation medical benefits.

### **Loss Adjustment Expense (LAE)**

Expenses associated with the cost of administering and adjusting workers compensation claims. LAE is generally partitioned into two components, allocated loss adjustment expense (ALAE) and unallocated loss adjustment expense (ULAE), both of which are described below.

### **Allocated Loss Adjustment Expense (ALAE)**

Expenses associated with the cost of administering and adjusting workers compensation claims that may be directly attributed to individual claims. The primary component of ALAE is defense-related costs, such as attorney fees and court costs. Other components include, but are not limited to, charges for appraisers, private investigators, hearing representatives, inspectors and fraud investigators that may be attributed to individual claims.

### **Unallocated Loss Adjustment Expense (ULAE)**

Expenses associated with the cost of administering and adjusting workers compensation claims that are not directly attributed to individual claims. Examples of ULAE include salaries and the cost of overhead associated with claims adjustment professionals.

### **Medical Only Claims**

Workers compensation claims for which there are only medical costs and where there are no wage replacement benefits. These tend to be relatively minor claims, and represent, generally, between 70% and 80% of all workers compensation claims filed. Latest available data examined indicates that in Vermont, medical only claims are 74% of all workers compensation claims filed. Countrywide, this number is 78%. The cost of medical only claims is small, generally between \$500 and \$1000. Latest available data examined indicates that in Vermont, medical only claims cost approximately \$500. Countrywide, this number is \$533. It is important to note that while medical only claims represent, typically, 75% of all workers compensation claims, medical only claims represent only between 5% and 10% of total workers compensation benefits paid. In Vermont, latest available data examined indicates that medical only claims generate only 5% of the cost of workers compensation benefits.

## **Lost Time Claim**

Workers compensation claims for which indemnity benefits are paid. These tend to be the most expensive claims, and represent, generally, between 20% and 30% of all workers compensation claims filed. Latest available data examined indicates that in Vermont, lost time claims are 26% of all workers compensation claims filed. Countrywide, this number is 22%. The average cost of lost time claims is material, generally between \$20,000 and \$30,000. It is important to note that typically, the most costly lost time cases are permanent total disability cases because for those cases, lifetime wage replacement costs are paid, as well as all medical costs associated with the workplace injury, which are considerable for the most serious cases. The cost of lost time claims is specifically addressed in this study. Latest available data examined indicates that in Vermont, lost time cases cost approximately \$23,000 (policy year 2000) and is within the range of values of the New England states examined (VT, ME, NH, RI, and CT). It is important to note that while lost time claims represent, typically, 25% of all workers compensation claims, lost time claims represent between 90% and 95% of total workers compensation benefits paid. In Vermont, latest available data examined indicates that lost time claims generate 95% of the cost of workers compensation benefits.

## **Lost Time Claim Indemnity Severity**

The average indemnity cost per lost time claim. The indemnity severity is the actuarial estimate of the total final cost of indemnity benefits for a specific group of lost time claims, divided by the number of lost time claims. Groups are generally defined by the policies that provide coverage. For example, lost time claims in policy year 2000 are all lost time claims covered by policies effective in 2000. In some cases, the number of lost time claims must be forecast as well, due to time lags between date of occurrence and the date data is recorded in statistical databases.

## **Lost Time Claim Medical Severity**

The average medical cost per lost time claim. The medical severity is the actuarial estimate of the total final cost of medical benefits for a specific group of lost time claims, divided by the number of lost time claims.

## **Lost Time Claim Total Severity**

The sum of the lost time claim indemnity severity and the lost time claim medical severity.

## **Loss Cost**

The average cost of workers compensation benefits and loss adjustment expense per \$100 payroll, for each workers compensation employer classification. Loss costs in Vermont exclude insurance company expenses and profit.<sup>4</sup> In Vermont, the final premium rate is the

---

<sup>4</sup> The definition of a loss cost actually varies by state, and depends on a specific state's statutes. For example, in Oregon and Georgia, loss costs exclude all LAE, and provide only for the cost of workers compensation indemnity and medical benefits. In those states, insurance companies must factor in the cost of LAE in addition to overhead expense and profit needs.

loss cost multiplied by a loading factor, called a loss cost multiplier, that factors in a specific insurance company's estimate of its own overhead expense and profit needs.

**Loss Cost Multiplier**

The factor, which when applied to loss costs, loads in a provision for insurance company expenses and profit. Insurance company expenses typically include general expenses, taxes, and production expenses.

**Indemnity Loss Ratio**

The average indemnity cost per unit premium charged. Indemnity cost is the actuarial estimate of the total final cost of indemnity benefits for a specific group of policies. The premium charged excludes insurance company expenses and profit for the purpose of this report.

**Medical Loss Ratio**

The average medical cost per unit premium charged. Medical cost is the actuarial estimate of the total final cost of medical benefits for a specific group of policies. The premium charged excludes insurance company expenses and profit for the purpose of this report.

**Total Loss Ratio**

The sum of the indemnity loss ratio and the medical loss ratio.

**Pure Premium**

For the purpose of this study, pure premium is defined as the expected cost of workers compensation benefits per \$100 payroll, prior to a number of actuarial/technical adjustments that convert the pure premiums into loss costs. Pure premiums may be calculated individually for indemnity and medical benefits.

**Reinsurance**

A transaction between insurance companies that shifts part (or all) of the insurance written by one insurance company to another. Reinsurance transactions are transparent to the policyholder. So if, for example, an employer's workers compensation insurer "reinsured" the cost of claims above \$100,000 with another insurance company, the employer would simply never be aware of such a transaction. A primary reason insurance companies transact reinsurance is to spread the risk of exceptionally large claims. This type of risk sharing is an integral part of the insurance market without which the insurance industry would not be able to provide insurance to nearly as many policyholders as it does. The cost of reinsurance is critically dependent on available investment returns and availability of capital to support reinsurance transactions. Greater investment returns and greater availability of capital increase the supply of reinsurance and therefore decrease the price of reinsurance (soft market), and visa versa (hard market).

### **National Council on Compensation Insurance (NCCI)**

NCCI operates as a not-for-profit rating, statistical and data management services organization. NCCI collects and processes workers compensation data on behalf of its member insurance companies. Based on this data, NCCI compiles applications for workers compensation loss costs and rates in states where it is licensed to do so, including Vermont. NCCI also provides other services on behalf of the insurance industry.

## B. Conclusions

### 1. Benefit Costs

- a. **Benefit costs of workers compensation claims in Vermont are not exceptional.**
  - i. The average cost of workers compensation benefits per \$100 payroll is within the range of values for states examined.
  - ii. Examination of the average cost of workers compensation benefits for individual workers compensation classifications indicates the same.
  - iii. Lost time claim frequency, indemnity severity, and medical severity are within the range of values for states examined.
  - iv. In general, costs in Vermont are greater than in Oregon, approximately the same as in Colorado, and materially less than in Florida.<sup>5</sup>
- b. **Trends in benefit costs of workers compensation claims in Vermont are not exceptional.**
  - i. Changes to the average cost of workers compensation benefits per \$100 payroll in Vermont are similar to and within the range of trends for New Hampshire, Maine, Rhode Island, Connecticut, Oregon, and Colorado.<sup>6</sup>
  - ii. Changes to lost time claim frequency, indemnity severity, and medical severity over time in Vermont are similar to and well within the range of trends for states examined.<sup>7</sup>
- c. **Medical costs as a percentage of workers compensation benefits in Vermont have grown from approximately 36% in 1982 to approximately 48% in 2000. This pattern of growth is not exceptional, with the same pattern of growth observed in all states examined.**
  - i. The growth in medical costs as a percentage of total benefit costs is the expected result of medical inflation that is typically greater than wage inflation.
- d. **Legal defense and other direct non-benefit costs of workers compensation claims in Vermont are at the lower end of the range of costs defined by the states examined, and have been relatively stable for the past 5 years, the period of measurement.**
  - i. This is an indication of a system that is non-litigious and efficient, in that greater portions of premium provide for the cost of direct benefit costs.
- e. **The potential impact of large single catastrophic claims on Vermont's insurance market is material and exceptional because of Vermont's small size.**
  - i. Average annual workers compensation costs in Vermont have been less than \$100 million statewide<sup>8</sup>. A single large claim of \$5 million will therefore have a

---

<sup>5</sup> Florida, Oregon and Colorado have different workers compensation systems than Vermont, discussed later in this report.

<sup>6</sup> Trends in overall costs as well as for frequency and severity are almost identical for all states examined from approximately 1990 through 2000. Trends prior to 1990 differ significantly from some states.

<sup>7</sup> See footnote 6.

material impact on statewide costs because of the small volume of statewide losses.

- ii. For policies written in 2000, there are three claims reported to date in Vermont with total (all three claims combined) costs currently reported in excess of \$10.5 million. These three claims had, approximately, a 9% impact on workers compensation premiums charged in Vermont.
- iii. It is important to note that the extraordinary size of these claims is primarily due to medical benefits. For all three claims combined, medical costs are approximately 70% of the total recorded costs at this time.
- iv. The potential occurrence of exceptionally large claims, while small, is not immaterial. In Virginia, five years ago, there was an \$18 million claim, of which \$17 million in costs were due to medical benefits.

## **2. Insurance Company Expense and Profit**

### **a. Average insurance company published rate provisions for expenses and profit in Vermont increased from approximately 19% to 24% between 1998 and 2002.**

- i. The increase is almost entirely due to increases in the profit provision, which increased from an average of approximately -4% to 0% during this period.
- ii. The provision for expenses<sup>9</sup> other than profit has increased only slightly between 1998 and 2002, from approximately 23% to approximately 24%.

### **b. Increases to average insurance company rate provisions in Vermont for expenses and profit are not exceptional.**

- i. Similar increases are observed in Maine, Connecticut, New Hampshire, and Colorado, based on data from the NCCI.
- ii. Our experience in other states indicates that this is a national phenomenon and a direct consequence of current low investment returns and the current insurance market.<sup>10</sup>
- iii. Our experience with other states and large self-insured employers indicate that a primary cost driver is the cost of reinsurance to insurance companies.

## **3. Overall Impact on Workers Compensation Insurance Costs in Vermont**

### **a. Since 2001, the combined impact of changes to filed insurance company expense and profit provisions and loss cost increases have increased insurance costs in Vermont by approximately 26.0%, based on data reviewed by Mercer.<sup>11</sup>**

---

<sup>8</sup> Based on data from the NCCI.

<sup>9</sup> General, production, and tax expenses.

<sup>10</sup> The current insurance market is termed a hard market, that is, a lower availability of insurance and subsequent increase in prices charged. This is especially true in the reinsurance market.

<sup>11</sup> This statement is based on an analysis of filed loss cost multipliers, not of actual premium charges by insurers. Actual increases due to changes to insurer ratemaking policy will differ, *and are likely greater than the 26% Mercer was able to quantify*. Mercer was not able to capture the impact of these issues due to data limitations.

- b. **Only one fourth, or approximately 7.0%, of the 26.0% increase is due to changes to insurance company expense and profit provisions.<sup>12</sup> The remainder, approximately 19%, is due to increases to loss costs, which are based on actual claims experience.<sup>13</sup>**
- c. **Approximately half of the 19% increase to loss costs was due to the emergence of three extraordinarily large claims in Vermont.<sup>14</sup>**
- d. **The remaining half appears to be due to a one-time increase in costs during policy year 1998, as well as accelerating trends to medical costs.<sup>15</sup>**
- e. **Despite loss cost increases, current loss costs are still at levels less than those in effect prior to July 1, 1997.**
- f. **Assigned risk market share in Vermont is at the high end of the range of market shares nationally, based on data supplied by NCCI.**
  - i. Growth to the assigned risk market share in Vermont is not exceptional, and reflects a similar phenomenon observed in all states where data was available for examination.
  - ii. Additionally, it appears that with consideration of investment income, the assigned risk market in Vermont is self-funding and profitable.
  - iii. In a number of years, the assigned risk market was profitable even before consideration of investment income.

---

<sup>12</sup> See prior footnote.

<sup>13</sup> The 19% increase due to loss cost changes is a matter of record.

<sup>14</sup> Based on Mercer's analysis of the most recent approved workers compensation loss cost analysis for loss costs effective April 1, 2003.

<sup>15</sup> Based on Mercer's analysis of workers compensation data provided by the NCCI.

## C. Recommendations

### 1. Benefit Costs

- a. Changes to the amount of benefits and general administration of workers compensation claims in Vermont should be approached with caution. There does not appear to be a compelling need for material changes to these aspects of Vermont's workers compensation system. The current costs of benefits, as well as recent and expected future trends, are not remarkable when compared to those in a variety of other states examined in this study. Additionally, the majority of the workers compensation premium increases experienced by Vermont employers over the past three years are due to issues unrelated to benefit structure. These issues include market conditions, medical inflation, and the emergence of extraordinarily large claims which, due to the small size of Vermont's workers compensation market, have had a material impact on costs.
- b. The data does not indicate that the cost of medical benefits in Vermont is accelerating at rates that are unexpected or materially different than in other states. Nevertheless, the data does indicate that medical costs, as a percentage of workers compensation premiums, have recently begun to accelerate. To the extent that medical costs can be controlled, future rate increases could be tempered.

### 2. Data Collection

- a. The statistical data agent for the State of Vermont, NCCI, should collect, through the unit statistical plan<sup>16</sup>, detailed medical benefit cost data in a manner with the same quality as all other unit statistical plan data used for workers compensation ratemaking in Vermont. Data should be collected in a level of detail that would enable State agencies to study the current and past distribution of workers compensation medical costs in Vermont, by type of provider and major diagnostic category. This type of analysis is not possible at this time due to lack of data.

### 3. Market Structure

- a. The State should approach changes to the market structure<sup>17</sup> in Vermont with caution. While an analysis of market structure is beyond the scope of this study, we

---

<sup>16</sup>The unit statistical plan is the data collection plan by which the NCCI accumulates data on every insured workers compensation claim in Vermont. The data is used to determine loss costs and assigned risk rates for individual workers compensation classifications.

<sup>17</sup>Vermont is a competitive rating state, meaning that insurance companies may compete on price without regulatory approval. The precise system in effect in Vermont is one where loss costs are submitted by NCCI and reviewed by the state regulators. Insurance companies file and use their own expense and profit provisions. For employers unable to obtain insurance, Vermont has an assigned risk plan, where all insurance companies writing workers compensation insurance in Vermont are assigned, and must accept, employers who otherwise would be unable to obtain workers compensation insurance. The state regulates premium rates for assigned risks. The assignments are made in proportion to premium writings. Assigned risk rates act as an effective cap on the premium rates that insurers can charge. Other systems exist, which are described in more detail in the text of this report. Examples include states with a competitive state fund;

note that the data Mercer examined does not appear to indicate that the current cost of workers compensation insurance in Vermont, nor current trends in the cost of workers compensation insurance in Vermont, is dependent on market structure. We note that data indicates that approximately 7.0% of the 26% premium increase Mercer has been able to quantify has been due to insurance company expense and profit increases. The remainder has been due to large claim experience, accelerating medical trends, and what appears to have been a one-time step increase in costs several years ago. Additionally, we note that regardless of market structure, lower investment returns and increased reinsurance costs would have acted to increase premium rates in Vermont. Examination of data provided by the NCCI, as well as our own experience in other states, indicates that increases in insurance company expense and profit provisions is a national phenomenon, regardless as to market structure, and is being driven by lower investment income potential and increases to the cost of reinsurance.

- b. Should the State opt to consider market structure changes, we strongly recommend that the State conduct a detailed economic and actuarial feasibility study that quantifies potential savings, if any, to policyholders in both the current insurance market environment as well as in a market environment during which insurers are more willing to accept lower profit provisions, such as what existed in the middle to late 1990s.

#### **4. Reinsurance Mechanism**

- a. The State should investigate the feasibility of a mandatory reinsurance facility in Vermont that would provide reinsurance to all insurers licensed in Vermont to provide workers compensation insurance. Specifically, the basic form of the mechanism would be:
  - i. Mandatory for all insurers.
  - ii. Reinsurance would be on a per claim basis excess a retention on the order of \$200,000. (Only a detailed actuarial study could provide sufficient information to select an appropriate retention.) Possible variations would be a shared cost on a sliding scale basis. The key issue with selecting a limit scheme would be to ensure sufficient motivation on the insurer to manage claims in a manner to minimize costs.
  - iii. Funding would be through a pass-through assessment on workers compensation premium. The assessment could vary with class, hazard group, and experience, and would be actuarially determined.
  - iv. Published loss costs would be decreased to reflect the actuarial savings of the reinsurance facility. That is, published loss costs would be decreased by the portion of losses no longer retained by the employer's insurer, as these losses will have been transferred to the reinsurance facility.
  - v. The facility could then secure reinsurance for itself on the open reinsurance market, or retain part or all of the risk assumed from the employers of the State of Vermont. These decisions would be dictated by the nature of current market

---

that is, a state sanctioned insurance company that competes on the insurance market with other insurance companies.

- conditions and would enable the facility to take advantage of soft (favorable) market conditions, and to temper the impact of hard (unfavorable) market conditions.
- vi. Profits would be returned to policyholders in the form of lower future reinsurance premium (assessments).
- b. The advantages of such a system would be:
- i. A key issue in today's insurance market is the cost of reinsurance, which has increased dramatically over the past few years. Such a facility would reduce the cost of reinsurance to all insurers due to the purchasing power of a statewide reinsurance mechanism.
  - ii. Such a facility would temper the impact of large swings in the cost of reinsurance on policyholders.
  - iii. Such a facility would reduce the cost of reinsurance to policyholders by acting to take advantage of soft (favorable) market conditions, and decreasing reinsurance purchased during hard (unfavorable) market conditions.
  - iv. Such a facility would return profits to policyholders in the form of reduced future premium costs.
  - v. Such a facility would have reduced marketing and underwriting expenses, and, as a non-profit facility, would not pay taxes, further decreasing the cost of reinsurance.
  - vi. Such a facility would reduce the competitive advantage larger insurers enjoy due to their greater purchasing power on the reinsurance market. With mandatory reinsurance paid for by a pass-through assessment that would be the same for a specific employer, regardless as to insurer, smaller insurers may have greater opportunity in Vermont, thereby enhancing competition.
  - vii. The existence of such a system would eliminate the impact of large single claims on statewide loss costs and premium rates. This is an important issue in Vermont, given the impact that large claims have recently had on statewide loss costs.
- c. The key disadvantages of such a system would be:
- i. The State would have to avoid the temptation to expand the role of such a facility, should it be created.
  - ii. The State would have to recognize that such a facility would have to maintain significant surplus due to the nature of the risk being reinsured. The potential for fluctuation of results of excess workers compensation risk is material.
  - iii. The State would have to recognize that funds in such a facility belong to the policyholders, that is, the employers of Vermont. Any excess beyond what is required to provide for reinsured claims and risk should be returned to policyholders through lower future assessments, or some other equitable mechanism.
  - iv. Despite superficial simplicity, implementation of such a system would be a major undertaking.
- d. Such a facility already exists in practice in Minnesota. The Workers Compensation Reinsurance Association (WCRA) was created by law in 1979.

## II. ANALYSIS

### A. Observations

#### 1. Benefit Costs and Claim Related Expense Costs

##### a. Benefit costs of workers compensation claims in Vermont are not exceptional.

- ?? Comparisons indicate that the current average statewide cost of benefits per \$100 payroll in Vermont is not materially higher or lower than in the states examined. Costs are approximately the same as in Colorado, greater than in Oregon, and materially less than in Florida.
- ?? Comparisons made with and without key clerical classifications (8810, 8868, and 8872) result in the same conclusions. Measurements were made with and without clerical classifications so as to isolate the impact of the low cost of these classifications and prevent distortion due to varying exposure mix.
- ?? Comparisons of results for selected individual classes result in the same conclusions.

##### b. Trends in benefit costs of workers compensation claims in Vermont are not exceptional.

- ?? Comparisons indicate that changes in the total cost of benefits per unit premium charged, also known as "pure premiums," have not been materially different from other states examined. In general, pure premiums in Vermont decreased somewhat more rapidly than in other states during the early to mid 1990s, and increased somewhat more rapidly than in other states in the late 1990s and early 2000s. In Maine and Oregon, costs have decreased dramatically over time due to major system reforms. The reforms were implemented due to exceptionally high costs, which, at the time the reforms were made, were materially greater than costs in Vermont. However, the general cost trend in these states was similar to that observed in Vermont during the middle 1990s to early 2000s.
- ?? The same general behavior was observed for the component indemnity pure premiums and medical pure premiums. However, overall, across all states, there has been a general upward trend to the medical component over time, whereas the indemnity component has generally trended down over time. This is a direct impact of the long-term positive differential between medical inflation and indemnity cost inflation. Overall, indemnity cost inflation is driven primarily by wage inflation. Wages, notwithstanding injury severity, is the direct determinant of indemnity benefits. Medical inflation has, over the long-term, been significantly higher than wage inflation.
- ?? In 1998, there appears to have been a one time "step" increase to the medical pure premium component in Vermont. A similar step increase occurred to the indemnity component, but it was not as pronounced. It appears that this step increase was a primary cost driver underlying the

10.2% increase to voluntary loss costs effective April 1, 2001 in Vermont.<sup>18</sup> The increase to both the indemnity and medical pure premiums appears to have been driven by average lost time claim costs, and not average lost time claim frequency. Lost time claim frequency during this period remained relatively stable, while both indemnity claim costs and medical claim costs appear to have experienced a step increase.

**c. The key components of the benefit cost of workers compensation claims in Vermont, indemnity costs per lost time claim, medical costs per lost time claim, and frequency of lost time claims, are not exceptional.**

?? Comparisons indicate that the average cost of indemnity benefits per lost time claim in Vermont have consistently been in the lower portion of the range of costs defined by the other states examined. The average cost of indemnity benefits per lost time claim in Vermont is materially less than in Colorado and Florida, but materially greater than in Oregon.

?? Comparisons indicate that the average cost of medical benefits per lost time claim in Vermont have consistently been in the lower portion of the range of costs defined by the other states examined. The average cost of medical benefits per lost time claim in Vermont is materially less than in Florida, but somewhat less than in Colorado and Oregon.

?? Comparisons indicate that the frequency of lost time claims in Vermont have consistently been in the higher portion of the range of costs defined by the states examined. The frequency of lost time claims in Vermont have been consistently greater than in Colorado and Florida, and are currently greater than in Oregon, but have been less than in Oregon historically.

**d. Trends in the key components of the benefit cost of workers compensation claims in Vermont are not exceptional.**

?? Comparisons indicate that the long-term change in the average cost of indemnity benefits per lost time claim in Vermont has been approximately the same as in all states examined. We note that increases to the average cost of indemnity benefits per lost time claim in Vermont was somewhat lower than increases in other states during the late 1980's and early 1990's, but somewhat higher than in other states during the late 1990's and early 2000's. As noted previously, there appears to have been a one-time step increase to the average cost of indemnity benefits per lost time claim in 1998.

?? Comparisons indicate that the change in the average cost of medical benefits per lost time claim in Vermont have been approximately the same in all states examined. As noted previously, there appears to have been a one-time step increase to the average cost of medical benefits per lost time claim in 1998.

?? Comparisons indicate that changes in the frequency of lost time claims in Vermont have been approximately the same as in all states examined. We

---

<sup>18</sup>The impact on loss costs was delayed until 2001 due to the inherent lag between data availability and loss cost changes. Typically, there is a three to four year lag between the period during which loss experience is generated and the time that such loss experience is sufficiently mature and available for ratemaking purposes. For example, the data underlying the loss cost increase effective April 1, 2001 was generated by policy years 1997 and 1998.

note that lost time claim frequency per \$1 million dollars premium, adjusted to a 2000 wage and rate level, remained relatively constant during the 1980s and early 1990s, and then declined dramatically during the mid-1990s, and appears to have stabilized since. The decline in lost time claim frequency in Vermont during the 1990s is characteristic of a well documented national phenomenon that, according to NCCI and other independent sources, occurred across all occupation sectors and geographic regions.

**e. The percentage of workers compensation benefits that are medical in Vermont have grown from approximately 30% in 1982 to approximately 50% in 2000.**

?? As discussed earlier, this is a direct impact of the long-term positive differential between medical inflation and indemnity cost inflation.

?? The growth in medical costs as a percentage of total workers compensation benefits is not limited to Vermont, and is, in fact, a national phenomenon.

?? Medical benefits as a percentage of total workers compensation benefits in Vermont fall within the range of values of the states examined, and is not exceptional.

**2. Legal defense and other direct non-benefit costs**

**a. Legal defense and other direct non-benefit costs of workers compensation claims in Vermont are at the lower end of the range of costs defined by the states examined.**

?? Legal defense and other direct non-benefit costs of workers compensation claims, measured as a ratio to indemnity and medical costs, in Vermont is the lowest amongst New Hampshire, Colorado, Connecticut, Maine, and Florida, as forecast by the NCCI in 2001, 2002, and 2003. Measurements indicate that these costs are approximately 40% less than in Connecticut and Maine, and approximately one third the amount in Florida.

?? Legal defense and other direct non-benefit costs of workers compensation claims in Vermont, measured as a ratio to indemnity and medical costs, has historically been amongst the lowest amongst a majority of states.<sup>19</sup>

?? This is an indication of a system that is non-litigious and efficient, in that greater portions of premium provide for the cost of direct benefit costs.

**b. Legal defense and other direct non-benefit costs of workers compensation claims in Vermont have been relatively stable over the past 5 years.**

?? Legal defense and other direct non-benefit costs of workers compensation claims, measured as a ratio to indemnity and medical costs, in Vermont do not appear to be trending and appear to be relatively stable over time.

**3. Insurance Company Expenses and Profit**

---

<sup>19</sup>This conclusion was inferred by an examination of ratios of *total* loss adjustment expense by state in available historical data. Total loss adjustment expense includes both ALAE and unallocated loss adjustment expense, or ULAE. ULAE includes claim adjustment costs that cannot be directly allocated to individual claims, such as the salaries of claims adjustment professionals.

**a. Insurance company filed expense ratios in Vermont have increased only slightly from 1998 to 2002, from approximately 23% to approximately 24%.**

?? This information is based on the combined general expense provision<sup>20</sup>, production expense provision<sup>21</sup>, and tax provision as documented by top nine insurance writers in Vermont in their loss cost multiplier filings.

?? The individual general expense, production expense, and tax provisions underlying insurance company loss cost multiplier filings in Vermont have remained relatively **constant from 1998 to 2002.**

?? The provision for general expense increased from 7.1% to 7.6%, approximately.

?? The provision for production expense has increased from 12.3% to 12.6%, approximately.

?? The provision for taxes has remained constant at approximately 3.5%.

**b. Insurance company selected<sup>22</sup> profit provisions in Vermont have increased from -5.0% in 1998 to 0% in 2002.**

?? This information is based on the information as documented by the top nine insurance writers in Vermont in their loss cost multiplier filings.

?? This phenomenon is not limited to Vermont and is due to the reduction in available investment returns over this period as well as an overall market hardening, that is, a decrease in the availability of insurance and subsequent increase in prices charged.

?? Our experience with other states and large self-insured employers indicate that a primary cost driver is the cost of reinsurance to insurance companies.

---

<sup>20</sup> Typically includes overhead, salaries, and other operating expenses.

<sup>21</sup> Typically includes commission and other acquisition expenses.

<sup>22</sup> Selected profit provisions are calculated as the filed profit provision plus the difference between a company's indicated loss cost multiplier and a company's selected loss cost multiplier. In general, companies will file an indicated loss cost multiplier, based on the company's nominal required expense and profit needs, and then select a loss cost multiplier that is either less than or greater than the indicated. The difference is generally due the combined impact of the tier of risks the insurer intends to sell insurance to as well as general market conditions. The insurer will select a greater than indicated multiplier if the insurer intends to sell insurance to employers the insurer deems worse than average, and visa versa. The insurer will also select a greater than indicated multiplier if general market conditions permit the insurer to charge a profit greater than the insurer's stated nominal requirement. We have implicitly assumed that any difference between an insurance company's indicated loss cost multiplier and selected loss cost multiplier is due entirely to the insurer's adjustment of profit to reflect current market conditions.

**c. Selected loss cost multipliers in Vermont have increased from approximately 1.22 in 1998 to approximately 1.32 in 2002.**

- ?? This information is based on the information as documented by the top nine insurance writers in Vermont in their loss cost multiplier filings.
- ?? The increases are entirely due to increases to the nominal profit provision and the selected loss cost multiplier, as discussed earlier.
- ?? Similar increases are observed in Maine, Connecticut, New Hampshire, and Colorado, based on data from the NCCI. Our experience in other states indicates that this is a nationwide phenomenon, and a direct consequence of investment income and insurance market issues, as discussed earlier.

**d. Since 2001, the combined impact of changes to filed insurance company expense and profit provisions and loss cost increases have increased insurance costs in Vermont by approximately 26.0%, based on data reviewed by Mercer.<sup>23</sup>**

- ?? Only one fourth, or approximately 7.0%, of the 26.0% increase is due to changes to insurance company expense and profit provisions.<sup>24</sup> The remainder, approximately 19%, is due to increases to loss costs, which are based on actual claims experience.<sup>25</sup>
- ?? Approximately half of the 19% increase to loss costs was due to the emergence of three extraordinarily large claims in Vermont.<sup>26</sup>
- ?? The remaining half appears to be due to a one-time increase in costs during policy year 1998, as well as accelerating trends to medical costs.<sup>27</sup>
- ?? Despite loss cost increases, current loss costs are still at levels less than those in effect prior to July 1, 1997.

---

<sup>23</sup> This statement is based on an analysis of filed loss cost multipliers, not of actual premium charges by insurers. Actual increases due to changes to insurer ratemaking policy will differ, *and are likely greater than the 26% Mercer was able to quantify*. Mercer was not able to capture the impact of these issues due to data limitations.

<sup>24</sup> See prior footnote.

<sup>25</sup> The 19% increase due to loss cost changes is a matter of record.

<sup>26</sup> Based on Mercer's analysis of the most recent approved workers compensation loss cost analysis for loss costs effective April 1, 2003.

<sup>27</sup> Based on Mercer's analysis of workers compensation data provided by the NCCI.

#### **4. Assigned Risk Market**

**a. Assigned risk market share in Vermont is at the high end of the range of market shares nationally, based on data supplied by NCCI.**

?? Growth to the assigned risk market share in Vermont is not exceptional, and reflects a similar phenomenon observed in all states where data was available for examination.

**b. Additionally, it appears that with consideration of investment income, the assigned risk market in Vermont is self-funding and profitable.**

?? In a number of years, the assigned risk market was profitable even before consideration of investment income. That is, there was an underwriting profit in the assigned risk market.

## B. Discussion of State Insurance Funds

Many states have set up state insurance funds as a mechanism to promote availability of workers compensation insurance. State funds differ with respect to competitive structure. Under a monopolistic state fund<sup>28</sup>, employers are required to purchase workers compensation insurance from the state. Under a competitive state fund, employers may choose to purchase insurance from the state fund or from commercial insurance companies<sup>29</sup>. In some states, competitive state funds have been either initiated as, or transformed into, formal insurance enterprises<sup>30</sup>. State funds will provide insurance to all applicants, with the exception of Oregon, where the State Accident Insurance Fund (SAIF) is not required to offer insurance to all applicants. In Oregon, there is an assigned risk plan in addition to a competitive state fund.

State funds are designed to satisfy the objectives of availability of insurance, affordability of insurance, and service to insureds. Since they are not motivated by profit, arguments are made that state funds provide a more stable and efficient source of insurance coverage that is somewhat protected from the wild swings of the commercial insurance underwriting cycle. State funds may also enjoy other competitive advantages, such as tax exempt status. Due to specialization in workers compensation exposures in a single state, services such as loss control initiatives and claims management can often be administered efficiently under a state fund. However, state funds generally capture less than half the market share in a particular state, indicating that in a competitive market, commercial enterprises can compete effectively with state funds. Nevertheless, competitive state funds often attract a significant portion of the insurance market. This is partially due to competitive pricing and reduced corporate overhead. It may also result from the fact that many competitive state funds act as a market of last resort.

Key issues with state funds are adequate funding and pricing of insurance. Like commercial insurance companies, state funds must be adequately funded and reserved in order to preserve the fund's ability to pay losses. Commercial insurance companies and state funds alike generally rely on policyholder premiums and investment income to fund losses. However, in times of shortfalls of workers compensation funding, commercial insurers may have access to surplus from other lines of business, or in some cases, capital markets. State funds do not have these alternatives, and as a result, funding shortfalls can create serious problems for the state. This was the case

---

<sup>28</sup> North Dakota, Ohio, Puerto Rico, Washington, West Virginia, Wyoming

<sup>29</sup> Arizona, California, Colorado, Florida, Hawaii, Idaho, Kentucky, Louisiana, Maine, Maryland, Mississippi, Minnesota, Missouri, Montana, New Mexico, Oklahoma, Oregon, Rhode Island, South Carolina, Utah, New York, Texas, Pennsylvania

<sup>30</sup> Hawaii, Kentucky, Louisiana, Maine, Missouri, Rhode Island

for several state funds in the 1980's and early 1990's, and is currently an issue in California.

If a state fund has overly redundant funding, state government may attempt to appropriate excess moneys for other uses. This has been, and currently is, an issue in Oregon. This situation can ultimately be quite detrimental to policyholders, because premiums paid into the workers compensation fund should rightfully be used to benefit policyholders in the form of loss payments, insurance protection, or insurance-related services. If surplus from the state fund is appropriated by the state for other uses, the state fund is not benefiting the policyholders to the extent it should. Additionally, state funds require a greater margin for risk than a commercial insurance enterprise, as a state fund is generally a single line, single state provider of insurance. As such, a state fund is has greater susceptibility to the impact of economic dislocations and large single events that could create large losses. This is especially true in Vermont, with the very low state premium volume and loss experience.

It is possible that state funds may limit competition in smaller states. Since state funds tend to attract such a large share of the market, the remaining market needs to be large enough to generate competition. However, some smaller states do have successful competitive state funds. For example, state funds in Maine and Rhode Island were motivated by significant market crises in those states. The state funds have helped exacerbate the market crises, but the extent of competition in these markets may be questionable. Given that premium volume in Vermont is less than in Maine and Rhode Island, maintaining a competitive workers compensation market with a competitive state fund in Vermont is a concern.

While state funds may position themselves to be insulated from certain market forces, such as the influence of underwriting cycles, it should be noted that state funds are not immune to all market forces. Increasing reinsurance costs and increasing medical costs are two of the major issues throughout the workers compensation market across all states, and they are problems for state funds as well. It is important to note that during a hard market, when state funds face the same challenges as the commercial insurance market, premium growth will tend to be the greatest where state funds are the market of last resort.

With respect to the results of this study, it does not appear that the impact of market forces have been materially different in states with competitive state funds than in Vermont.

Monopolistic state funds function basically as an insurance company with no competition other than self-insurance. Monopolistic funds are generally created to promote certain social or economic goals as a matter of public policy in circumstances when mandatory or compulsory insurance is required and when the government believes that it would be unfair for private insurers to profit from insurance that is required by law.

Arguments regarding the advantages of a monopolistic insurance environment include universal availability of insurance to all employers in the state and the ability to enact programs that benefit the injured workers who are not necessarily represented by their employers or by the private insurance carrier. Additionally, statewide reforms in the system can be enacted swiftly and uniformly. Advantages of a competitive state fund apply as well. A major disadvantage of the monopolistic system is a lack of competition that ultimately may lead to system inefficiencies and higher costs for employers. A monopolistic system may be potentially more subject to manipulation by political forces and interests, and faces the same issues with respect to adequate funding and possible state appropriation of funds as their competitive counterparts.

Ohio is an example of a large monopolistic state fund. It writes approximately \$2 billion in annual premium. Over the past several years, programs to promote workplace safety have been introduced. For example employers are given premium discounts if they set up safety programs or initiate a drug free workplace program.

Displayed below is the rate level change for each of the monopolistic state funds from 1994 -2003:

<b>Percentage Rate Level Change By Year for Monopolistic State Funds<sup>+</sup></b>				
Year	North Dakota	Ohio*	Washington**	West Virginia
1994	+10.0	0.0	+3.8	Not Available
1995	-6.7	-7.3	-4.1	Not Available
1996	-0.7	-6.0	-31.8	+12.0
1997	-7.0	-15.0	+18.8	0.0
1998	-6.8	-6.0	-8.7	0.0
1999	-2.6	-.3.0	-2.3	0.0
2000	-11.3	-5.0	0.0	0.0
2001	-5.7	-5.0	-2.2	0.0
2002	-0.7	0.0	Not Available	0.0
2003	Not Available	+9.0	Not Available	+15.0

\* Ohio also issued dividends as follows: 20% in 1996; 75% in 1997; 125% in 1998 (includes 25% for prior year); 75% dividend in 1999; 75% dividend in 2000; 75% dividend in 2001 and 75% for ½ of 2002.

\*\* Washington's +18.8% increase in 1997 was not a general rate increase, but rather that rates were adjusted to compensate for the "windfall" decrease in 1996 rates.

+ Source: Ohio Bureau of Workers Compensation

Ultimately, the implementation of a monopolistic state fund becomes a matter of public policy.

### **III. DATA USED FOR THIS STUDY**

#### **A. Data Provided by the National Council on Compensation Insurance**

1. Rate filing and documentation underlying NCCI's application for revised loss costs and assigned risk rates and rating values in Vermont effective April 1, 2003.
2. Most recently available pure premium calculations ("A" sheets) for Vermont, Rhode Island, Maine, New Hampshire, Connecticut, Oregon, Colorado, and Florida.
3. Most recently available calculation of the assigned risk differential in Vermont.
4. Assigned risk market share by state for 1998 through 2002.
5. Loss development exhibits ("Early Warning Exhibits") and related information for Vermont, Rhode Island, Maine, Connecticut, New Hampshire, Oregon, Colorado, and Florida.
6. Filed allocated loss adjustment expense ratios in Vermont, Maine, Connecticut, New Hampshire, Colorado, and Florida.
7. Detailed information regarding lost time claim counts, premium, medical severity and indemnity severity in Vermont, Rhode Island, Maine, Connecticut, New Hampshire, Oregon, Colorado, and Florida.
8. Detailed listing of large losses in Vermont reported for the most recent five years of unit statistical plan data, by classification.
9. Assorted data acquisition (call) information.
10. Miscellaneous information available to Mercer through its on-line subscription with NCCI.
11. Miscellaneous information from the most recent five editions of the NCCI Statistical Bulletin.
12. Miscellaneous information provided in emails or verbally by NCCI personnel.

#### **B. Data Provided by the State of Vermont**

1. Most recent report from the consulting actuary representing the State of Vermont during proceedings related to NCCI's application for revised loss costs and assigned risk rates and rating values in Vermont effective April 1, 2003.
2. Detailed information regarding loss cost multiplier filings since the mid-1990s in Vermont.
3. Information relating to market share in Vermont.
4. Miscellaneous information provided in emails or verbally by State personnel.

## **C. Data From Other Sources**

1. Information from the Workers Compensation Rating and Inspection Bureau of Massachusetts.
2. Information from the American Association of State Compensation Funds.
3. Information from the Workers Compensation Insurance Rating Bureau of California.
4. Information from publications of the Insurance Services Office, Inc.
5. Information from the Ohio Bureau of Workers Compensation.
6. Information from the Workers Compensation Reinsurance Association of Minnesota.
7. Information from Mercer's proprietary databases.

## **IV. APPROACH AND METHODOLOGIES**

### **A. Description of Basic Actuarial Methods**

Actuarial methods employed in this study included loss development and claim development techniques whereby historical growth patterns are used to forecast expected future growth in manner such that the total cost of claims when all claims are reported and closed is estimated. In a similar manner, estimates of the total number of reported claims are developed.

Standard techniques to adjust historical losses and premiums to current wage levels, rate levels, benefit levels, and inflation levels were employed. Methodologies were generally the same from state to state to avoid bias.

Adjustments were made to ensure that the metrics calculated for individual states were consistently measuring the same quantities in order to accurately compare metrics between different states.

### **B. Key Considerations**

In most cases, conclusions offered in this study are based on visual assessment of the behavior of different metrics between states. While we believe these conclusions to be valid, it is important to note that Mercer did not conduct a detailed statistical analysis of different metrics. In our opinion, the conclusions and observations offered in this report are reasonable and supported by the numerous comparisons of workers compensation data from Vermont to the various states included in this study.

In many cases, assumptions were made regarding market share and the calculation of the impact of increased loss cost multipliers. While the results of our analysis are not exact, our conclusions appear to be supported by data produced independently by the State of Vermont and data collected by NCCI for the purpose of workers compensation ratemaking in Vermont.

Finally, data available from NCCI and other industry sources is, at best, several years old. While we do not believe that our observations and conclusions are any less valid today, the reader should be aware that the data underlying this analysis is several years old.

## V. CAVEATS AND LIMITATIONS

1. The experience in this report has been categorized as policy year, accident year, or calendar year, depending on data availability and application. Valuation dates of different data sources vary depending on availability and collection procedures.
2. The conclusions stated in the report are predicated on the assumptions that the selected reporting, reserving and payment patterns, frequency and severity trends, and claim distributions apply, and will continue to apply, to workers compensation experience.
3. Numerous judgments, assumptions, and actuarial techniques were used to develop the observations and recommendations in this report.
4. The study's conclusions are developed in the accompanying text, exhibits and appendices, which together comprise the report.
5. The report was prepared for the sole use of the State. The report is not intended to serve any other purpose than to provide information to the State to assist in policymaking decisions. The report may be distributed only in its entirety.
6. The data for this study was provided directly by various independent parties. In the study, we relied on the accuracy and completeness of this data without independent audit. If the data is inaccurate or incomplete, our findings and conclusions may need to be revised.
7. In addition to the assumptions stated in the report, numerous other assumptions underlie the calculations and results presented herein.
8. The study conclusions were based on analysis of the available data and on the estimation of many contingent events. Future costs were developed from the historical claim experience and covered exposure. To the extent that the selected claim reporting patterns, claim reserving patterns, and claim payment patterns, frequency trends, and severity trends do not apply, actual results may vary significantly from the projections presented in this report. Detailed statistical analyses of various state metrics were not conducted. Recommendations and conclusions were based on an assessment of the behavior of numerous metrics for the different states.
9. Numbers in the report are generally shown to more significant digits than their accuracy suggests. This has been done to simplify review of the calculations.
10. The conclusions are projections of the financial consequences of future contingent events and are subject to uncertainty. There may have been abnormal statistical fluctuations in the past, and there may be such fluctuations in the future. Due to the inherent uncertainties actual costs may vary significantly from our estimates.

11. Unanticipated changes in factors such as judicial decisions, legislative actions, claim consciousness, claim management, claim settlement practices, and economic conditions may significantly alter the conclusions.
12. The purpose of this report is to provide information to the State regarding workers compensation costs in the State of Vermont. Recommendations in this report should not be construed as advice to adopt or not to adopt a particular workers compensation system. Rather, it is intended to provide information such that public policy decisions can be made in an informed environment.
13. These caveats and limitations notwithstanding, the conclusions represent our best estimates.

## VI.GRAPH LISTING

## **A. Benefit Analysis – Without Cost Related Adjustments**

1. Lost Time Claim Frequency per Million of Premium Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
2. Indemnity Severity Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
3. Medical Severity Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
4. Indemnity Severity Trends and Medical Severity Trends Without Cost Related Adjustments, by State, All Years, 10 Years, 5 Years
5. Combined Indemnity and Medical Severity Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
6. Indemnity Pure Premiums Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
7. Medical Pure Premiums Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
8. Combined Indemnity and Medical Pure Premiums Without Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000

## **B. Benefit Analysis – With Cost Related Adjustments**

1. Lost Time Claim Frequency per Million of Premium With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
2. Indemnity Severity With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
3. Medical Severity With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
4. Indemnity Severity Trends and Medical Severity Trends With Cost Related Adjustments, by State, All Years, 10 Years, 5 Years
5. Combined Indemnity and Medical Severity With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
6. Indemnity Pure Premiums With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
7. Medical Pure Premiums With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000
8. Combined Indemnity and Medical Pure Premiums With Cost Related Adjustments, Nominal and Normalized, by State, 1982-2000

## **C. Other Benefit Related Graphs**

1. Lost Time Claim Frequency per 100,000 Workers, by State, 1997-98, 1998-99, 1999-00
2. Medical Benefits as a Percentage of Total Benefits, by State, 1982-2000

## **D. Allocated Loss Adjustment Expense**

1. Filed Allocated Loss Adjustment Expense Ratios to Loss, by State, 2001, 2002, and 2003

## **E. Company Expense and Profit**

1. Ratio of Company Premium to Loss Cost Premium, Data Reported to NCCI, by State, 1995-2001
2. Average Company Selected Loss Cost Multiplier 1998-2002, Top Nine Writers in Vermont
3. Average Company Selected Expense and Profit Provision 1998-2002, Top Nine Writers in Vermont
4. Average Company Selected Profit Provision Only 1998-2002, Top Nine Writers in Vermont
5. Average Company Selected Total Expense Provision Only 1998-2002, Top Nine Writers in Vermont
6. Average Company Selected Production Expense Provision Only 1998-2002, Top Nine Writers in Vermont
7. Average Company Selected General Expense Provision Only 1998-2002, Top Nine Writers in Vermont
8. Average Company Selected Tax Expense Provision Only 1998-2002, Top Nine Writers in Vermont

## **F. Classification Analysis**

1. Statewide Average Current Approved Loss Cost Excluding Loss Adjustment Expense, Comparison by State
2. Statewide Average Current Approved Loss Cost Excluding Loss Adjustment Expense, Comparison by State, Excluding Clerical Classifications 8810, 8868, and 8872
3. Code 2883, Furniture Manufacturing, Pure Premium Comparison by State
4. Code 3574, Computing, Recording or Office Machine Manufacturing, Pure Premium Comparison by State
5. Code 3632, Machine Shop, Pure Premium Comparison by State
6. Code 5551, Roofing, All Kinds and Drivers, Pure Premium Comparison by State
7. Code 5645, Carpentry, Pure Premium Comparison by State
8. Code 8017, Store, Retail, Pure Premium Comparison by State
9. Code 8018, Store, Wholesale, Pure Premium Comparison by State
10. Code 8033, Store, Meat, Grocery and Provision Stores Combined, Pure Premium Comparison by State
11. Code 8810, Clerical Office Employees, Pure Premium Comparison by State
12. Code 8829, Convalescent or Nursing Home Employees, Pure Premium Comparison by State
13. Code 8833, Hospital, Professional Employees, Pure Premium Comparison by State
14. Code 8868, College, Professional Employees and Clerical, Pure Premium Comparison by State
15. Code 9052, Hotel, All Other Employees and Salespersons, Drivers, Pure Premium Comparison by State
16. Code 9101, College, All Other Employees, Pure Premium Comparison by State
17. Code 9180, Amusement Device Operation, Pure Premium Comparison by State

