

**New Brunswick's  
Injury Regulation:  
Automobile Insurance Profits,  
Premiums, and Costs**

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## **Executive Summary**

On July 1, 2003, the New Brunswick government introduced legislation that set a cap of \$2,500 on the damages that could be obtained for pain and suffering in “minor personal” injuries (New Brunswick regulation 2003-20, “*The Injury Regulation*”). In this report we analyze the impact that this limit may have had on New Brunswick’s automobile insurance market. Specifically, we answer five questions:

### ***1. Impact on Profitability***

First, we ask whether profits on automobile insurance were unusually low in New Brunswick in the years prior to the implementation of the Injury Regulation (IR); and we investigate the impact that the IR may have had on profits in the years immediately following implementation. We find that the rate of return on equity for New Brunswick automobile insurance (All Coverages) averaged only 0.4 percent in the years 1996 to 2002; but that it rose dramatically, to over 30 percent in 2003—the year of the IR’s implementation—and remained at an elevated level for 2004, 2005, and 2006.

### ***2. Trends in Costs of Claims***

Second, because the IR was aimed primarily at reducing claims costs, we investigate whether the costs targeted by the IR had been increasing prior to its implementation. We find that, over the period 1998 to 2001, claims costs did not vary significantly. From 2001 until the implementation of the IR, however, claims costs were actually decreasing. Specifically, claims costs targeted by the IR, Third-Party-Liability-Bodily Injury claims costs, *decreased* from an average of \$444/vehicle in 1999 to \$382/vehicle in 2002—*before* the implementation of the IR.

### ***3. Automobile Insurance Premiums***

Third, we present data showing that, while claims costs were decreasing, premiums were increasing. We therefore ask whether the increase in premiums can be explained by changes in administrative costs or changes in the rate of return on insurers’ investments. Although insurer’s rate of return on investments did decrease, we find that the premium increase was larger than that which would have been required to offset that decrease. Further, due to decreasing claims costs, we find that had premiums not increased beyond the 2001 level, the after-tax return on equity (ROE) on All Coverages would have been 12.9 percent in 2003.

### ***4. Impact of Removal of the Injury Regulation***

Fourth, we estimate what the impact on the average automobile insurance premium would be if the Injury Regulation is permanently removed; and we ask what the impact would be on automobile insurance profits if premiums are held constant and the IR permanently removed. We find that average premiums would have to increase by \$207.40/ year if insurers were to continue to earn 24.5 percent after-tax ROE (2006) and the IR was removed. However, if the IR was

removed and premiums held constant, we estimate that All Coverages New Brunswick automobile insurance after-tax ROE would be 13.3 percent.

### ***5. The Role of Government Regulation***

The Injury Regulation is not expected to control premium instability. The IR reduces the quality of the automobile insurance product and the premium level but cannot be expected to reduce the effect of premium instability on consumers. Further, insurance industry profits have been above the target set by the New Brunswick Insurance Board during the time the IR has been in place.

# Section 1- Profitability of New Brunswick Private Passenger Automobile Insurance<sup>1</sup>

## 1.1- Introduction

New Brunswick's Regulation 2003-20 ("the *Injury Regulation*") set a cap of \$2,500 per claimant for non-pecuniary losses from "minor" personal bodily injury as the result of a motor vehicle accident. The *Injury Regulation* (IR) became effective for accidents occurring on or after July 1, 2003. The constitutionality of the IR is under question. Alberta's similar *Minor Injury Regulation*, in place since October 2003, was recently struck-down in the case of *Morrow v. Zhang* (2008).

In that Alberta case (*Morrow v. Zhang*), the Insurance Bureau of Canada retained actuary Mr. Joe S. Cheng, F.C.I.A. to calculate the profitability of automobile insurance companies in Alberta (hereafter referred to as the "Cheng Report"). The Cheng Report presented figures for the five-year period 1998 to 2002.<sup>2</sup> In this section of the current report, we apply the Cheng Report's methodology to New Brunswick and extend it to data for an eleven-year period: 1996 to 2006.<sup>3</sup> We also estimate profitability for Optional Coverages.

We make no claims with regards to the validity of the methodology employed in the Cheng Report.

## 1.2- All Coverages Combined

The most common measure of industry profitability (and the measure used in the Cheng Report), is after-tax "return on equity" (ROE) – that is, the industry's after-tax profits divided by the value of the investments made in the industry. In Table 1 and Figures 1 and 2, we show that New Brunswick All Coverages automobile insurance was profitable in the year prior to the introduction of the IR and has been profitable since that time.

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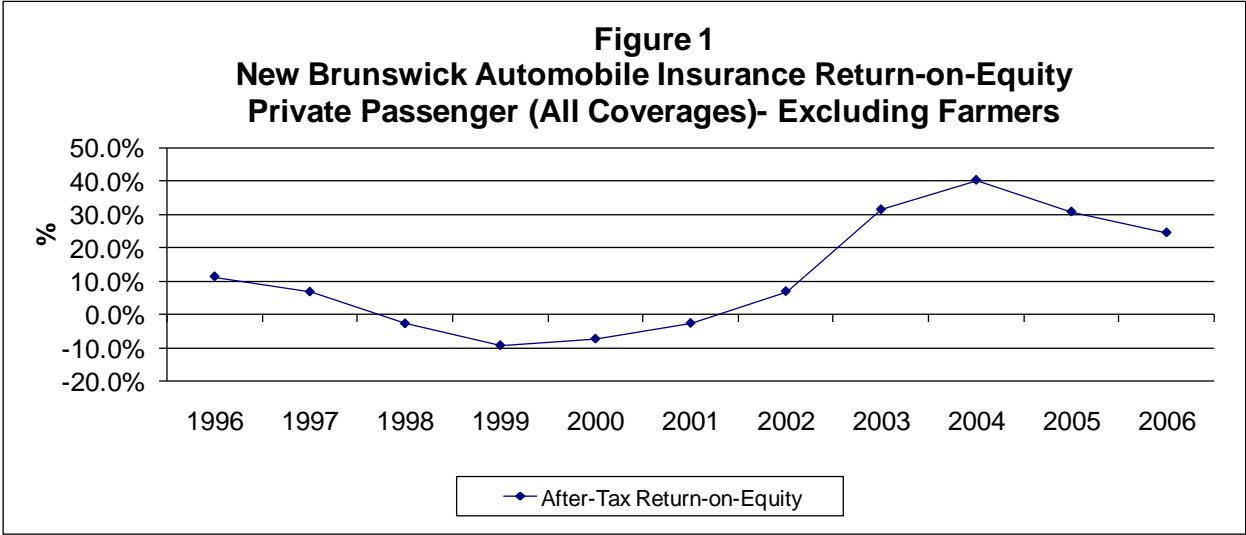
<sup>1</sup> excluding farmers

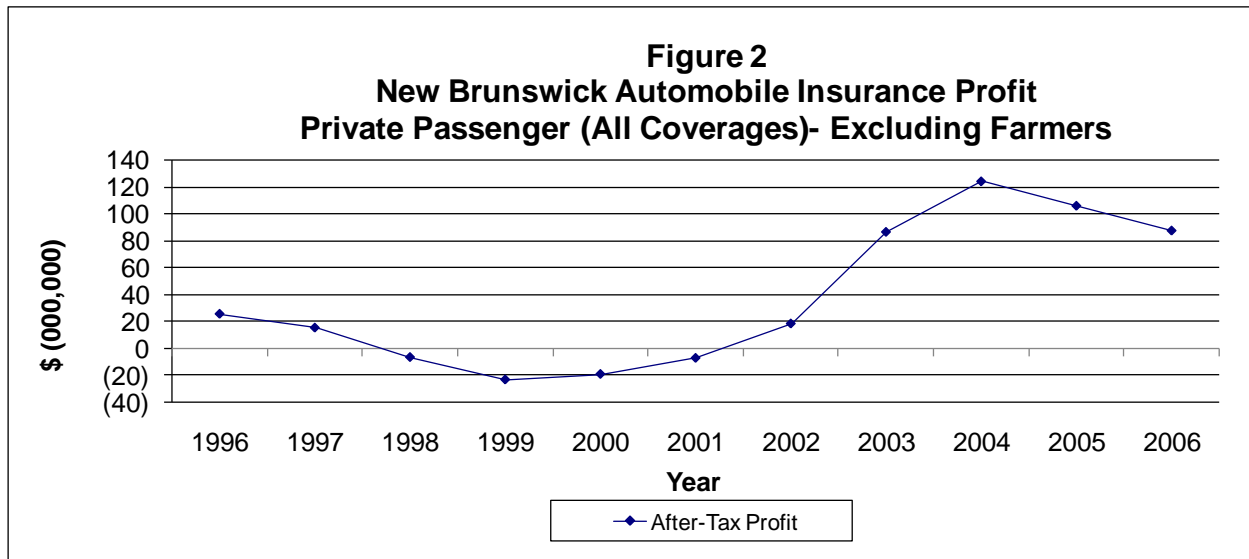
<sup>2</sup> Mr. Cheng's report, of March 29, 2007, was entitled "REPORT ON THE REVIEW of Insurance Reform-Premium and Claim Analysis By Gordon G. Smith and Theresa K. Reichert of Deloitte & Touche LLP."

<sup>3</sup>The methodology and calculations are explained in detail in the Appendix.

<b>Table 1</b>		
<b>New Brunswick Automobile Insurance Profitability Private Passenger (All Coverages) Excluding Farmers</b>		
<b>Year</b>	<b>Total Profit (millions) After-Tax Profit</b>	<b>After-Tax Return-on- Equity</b>
1996	25	11.3%
1997	15	6.7%
1998	(7)	-2.8%
1999	(23)	-9.4%
2000	(19)	-7.4%
2001	(7)	-2.7%
2002	18	6.8%
2003	86	31.4%
2004	124	40.3%
2005	106	30.7%
2006	87	24.5%

From Appendix, Exhibit 1





### 1.3- Mandatory/ Compulsory Basic Coverages<sup>4</sup>

The rates of return reported in section 1.2 refer to All Coverages – that is, to all types of private passenger automobile insurance coverage aggregated together. As the IR only affected claims by third parties for bodily injury damages, it is important to identify the profits that insurers were earning specifically on Third-Party-Liability coverage.

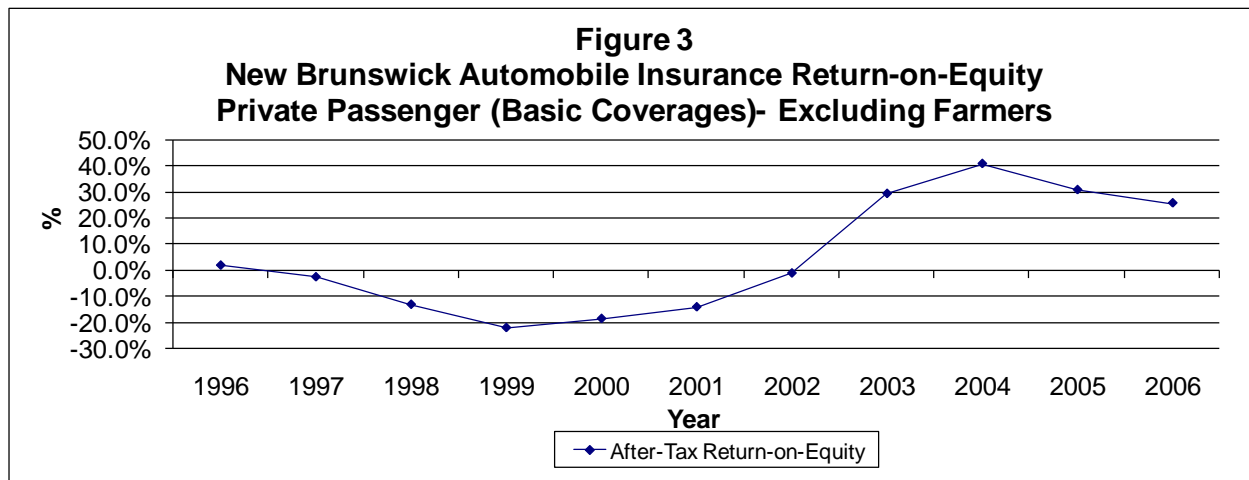
In New Brunswick, all motorists are required to have a minimum of \$200,000 in Third-Party-Liability coverage plus no-fault Accident Benefits insurance coverage. Our data do not allow us to identify the profits from this compulsory coverage exactly, but we are able to proxy it by combining all Third-Party-Liability coverage limits (\$200,000, \$500,000, \$1,000,000, etc.) and the Accident Benefits coverage together.

Table 2 and Figures 3 and 4 display data on profitability for New Brunswick Basic Coverages.

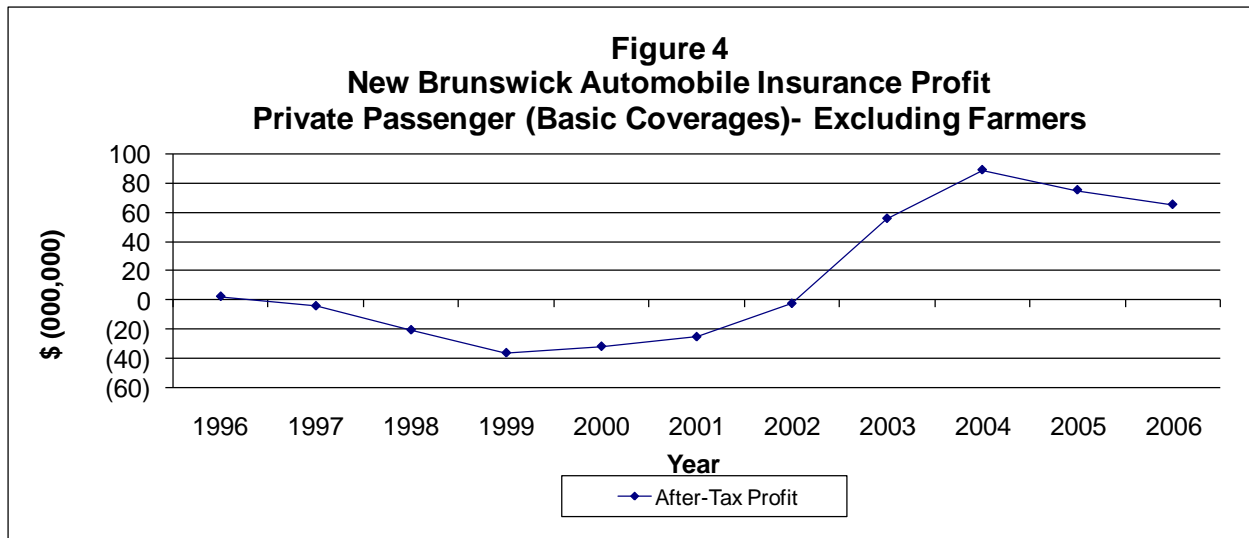
<sup>4</sup> Third-Party-Liability & Accident Benefits coverages

<b>Table 2</b>		
<b>New Brunswick Automobile Insurance Profitability Private Passenger (Basic Coverages) Excluding Farmers</b>		
<b>Year</b>	<b>Total Profit (millions) After-Tax Profit</b>	<b>After-Tax Return-on- Equity</b>
1996	2	1.7%
1997	(4)	-2.8%
1998	(21)	-13.3%
1999	(36)	-22.2%
2000	(32)	-18.8%
2001	(25)	-14.3%
2002	(2)	-1.3%
2003	56	29.2%
2004	89	40.6%
2005	75	30.6%
2006	65	25.5%

From Appendix, Exhibit 2





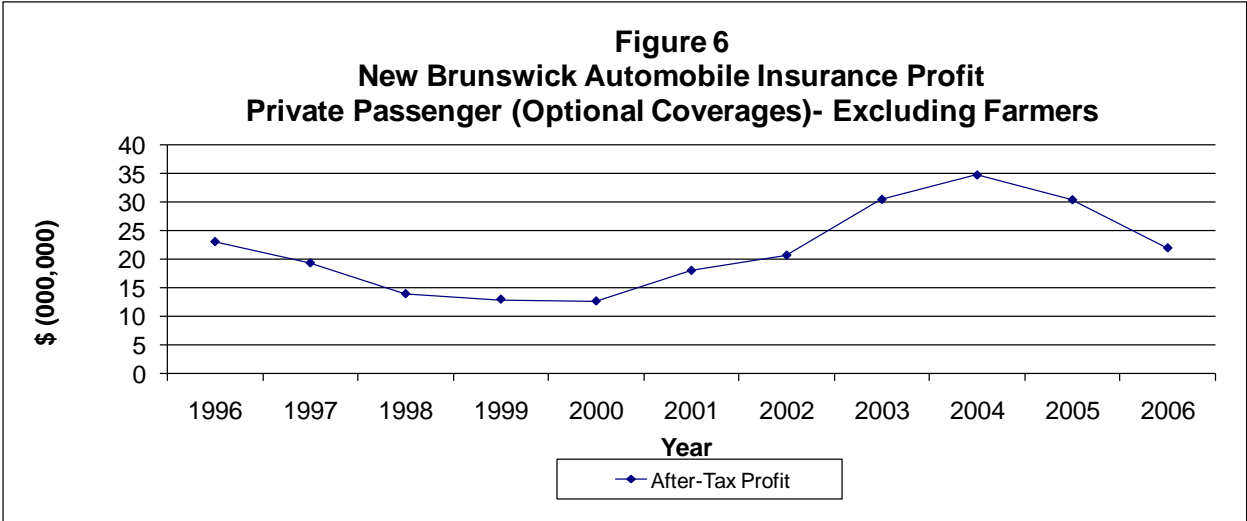
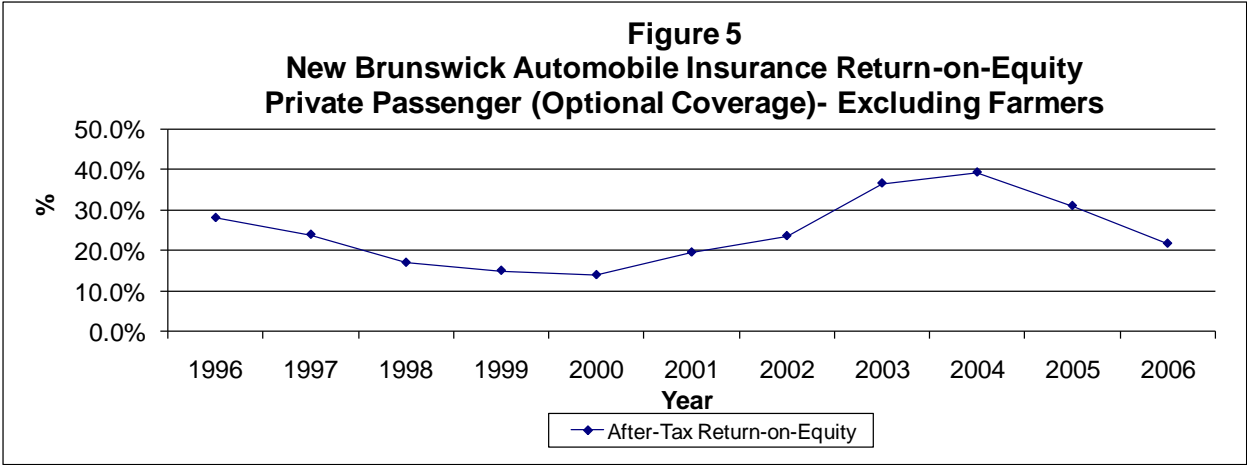


### 1.4- Optional Coverages

In New Brunswick, motorists are not required to purchase additional automobile insurance coverage beyond the mandatory \$200,000 in Third-Party-Liability coverage and the no-fault Accident Benefits insurance coverage. In section 1.3 we grouped all Third-Party-Liability and Accident Benefits together under the name Basic Coverages. In this section we consider the remaining coverages: collision, comprehensive, underinsured motorist, uninsured motorist, specified perils, and all perils. We group these coverages under the name Optional Coverages. It is seen in Table 3 and Figures 5 and 6 that these coverages were consistently very profitable in the entire 1996 to 2006 time period, with annual after-tax ROE between 14 and 39.3 percent. Similar to Basic Coverages, Optional Coverages experienced an increase in profitability in 2003.

<b>Year</b>	<b>Total Profit (millions)</b> <b>After-Tax Profit</b>	<b>After-Tax Return-on-Equity</b>
1996	23	28.1%
1997	19	24.0%
1998	14	17.1%
1999	13	15.1%
2000	13	14.0%
2001	18	19.6%
2002	21	23.6%
2003	31	36.6%
2004	35	39.3%
2005	30	31.1%
2006	22	21.8%

From Appendix, Exhibit 3



## Section 2 - Claims Costs

### 2.1- Introduction

The purpose of this section is to summarize the data concerning changes in the costs of claims per motorist relative to the average premium per motorist. We provide more detailed data on claim frequency and severity, for a longer time period, in the Appendix, Exhibit 12.

### 2.2- Claims Costs Relative to Premiums

Tables 4, 5, and 6 investigate changes in claims costs per motorist relative to average premiums, for three categorizations of the various coverages: All Coverages, Basic Coverages, and Optional Coverages. What these tables indicate is that, since 2003, the gap between claims and premiums has increased.

Prior to the IR, the ratio of claims to premiums was approximately 80 percent for All Coverages (83 percent in 1996; 78 percent in 2002). The growth rate of premiums was close to the growth rate of claims from 1996 to 2002 (claims increased by 20.4 percent (\$125) while premiums increased by 28 percent (\$206).)

In 2003, however, the gap between premiums and claims increased. All Coverage premiums increased by \$152 while claims *decreased* by \$133—widening the gap between premiums and claims such that only 55 percent of premiums in 2003 went to paying claims.

The increase in profits in 2003 was driven by a sudden change in the ratio between claim costs and premiums. For the time period 1996 to 2000, every premium increase for All Coverages corresponds to an increase in claim costs; the four successive premium increases in 2001, 2002, 2003, and 2004, however, correspond to claim cost *decreases*. While claims costs were falling, premiums were rising.

Table 4 provides All Coverages claims cost and premium data.

<b>Table 4</b>				
<b>New Brunswick Automobile Insurance Private Passenger-Excluding Farmers All Coverages</b>				
<b>Year</b>	<b>Average Premium</b>	<b>Average Claim per Vehicle</b>	<b>Claim Costs Relative to Premiums</b>	
<b>1996</b>	\$ 737	\$ 614	83%	
<b>1997</b>	\$ 741	\$ 677	91%	
<b>1998</b>	\$ 735	\$ 751	102%	
<b>1999</b>	\$ 737	\$ 821	111%	
<b>2000</b>	\$ 746	\$ 841	113%	
<b>2001</b>	\$ 808	\$ 804	99%	
<b>2002</b>	\$ 943	\$ 739	78%	
<b>2003</b>	\$ 1,095	\$ 606	55%	
<b>2004</b>	\$ 1,120	\$ 477	43%	
<b>2005</b>	\$ 1,044	\$ 535	51%	
<b>2006</b>	\$ 951	\$ 534	56%	

Source: GISA/IBC AU90-B.1987-2006

Table 5 provides Basic Coverages claims cost and premium data. Basic Coverage premium increases in 2001, 2002, 2003, and 2004 correspond to claim cost decreases in each and every year—while claim costs were decreasing, premiums were increasing. By 2004, only 42 percent of premiums went to paying claims (including adjustment expenses, but not including administrative expenses).

<b>Table 5</b>				
<b>New Brunswick Automobile Insurance Private Passenger-Excluding Farmers Basic Coverages</b>				
<b>Year</b>	<b>Average Premium</b>	<b>Average Claim per Vehicle</b>	<b>Claim Costs Relative to Premiums</b>	
<b>1996</b>	\$ 469	\$ 463	99%	
<b>1997</b>	\$ 484	\$ 515	106%	
<b>1998</b>	\$ 482	\$ 576	119%	
<b>1999</b>	\$ 483	\$ 647	134%	
<b>2000</b>	\$ 487	\$ 645	132%	
<b>2001</b>	\$ 536	\$ 628	117%	
<b>2002</b>	\$ 642	\$ 569	89%	
<b>2003</b>	\$ 778	\$ 454	58%	
<b>2004</b>	\$ 800	\$ 338	42%	
<b>2005</b>	\$ 748	\$ 385	52%	
<b>2006</b>	\$ 683	\$ 373	55%	

Source: GISA/IBC AU90-B.1987-2006

Table 6 provides claims cost and premium data for Optional Coverages. Similar to both All Coverages and Basic Coverages, premiums for Optional Coverages increased every year

between 2000 and 2004 while average claim costs per vehicle decreased in every year. By 2004, only 46 percent of all premiums collected for Optional Coverages went to paying claims (including adjustment expenses, but not including administrative expenses).

<b>Table 6</b>					
<b>New Brunswick Automobile Insurance Private Passenger-Excluding Farmers Optional Coverages‡</b>					
<b>Year</b>	<b>Average Premium</b>		<b>Average Claim per Vehicle</b>		<b>Claim Costs Relative to Premiums</b>
<b>1996</b>	\$	359	\$	211	59%
<b>1997</b>	\$	339	\$	215	64%
<b>1998</b>	\$	326	\$	221	68%
<b>1999</b>	\$	320	\$	225	70%
<b>2000</b>	\$	316	\$	242	77%
<b>2001</b>	\$	339	\$	228	67%
<b>2002</b>	\$	372	\$	209	56%
<b>2003</b>	\$	383	\$	188	49%
<b>2004</b>	\$	386	\$	178	46%
<b>2005</b>	\$	355	\$	187	53%
<b>2006</b>	\$	311	\$	190	61%

Source: GISA/IBC AU90-B.1987-2006. ‡ The values in this table account for collision and comprehensive "Optional" coverages. These two coverages make up approximately eighty-percent of the entire "Optional" coverages; given that purchase of "Optional" coverages is optional, consumers purchase different baskets of "Optional" coverages and a common base does not exist without weighting.

## **Section 3- Rising Automobile Premiums**

### **3.1- Introduction**

The price of automobile insurance – the premium – is affected by five components. First there is the primary component, claims costs (including adjustment expenses). Second there is the cost of administration (broker's commissions, overhead, premium tax, etc.). Third, insurers earn income from the investment of equity and reserves (premium revenue that will eventually be used to pay claims). Fourth, insurers must pay taxes on their income. Finally, a reasonable rate of profit must be added to net costs.

The question we address in this section is whether the increases in premiums between 1996 and 2004 can be attributed to changes in claims costs, or whether they can be attributed, at least in part, to changes in the other components.

### **3.2- Average Claims per Vehicle**

In Tables 4 through 6, we showed that the cost of claims (All Coverages) was proportional to premiums until approximately 2002 and that subsequently, the ratio of claims to premiums dropped substantially so that by 2004 only 43 percent of premiums went to paying claims.

Claims for Basic Coverages decreased in every year from 1999 through until 2004.

Basic Coverages is composed of Third-Party-Liability and Accident Benefits. In turn, Third-Party-Liability (TPL) is composed of TPL-Property Damage and TPL-Bodily Injury, of which only the latter was affected by the IR. Thus, it is possible that even though claims costs for Basic Coverages were decreasing, one of the sub-coverages (either TPL-Property Damage or TPL-Bodily Injury) could have been increasing. To investigate this possibility, we report the data in Tables 7 and 8, and Figure 7.

Table 7 reports yearly percentage change in average claims costs. The Third-Party-Liability product is split between the Bodily Injury and Property Damage components. Data on Accident Benefits and Other Coverages is included for comparison.

<b>New Brunswick Private Passenger (Excluding Farmers) Automobile Average Claims Per Vehicle (per Coverage Type) &amp; Percentage Change</b>								
Year	Third-Party-Liability Claims				Accident Benefits	% Change	Other Coverages	% Change
	Bodily-Injury	% Change	Property-Damage	% Change				
1996	\$ 333		\$ 69		\$ 61		\$ 211	
1997	\$ 352	6%	\$ 73	6%	\$ 89	46%	\$ 215	2%
1998	\$ 403	14%	\$ 70	-4%	\$ 102	14%	\$ 221	3%
1999	\$ 444	10%	\$ 76	8%	\$ 127	25%	\$ 225	2%
2000	\$ 436	-2%	\$ 76	0%	\$ 134	5%	\$ 242	7%
2001	\$ 424	-3%	\$ 72	-5%	\$ 132	-1%	\$ 228	-6%
2002	\$ 382	-10%	\$ 67	-7%	\$ 121	-8%	\$ 209	-8%
2003	\$ 280	-27%	\$ 64	-4%	\$ 110	-9%	\$ 188	-10%
2004	\$ 189	-32%	\$ 61	-4%	\$ 87	-21%	\$ 178	-6%
2005	\$ 224	18%	\$ 63	2%	\$ 100	15%	\$ 187	5%
2006	\$ 212	-5%	\$ 72	15%	\$ 89	-11%	\$ 190	2%

Source: GISA/IBC AU90-B.1987-2006. Includes allocated-loss-adjustment-expenses and unallocated-loss-adjustment-expenses. "Other Coverages" in this table account for collision and comprehensive "Optional" coverages; these two coverages make up approximately eighty-percent of the entire "Optional" coverages; more is noted in Table 6.

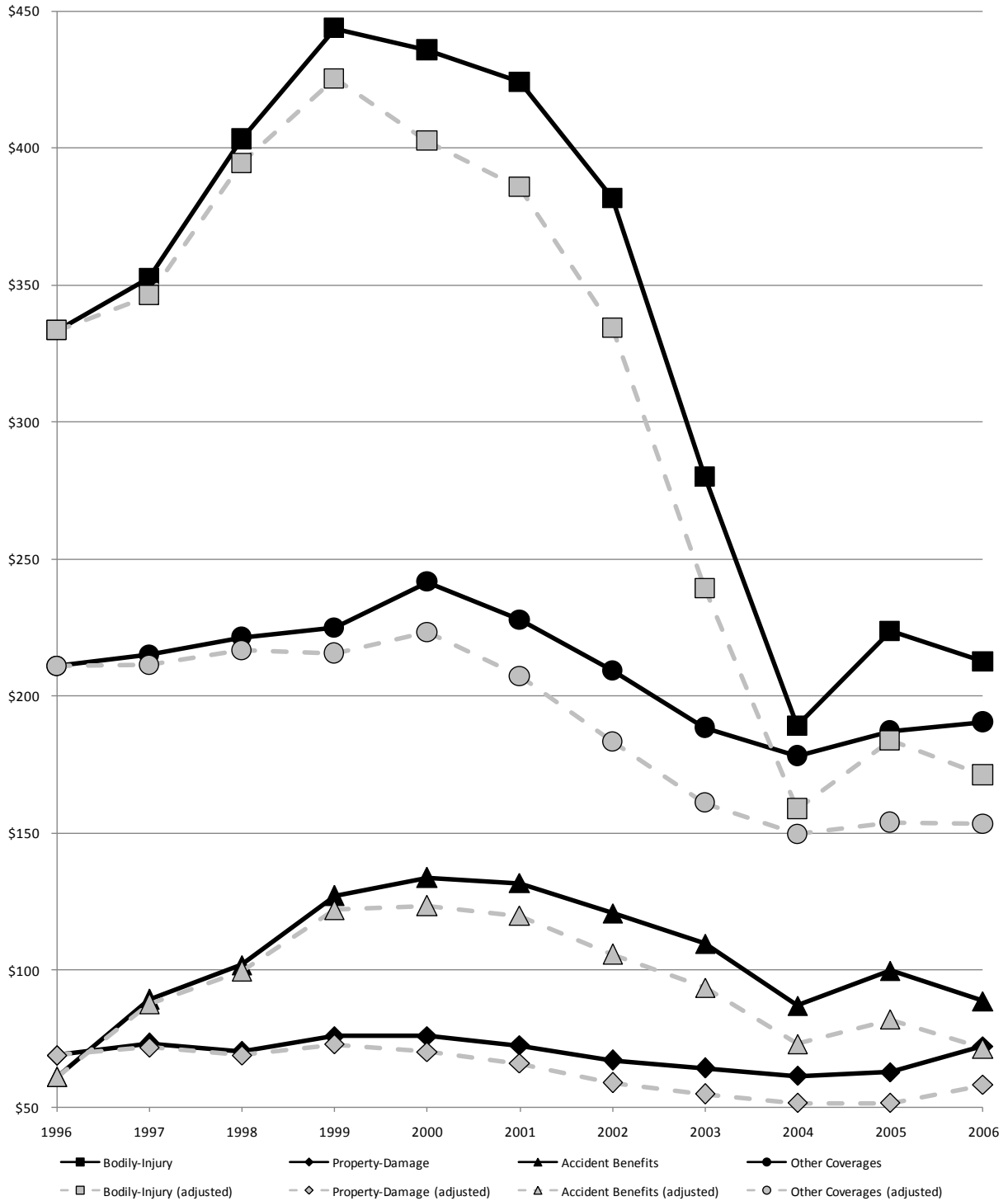
In Table 8 we adjust the data from Table 7 by the New Brunswick consumer price index (CPI). It should be noted that automobile insurance claims as a whole are not likely to track CPI as CPI is based on a basket of consumer goods whereas automobile insurance costs are related to the cost of repairing automobiles and indemnifying individuals for bodily injury-related damages. CPI-adjusted claims do provide, however, a benchmark for comparing and analyzing the change in claims.

<b>New Brunswick Private Passenger (Excluding Farmers) Automobile Average Claims Per Vehicle (per Coverage Type) &amp; Percentage Change Adjusted for New Brunswick's Consumer Price Index</b>								
Year	Third-Party-Liability Claims				Accident Benefits (adjusted)	% Change	Other Coverages (adjusted)	% Change
	Bodily-Injury (adjusted)	% Change	Property-Damage (adjusted)	% Change				
1996	\$ 333		\$ 69		\$ 61		\$ 211	
1997	\$ 346	4%	\$ 72	4%	\$ 88	44%	\$ 211	0%
1998	\$ 394	14%	\$ 69	-4%	\$ 100	14%	\$ 216	3%
1999	\$ 425	8%	\$ 73	6%	\$ 122	22%	\$ 216	0%
2000	\$ 402	-5%	\$ 70	-4%	\$ 123	1%	\$ 223	4%
2001	\$ 386	-4%	\$ 66	-6%	\$ 120	-3%	\$ 207	-7%
2002	\$ 334	-13%	\$ 59	-11%	\$ 106	-12%	\$ 183	-12%
2003	\$ 239	-28%	\$ 55	-7%	\$ 94	-11%	\$ 161	-12%
2004	\$ 159	-34%	\$ 51	-6%	\$ 73	-22%	\$ 149	-7%
2005	\$ 184	16%	\$ 51	0%	\$ 82	12%	\$ 154	3%
2006	\$ 171	-7%	\$ 58	13%	\$ 71	-13%	\$ 153	0%

Source: GISA/IBC AU90-B.1987-2006 & CANSIM. Includes allocated-loss-adjustment-expenses and unallocated-loss-adjustment-expenses. "Other Coverages" in this table account for collision and comprehensive "Optional" coverages; these two coverages make up approximately eighty-percent of the entire "Optional" coverages; more is noted in Table 6.

The data from Tables 7 and 8 are reproduced in Figure 7 below.

**Figure 7**  
**New Brunswick Private Passenger (Excluding Farmers) Automobile**  
**Insurance Average Claims Per Vehicle (adjusted and unadjusted by New**  
**Brunswick Consumer Price Index)**





In Tables 7 and 8, and Figure 7, it is seen that no coverage had increasing claims costs immediately prior to the implementation of the IR. Although TPL-Bodily Injury claims increased until 1999, they *decreased* from 1999 to the implementation of the IR in 2003. Likewise, Accident Benefits claims costs increased until 2000 but decreased from then through the implementation of the IR. By the time the IR was implemented, TPL-Bodily Injury costs were in their fourth year of decline.

Given that claims for Basic Coverages were decreasing, we are led to ask, therefore, whether some other element of the cost of insurance can explain the sudden increase in premiums that was observed in 2002 and 2003. In sections 3.3, 3.4, 3.5, and 3.6 we analyze administrative expenses, investment income, return on equity, and income taxes.

### **3.3- Average Administrative Expenses**

We do not have data on administrative expenses for New Brunswick automobile insurance.<sup>5</sup> Although we have used an expense ratio of 26.2 percent in our Appendix, Exhibits 1 through 3, this is only an estimate of administrative expenses and is taken from a report prepared by KPMG LLP for the government of New Brunswick entitled, “Impact of Proposed Tort Reform on Private Passenger Automobile Rates in New Brunswick,” dated July 28, 2003.

Administrative expenses include acquisition expenses (e.g. brokerage commission), premium taxes and regulatory fees to government, and general expenditures (overhead). Without data, we do not know whether administrative expenses have been constant, increasing, or decreasing.

Economica Ltd.’s Alberta report entitled, “Alberta’s Minor Injury Regulation: Automobile Insurance Profits, Premium Rates, and Costs,” includes expense ratio data which exhibits a slight downward trend in expense ratios (from 25.7 percent in 1999 to 23.0 percent in 2006). Assuming similarity in business practices, this may suggest, but not necessarily, that expense ratios have been decreasing in New Brunswick.

For further reference, we have included Exhibit 13, a regression analysis (Canada-wide, not New Brunswick specific), which suggests that expense ratios were not unstable in the time leading up to the legislation.

### **3.4- Investment Income Earned on Equity and Reserves**

Table 9 shows that the investment returns insurers earned on their equity and reserves declined over the period 1996 to 2001. Nevertheless, this decrease placed only limited upward pressure on premium rates.

Specifically, we estimate that to compensate for the decrease in return on investment (ROI) from 8.8 percent in 2000 to 6.2 percent in 2003, insurers would have needed a \$53 increase in the

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<sup>5</sup> Although Economica Ltd.’s report for Alberta included data whose primary source was the Insurance Bureau of Canada Expense Survey, this survey is no longer available to members of the public and is only available to insurance companies who participate in the expense survey.

2003 premiums on Basic Coverage.<sup>6</sup> Instead, premiums for Basic Coverages increased by \$291, from \$487 to \$778 (Table 5). This confirms that decreasing ROI was not the main impetus for the premium increases in 2002 and 2003.

Table 9		
New Brunswick P&C Insurance Companies		
Basic Coverages		
Year	Return-On-Investment Rate	Return-On-Investment (millions)
1996	10.0%	65
1997	10.5%	66
1998	8.5%	56
1999	7.4%	50
2000	8.8%	63
2001	7.6%	59
2002	5.5%	44
2003	6.2%	54
2004	5.5%	53
2005	5.8%	61
2006	5.9%	58

Source: OSFI P&C-1 & P&C-2; Appendix, Exhibit 1

In the Appendix, Exhibit 4, we examine the aggregate investment portfolio of Canadian property and casualty insurers over the time period 1996-2006 and find the composition of debt/equity to be fairly constant. The predominant investment holding is debt.

### 3.5- Reasonable Rate of Profit

The shareholders of an insurance company expect a reasonable rate of return on their investment. This rate of return must take the risk of the investment into consideration.

A considerable amount of research has been conducted to identify the rate of return on equity (ROE) that is required to adequately compensate shareholders of insurance companies. We report some of the findings here for both the automobile insurance business in particular and the (larger) property and casualty industry in general.

#### *Expert Opinions on Adequate Return-on-Equity for Property-Casualty Insurance*

Dr. Richard Phillips (Georgia State University, Department of Risk Management and Insurance) has analyzed property and casualty insurance companies in the U.S. to estimate the required rate of return in that industry. In a study prepared for the Alberta Automobile Insurance Rate Board (AIRB),<sup>7</sup> Dr. Phillips reported that if he was advising a U.S. property casualty insurer, with an

<sup>6</sup> This calculation assumes that the premium leverage ratio, reserve to equity ratio, underwriting income tax rate, average claim per vehicle, and investment income tax rate for 2003 would be the same as they were for 2000; and yields the same return on equity in both years.

<sup>7</sup> "Determining the Fair Rate of Return on Equity for Automobile Insurers" by Dr. Richard Phillips is dated October 18, 2006 and is available for download from Alberta Finance's website.

average portfolio of risk (relative to the overall industry), he would recommend 15.4 percent to be a fair rate of return.

The federal Office of the Superintendent of Financial Institution's report to the Secretary of State (International Financial Institutions), dated September 19, 2003, noted that the average ROE for Canadian property casualty insurers (which includes all lines and not just automobile insurance) over the past fifteen years was 8.1 percent.

### ***Expert Opinions on Adequate Return-on-Equity for Automobile Insurance***

Dr. Norma Nielson (University of Calgary, Haskayne School of Business) and Dr. Mary Kelly (Wilfred Laurier University, School of Business and Economics), in a presentation to the Alberta Automobile Insurance Rate Board (AIRB) October 20, 2006, recommended a cost of equity target in the range of 14.31 to 18.26 percent for the automobile insurance industry.

NERA Consulting Economists, in a report for the Newfoundland & Labrador Board of Public Utilities, October 13, 2004, recommended that an after-tax cost of equity in the range of 11 to 14 percent would be appropriate for automobile insurance in Newfoundland & Labrador. Based on NERA's report, Dr. Ronald R. Miller of Exactor Insurance Services Inc. recommended to the Newfoundland & Labrador Board of Public Utilities that an appropriate conservative estimate for return on equity would be 12.5 percent.

On November 1, 2004, Dr. Basil A. Kalymon, on behalf of the consumer advocate, recommended to the Newfoundland & Labrador Board of Public Utilities that a target return on equity for the setting of automobile insurance rates should be 9 to 10 percent.

While providing testimony in *Morrow v. Zhang* (2008), actuary Joe S. Cheng, F.C.I.A. stated that a 12.5 percent return on equity was considered by many insurers to be in the low end of a reasonable range (p. 707, lines 39-41 of testimony) for automobile insurance. Further in his testimony, Mr. Cheng suggested that the high end of a reasonable range for return on equity might be 20 percent (p. 731, lines 11-12 of testimony).

The Alberta Automobile Insurance Rate Board (AIRB) currently considers a 7 percent premium loading to be adequate for the provision of profit; this suggests that the AIRB considers, approximately, an 11.8 percent after-tax ROE to be adequate.<sup>8</sup> The consumer representative to the Alberta AIRB, Ms. Merle Taylor, CMA, recommended in a November 9, 2006 document to the AIRB that the return on equity be higher than the risk free rate and higher than the allowable rate for utilities (at that time, 8.9 percent). She also stated that a 19.6 percent return-on-equity could be considered excessive. She did not recommend an exact number or range.

The New Brunswick Insurance Board has instructed automobile insurers, in their rate filings, to use a 12 percent ROE target.<sup>9</sup>

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<sup>8</sup> Using a 2 to 1 premium to equity ratio assumption and an income tax rate (overall) assumption of 33.62 percent, and also assuming a 4 percent return-on-investment rate.

<sup>9</sup> The New Brunswick Insurance Board (NBIB) requested both ING Insurance Company of Canada (in a November 9, 2006 and December 17, 2007 NBIB Decision) and Co-operators General Insurance Company (in a November 9, 2006 NBIB Decision) to use a 12 percent target ROE.

In Ontario, the Financial Services Commission of Ontario (FSCO) considers a 12 percent after-tax ROE to be adequate. This was established in the 1996 *Technical Notes for Automobile Insurance Rate and Risk Classification Filings* and re-affirmed in the 2003 and 2006 *Technical Notes*.

Excluding the report by the AIRB consumer representative, which did not give an exact range or recommendation, the average of the eight opinions on a reasonable return-on-equity for automobile insurance is 12.85 percent.<sup>10</sup>

### **3.6- Income Taxes**

From 1999 onwards, income taxes on underwriting income and investment income have decreased. For more information, see the Appendix, Exhibit 1, Columns 18 and 19. Given that income tax rates decreased while premiums increased, we conclude that income taxes did not cause premiums to increase.

### **3.7- The Reason for Premium Increases**

Consumers generally desire *reasonably affordable*<sup>11</sup> insurance premiums. In the absence of regulatory premium controls or regulatory cost controls, premium rates and administrative costs are the variables that insurers have greatest control over. Insurers have limited control over claims payouts and adjustment expenses. Although they can also alter their capital structure, product mix, service level, distribution structure, and other variables, it is premium rates and administrative costs that are generally the easiest to change.

As indicated in the preceding sections, claims did not dramatically increase in the time period immediately prior to the IR. Although we do not have data on administrative expenses for New Brunswick, based on the experience in Alberta and nation-wide, we do not expect administrative expenses to have materially increased.

Although investment returns decreased in the time leading up to the implementation of the IR, its effect on the increase in premiums was minor.

Averaging only 0.4 percent annual after-tax ROE for All Coverages between 1996 and 2002, New Brunswick automobile insurance was below the target considered by experts and the NBIB to be reasonable.

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<sup>10</sup> For calculation, the average of the proposed ranges (for those experts who proposed ranges) was used. For example, Nielson and Kelly recommended a range of 14.31 to 18.26 percent, the average of which is 16.285 percent. Also note that although Dr. Ronald Miller's recommendation was based on NERA's consulting work, weight has been given to Dr. Miller's opinion. The standard deviation of this sample of expert's opinions is 2.31 percent, implying that about 68 percent of recommendations are within the range of 10.54 to 15.17 percent.

<sup>11</sup> Since consumers differ in what they consider *reasonably affordable* premiums to be (even those with the exact same financial situation) and in what they desire for insurance coverage, and since the quality of the product is also an issue, *reasonably affordable* is a very relative term. When consumers are given flexibility to choose the coverage and expenditure that suits their preferences, more consumers will find insurance premiums to be *reasonably affordable*.

We estimate that without the premium increases in 2002 and 2003 (if premiums had stayed at 2001 levels), ROE on All Coverages would have been 12.9 percent in 2003, a rate considered reasonable by both experts and the NBIB.

## **Section 4- Removing the Injury Regulation: Premiums and ROE**

### **4.1- Introduction**

We have shown in this report that, by 2003, the automobile insurance industry in New Brunswick was earning an after-tax rate of return on equity that exceeded 30 percent. As the NBIB considers 12 percent to be a reasonable target, it does not appear that it was necessary to introduce government regulation (the IR) to reduce costs. Furthermore, we have shown that the costs of bodily injury claims *decreased* in the time period immediately prior to the implementation of the IR.

In this light, we ask what the impact would be of eliminating the IR. Specifically, we estimate what the effect of elimination would be: (a) on premiums, if after-tax ROE is held constant; and (b) on profits, if premiums are held constant.

### **4.2- The Effect on Premiums if the Injury Regulation is Removed**

The Department of Justice of the Province of New Brunswick commissioned KPMG LLP (KPMG) to research the potential cost savings of the IR. The KPMG Report is entitled, “Impact of Proposed Tort Reform on Private Passenger Automobile Rates in New Brunswick,” dated July 28, 2003. We have used methodology and estimates from the KPMG Report to estimate what the effect of removing the IR would be on premiums.

We estimate that if the IR was to be removed, premiums for All Coverages would need to increase, on average, by \$207.04/year if after-tax ROE, on All Coverages, was to remain at its 2006 level of 24.5 percent; (and by \$198.09/year if after-tax ROE, on Basic Coverages, was to remain at its 2006 level of 25.5 percent).<sup>12</sup> This assumes that the KPMG LLP report’s original estimates of the IR’s effect on claims costs are correct and were fully realized.

Also, if the IR was to be removed, and ROE held constant at, for example, 12 percent after-tax, premiums would need to increase, on average, by \$17 for Basic Coverages<sup>13</sup> (Appendix 9).

We note a number of caveats to these estimates. The primary one is that some injured accident victims may be waiting to file claims and, if the IR is removed, may do so, potentially increasing claims from prior years. In a competitive market, insurers cannot re-coup past losses from current premium increases.

Also, if claims are held off from filing because claimants are anticipating the removal of the IR, the frequency of claims from prior years may not be accurate. As such, the frequency from recent years may not be representative of what it will be in the future. This suggests that the required premium increase to maintain that level of profit could be higher than what we have calculated.

We also note that consumers will not generally bear the increase at the average level but will, rather, bear it in proportion to their risk profile. That is, higher-risk consumers will have a higher premium rate increase than lower-risk consumers.

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<sup>12</sup> The analysis is available in the Appendix, Exhibits 7 and 9.

<sup>13</sup> If the IR was to be removed, and ROE held at 12 percent, premiums would not have to be increased on All Coverages. See Section 4.3, *infra*.

Lastly, our analysis assumes that the demand for insurance is inelastic and that consumers will still buy the same quantity of insurance both in the aggregate (number of people buying insurance) and at the individual level (quantity/ level of coverage) after a premium increase.

### **4.3- The Effect on Insurer Profits if the IR is Removed and Premiums are Held Constant**

If premiums are held constant and the IR is removed, profits for New Brunswick automobile insurance would be positive.

In the Appendix, Exhibit 7, we estimate the increase in the average claims costs per vehicle and incorporate this additional cost into the data from the year 2006. We then use the Cheng Report methodology and ratios from that year to make an estimate of what insurer profitability would be if the IR is removed and premiums held constant.

Using this methodology, we estimate that after-tax ROE for Basic Coverages would be 10.7 percent if the IR was removed and premiums held constant (13.3 percent for All Coverages)—leaving the claims ratio at the 2006 rate plus an additional factor for the increase in claims. This assumes that the expense ratio, premium leverage ratio, reserve-to-equity ratio, yield rates, and tax rates are all on the same level as they were in 2006 (using the Cheng Report methodology). The analysis is available in the Appendix, Exhibits 7, 10, and 11.

## **Section 5- -Government Regulation**

### **5.1- Introduction**

New Brunswick All Coverages automobile insurance premiums rose by 16.7 percent in 2002 and 16.1 percent in 2003 (\$135 in 2002 and \$152 in 2003). These increases were not caused by changes in bodily injury claims.

### **5.2- Premium Instability and the Injury Regulation**

Average TPL-Bodily Injury claim costs (the coverage targeted by the IR) were not unstable prior to the implementation of the IR. Although TPL-Bodily Injury claim severity showed some variance between 1993 and 2003, average TPL-Bodily Injury claim costs per vehicle *decreased* from 1999 to the implementation of the IR in 2003.

Claim stability aside, there are other factors that can affect premiums. It is important to make a distinction between *premium levels* and *premium stability*. For the purposes of regulatory policy, consumers generally desire both low premium levels and low premium instability. Premium instability (an insurance cycle) can cause financial difficulties for consumers.

An automobile insurance cycle is characterized by “hard markets” and “soft markets.” A hard market is a period of sharply rising premiums while a soft market is one of stable or decreasing premiums. Premiums change due to insurer pricing of automobile insurance. Insurance company actions (expressed through reserving, underwriting, brokering, marketing, forecasting, financing, and other decisions) can cause premiums to change out of unison and out of proportion with changes in the cost of claims. These insurance company actions can perpetuate the insurance cycle.

The IR cannot be expected to control premium instability (although it may result in short term reductions in premiums). The side-effects of the IR include uncertainty and reduced compensation for injured accident victims. Also, insurers have earned above-target after-tax ROE of 31.4, 40.3, 30.7, and 24.5 percent per year in 2003, '04, '05, and '06 (All Coverages).

When government intervenes with changes such as the IR, it is possible for adverse insurer incentives— in addition to adverse effects for consumers— to be created. If there is an expectation that government will intervene with changes like the IR, industry does not necessarily need to be as disciplined in premium setting—industry might expect government to assist. Therefore, the intervention of government has the potential to *increase* the instability of the automobile insurance industry over the long term.

### **5.3- Regulating for Premium Stability**

It is straightforward that consumers desire *reasonably stable* premiums. Government intervention like the IR, however, has the potential to increase premium instability.

*Instability* in premiums can lead consumers to make constrained decisions since they cannot generally predict what their premiums will be in the future. An individual's budget will be unbalanced if premium rates suddenly increase and he is unable to foresee it. As a result of this



instability, the consumer may make a constrained decision such as the sale of his vehicle at a loss.<sup>14</sup>

Of course, if an individual makes poor financial decisions—it should generally be his responsibility to deal with the outcome. However, it is reasonable to assume that consumers cannot predict what their premiums will be in the future.

Premium instability is an insurable risk—that is, some consumers would be willing to pay an additional fee to ensure that their premium rates do not increase in the future. As such, this could be an opportunity for insurers. Regulators could encourage insurers to price and offer rate-renewal guarantee endorsements and/or offer multi-year insurance contracts.

Lastly, regulators could require insurers to give consumers a large period of notice prior to raising premium rates, perhaps, for example, 3 months.

These suggestions, the limiting of government intervention, the offering of rate renewal guarantees, and an increase in the notification period required for premium increases, would all help to mitigate the effect that premium instability has on consumers.

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<sup>14</sup> In economic terms, the decision on whether to own, insure, register and drive a vehicle (and mold a lifestyle around this choice) is essentially discrete—it is either made or it isn't. Given that the transaction costs to both acquiring and disposing of a vehicle are not insignificant, instability in premium rates can force consumers to incur transaction costs which they would not incur if given more premium stability (either at a rate level beyond their budget or within their budget).

## **Conclusion**

The purpose of this report has been to provide objective evidence concerning the impact of the New Brunswick *Injury Regulation* (IR) on the New Brunswick automobile insurance market.

Our primary findings are:

- Insurer profitability from private passenger New Brunswick Basic Coverages was below target from 1997 through 2002; but was above target from 2003 through 2006.
- If premium increases in 2002 and 2003 had not occurred, but rather, premiums stayed on-level with 2001, after-tax ROE on New Brunswick All Coverages automobile insurance would have been 12.9 percent.
- In the years immediately prior to the implementation of the IR, bodily injury claims costs were decreasing.
- If the IR was removed, average premiums for All Coverages would have to increase by \$207.40 in order for New Brunswick automobile insurance to continue to earn a 24.5 percent after-tax ROE.
- If the IR was removed and premiums were held constant, after-tax ROE for All Coverages would be 13.3 percent, considered reasonable by experts.

## References

Alberta Automobile Insurance Rate Board, Transcript of Annual Public Meetings, June 17, 2008, Telus Convention Centre, Calgary, Alberta:

[http://www.airb.gov.ab.ca/public\\_meetings/2008/transcript\\_2008\\_0617.pdf](http://www.airb.gov.ab.ca/public_meetings/2008/transcript_2008_0617.pdf)

McDermid, 2004, “Saving Lives on Alberta’s Roads, Report and Recommendations for a Traffic Collision Fatality and Injury Reduction Strategy,” commissioned by The Honourable Ed Stelmach, Minister of Transportation.

The Office of the Superintendent of Financial Institutions, July 2003, “Minimum Capital Test—Development Notes”

# **Appendix**

**To:**

**“New Brunswick’s Injury Regulation:  
Automobile Insurance Profits, Premiums, and Costs”**

**By:**

**Jason Strauss**

**&**

**Christopher Bruce**

**Economica Ltd.**

**Prepared July 31, 2008 for:  
The Canadian Bar Association**

**New Brunswick Automobile Insurance  
Calculation of Profit and Rate of Return-on-Equity (Pre and Post Tax)  
Private Passenger (Excluding Farmers) All Coverages**

Employs methodology in report prepared by Joe S. Cheng, F.C.I.A. for Parlee McLaws LLP- March 29, 2007  
Title of Joe S. Cheng Report: "REPORT ON THE REVIEW of Insurance Reform-Premium and Claim Analysis By Gordon Smith and Theresa K. Reichart of Deloitte & Touche LLP"

(1) Year	(2) Premium Earned \$(millions)	(3) Claims Ratio	(4) Expense Ratio	(5) Combined Ratio	(6) Underwriting Profit (+)/ Loss (-)		(8) Premium Leverage	(9) Allocated Capital/Equity \$(millions)	(10) Reserves as % of Equity	(11) OSFI Yield Rates			(13) Investment Income \$(millions)			(16) Total Profit Pre-Tax		(18) Tax Rate		(20) Total Profit Post-Tax		(22) Year
					%	\$(millions)				Capital	Operations	Equity	Operations	Total	\$(millions)	ROE	Underwriting	Investment	\$(millions)	ROE		
																					Capital	
1996	263	83.4%	26.2%	109.6%	-9.6%	(25)	1.16	226	1.86	10.0%	10.0%	23	42	65	39	17.4%	46.12%	39%	25	11.3%	1996	
1997	265	91.3%	26.2%	117.5%	-17.5%	(46)	1.16	228	1.75	10.5%	10.5%	24	42	66	19	8.6%	46.12%	39%	15	6.7%	1997	
1998	265	102.1%	26.2%	128.3%	-28.3%	(75)	1.09	243	1.74	8.5%	8.5%	21	36	56	(19)	-8.0%	46.12%	40%	(7)	-2.8%	1998	
1999	263	111.4%	26.2%	137.6%	-37.6%	(99)	1.04	254	1.66	7.4%	7.4%	19	31	50	(49)	-19.6%	46.12%	40%	(23)	-9.4%	1999	
2000	278	112.8%	26.2%	139.0%	-39.0%	(109)	1.05	264	1.68	8.8%	8.8%	23	39	63	(46)	-17.7%	46.12%	37%	(19)	-7.4%	2000	
2001	311	99.5%	26.2%	125.7%	-25.7%	(80)	1.15	272	1.82	7.6%	7.6%	21	38	59	(21)	-7.9%	44.12%	36%	(7)	-2.7%	2001	
2002	363	78.4%	26.2%	104.6%	-4.6%	(17)	1.39	261	2.04	5.5%	5.5%	14	29	44	27	10.2%	41.37%	36%	18	6.8%	2002	
2003	412	55.4%	26.2%	81.6%	18.4%	76	1.43	288	2.02	6.2%	6.2%	18	36	54	130	47.3%	37.12%	29%	86	31.4%	2003	
2004	427	42.5%	26.2%	68.7%	31.3%	134	1.31	327	1.92	5.5%	5.5%	18	35	53	187	60.7%	36.12%	28%	124	40.3%	2004	
2005	411	51.3%	26.2%	77.5%	22.5%	93	1.14	360	1.90	5.8%	5.8%	21	40	61	153	44.6%	35.12%	25%	106	30.7%	2005	
2006	380	56.1%	26.2%	82.3%	17.7%	67	1.08	353	1.79	5.9%	5.9%	21	37	58	126	35.2%	35.12%	25%	87	24.5%	2006	

Brief Description of Each Column including Data Source	
Col. No.	Description
(1)	Year in which accidents occurred and to which premiums were charged.
(2)	Premiums charged for specific Year for "All Coverages" for Private Passenger New Brunswick automobile insurance excluding farmers.
(3)	Claims expressed as % of premiums in column (2).
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2). (26.2% = 12.4% for acquisition expenses + 3.0% for taxes, license and fees + 10.8% for general expenses.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.
(6)	Equals premiums less claims and expenses as % of premiums.
(7)	Equals premiums less claims and expenses.
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to New Brunswick "All Coverages" automobile insurance.
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" New Brunswick automobile insurance risk.
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.
(12)	See note for column (11).
(13)	Columns (13), (14) and (15) present the investment income earned on equity (13), reserves (14), and total (equity and reserves) (15), respectively.
(14)	See note for column (13).
(15)	See note for column (13).
(16)	Sum of pre-tax underwriting profit (loss), column (7), and investment income, column (15).
(17)	Pre-tax ROE (return on equity) is the amount of pre-tax profit as a % of equity (the average of current and prior year equity).
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.
(19)	See note for column (18).
(20)	Same as column (16) except after tax.
(21)	Same as column (17) except after tax.
(22)	Same as column (1).

**Notes**

Some of the national numbers are slightly different than those in the Cheng Report because of the use of updated data. Insurance data is updated as more information becomes available (as results become more certain).

The numbers in this table are for "all coverages" which includes third-party liability, accident benefits, collision, comprehensive, underinsured motorists, uninsured motorist, specified perils, all perils

Column (19) presents effective tax rates on investment income which are slightly different than those arrived at in the Cheng Report even though the methodology in the Cheng Report was copied. -See notes in Exhibit 5 for a thorough explanation.

**New Brunswick Automobile Insurance  
Calculation of Profit and Rate of Return-on-Equity (Pre and Post Tax)  
Private Passenger (Excluding Farmers) Basic Coverages Only (Third-Party-Liability & Accident Benefits)**

Employs methodology in report prepared by Joe S. Cheng, F.C.I.A. for Parlee McLaws LLP- March 29,2007  
Title of Joe S. Cheng Report: "REPORT ON THE REVIEW OF Insurance Reform-Premium and Claim Analysis By Gordon Smith and Theresa K. Reichart of Deloitte & Touche LLP"

(1) Year	(2) Premium Earned \$(millions)	(3) Claims Ratio	(4) Expense Ratio	(5) Combined Ratio	(6) Underwriting Profit (+)/ Loss (-)		(8) Premium Leverage	(9) Allocated Capital/Equity \$(millions)	(10) Reserves as % of Equity	(11) OSFI Yield Rates		(13) Investment Income \$(millions)			(16) Total Profit Pre-Tax		(18) Tax Rate		(20) Total Profit Post-Tax		(22) Year
					%	\$(millions)				Capital	Operations	Equity	Operations	Total	\$(millions)	ROE	Underwriting	Investment	\$(millions)	ROE	
1996	167	98.7%	26.2%	124.9%	-24.9%	(42)	1.16	144	1.86	10.0%	10.0%	14	27	41	(1)	-0.4%	46.12%	39%	2	1.7%	1996
1997	173	106.4%	26.2%	132.6%	-32.6%	(56)	1.16	149	1.75	10.5%	10.5%	16	27	43	(13)	-9.1%	46.12%	39%	(4)	-2.6%	1997
1998	174	119.3%	26.2%	145.5%	-45.5%	(79)	1.09	159	1.74	8.5%	8.5%	13	23	37	(42)	-27.5%	46.12%	40%	(21)	-13.3%	1998
1999	172	134.0%	26.2%	160.2%	-60.2%	(104)	1.04	166	1.66	7.4%	7.4%	12	21	33	(71)	-43.5%	46.12%	40%	(36)	-22.2%	1999
2000	182	132.5%	26.2%	158.7%	-58.7%	(107)	1.05	172	1.68	8.8%	8.8%	15	26	41	(66)	-38.7%	46.12%	37%	(32)	-18.8%	2000
2001	206	117.2%	26.2%	143.4%	-43.4%	(89)	1.15	180	1.82	7.6%	7.6%	14	25	39	(51)	-28.7%	44.12%	36%	(25)	-14.3%	2001
2002	248	88.6%	26.2%	114.8%	-14.8%	(37)	1.39	178	2.04	5.5%	5.5%	10	20	30	(7)	-3.8%	41.37%	36%	(2)	-1.3%	2002
2003	292	58.4%	26.2%	84.6%	15.4%	45	1.43	204	2.02	6.2%	6.2%	13	26	38	83	43.7%	37.12%	29%	56	29.2%	2003
2004	305	42.2%	26.2%	68.4%	31.6%	96	1.31	233	1.92	5.5%	5.5%	13	26	38	134	61.3%	36.12%	28%	89	40.6%	2004
2005	295	51.5%	26.2%	77.7%	22.3%	66	1.14	258	1.90	5.8%	5.8%	15	28	43	109	44.4%	35.12%	25%	75	30.6%	2005
2006	273	54.6%	26.2%	80.8%	19.2%	52	1.08	253	1.79	5.9%	5.9%	15	27	42	94	36.9%	35.12%	25%	65	25.5%	2006

Brief Description of Each Column including Data Source	
Col. No.	Description
(1)	Year in which accidents occurred and to which premiums were charged.
(2)	Premiums charged for specific Year for "Basic Coverages" (Third-Party-Liability & Accident Benefits) for Private Passenger New Brunswick automobile insurance, excluding farmers.
(3)	Claims expressed as % of premiums in column (2).
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2). (26.2% = 12.4% for acquisition expenses + 3.0% for taxes, license and fees + 10.8% for general expenses.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.
(6)	Equals premiums less claims and expenses as % of premiums.
(7)	Equals premiums less claims and expenses.
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to New Brunswick "Basic Coverages" automobile insurance.
(9)	This uses column (8) to impute the equity employed by insurers to support the "Basic Coverages" New Brunswick automobile insurance risk.
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.
(12)	See note for column (11).
(13)	Columns (13) ,(14) and (15) present the investment income earned on equity (13), reserves (14), and total (equity and reserves) (15), respectively.
(14)	See note for column (13).
(15)	See note for column (13).
(16)	Sum of pre-tax underwriting profit (loss), column (7), and investment income, column (15).
(17)	Pre-tax ROE (return on equity) is the amount of pre-tax profit as a % of equity (the average of current and prior year equity).
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(19)	See note for column (18).
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**Notes**

Some of the national numbers are slightly different than those in the Cheng Report because of the use of updated data. Insurance data is updated as more information becomes available (as results become more certain).

The numbers in this table are for "basic coverages" which includes third-party-liability and accident benefits.

Column (19) presents effective tax rates on investment income which are slightly different than those arrived at in the Cheng Report even though the methodology in the Cheng Report was copied. -See notes in Exhibit 5 for a thorough explanation.

**New Brunswick Automobile Insurance  
Calculation of Profit and Rate of Return-on-Equity (Pre and Post Tax)  
Private Passenger (Excluding Farmers) Optional/ Additional Coverages Only (Collision, Comprehensive, other)**

Employs methodology in report prepared by Joe S. Cheng, F.C.I.A. for Parlee McLaws LLP- March 29,2007  
Title of Joe S. Cheng Report: "REPORT ON THE REVIEW of Insurance Reform-Premium and Claim Analysis By Gordon Smith and Theresa K. Reichart of Deloitte & Touche LLP"

(1) Year	(2) Premium Earned \$(millions)	(3) Claims Ratio	(4) Expense Ratio	(5) Combined Ratio	(6) Underwriting Profit (+) / Loss (-)		(8) Premium Leverage	(9) Allocated Capital/Equity \$(millions)	(10) Reserves as % of Equity	(11) OSFI Yield Rates		(13) Investment Income \$(millions)			(16) Total Profit Pre-Tax		(18) Tax Rate		(20) Total Profit Post-Tax		(22) Year
					(7) %	(7) \$(millions)				Capital	Operations	Equity	Operations	Total	ROE	Underwriting	Investment	ROE			
																			Equity	Equity	
1996	95	56.5%	26.2%	82.7%	17.3%	16	1.16	82	1.86	10.0%	10.0%	8	15	23	40	48.7%	46.12%	39%	23	28.1%	1996
1997	92	62.9%	26.2%	89.1%	10.9%	10	1.16	79	1.75	10.5%	10.5%	8	15	23	39	40.7%	46.12%	39%	19	24.0%	1997
1998	91	69.3%	26.2%	95.5%	4.5%	4	1.09	83	1.74	8.5%	8.5%	7	12	19	24	29.0%	46.12%	40%	14	17.1%	1998
1999	91	68.6%	26.2%	94.8%	5.2%	5	1.04	87	1.66	7.4%	7.4%	7	11	17	22	25.9%	46.12%	40%	13	15.1%	1999
2000	97	75.8%	26.2%	102.0%	-2.0%	(2)	1.05	92	1.68	8.8%	8.8%	8	14	22	20	22.1%	46.12%	37%	13	14.0%	2000
2001	105	64.6%	26.2%	90.8%	9.2%	10	1.15	92	1.82	7.6%	7.6%	7	13	20	29	32.0%	44.12%	36%	18	19.6%	2001
2002	116	56.5%	26.2%	82.7%	17.3%	20	1.39	83	2.04	5.5%	5.5%	5	9	14	34	38.9%	41.37%	36%	21	23.6%	2002
2003	119	48.0%	26.2%	74.2%	25.8%	31	1.43	83	2.02	6.2%	6.2%	5	10	16	46	55.7%	37.12%	29%	31	36.6%	2003
2004	122	43.4%	26.2%	69.6%	30.4%	37	1.31	94	1.92	5.5%	5.5%	5	10	15	52	59.3%	36.12%	28%	35	39.3%	2004
2005	117	50.7%	26.2%	76.9%	23.1%	27	1.14	102	1.90	5.8%	5.8%	6	11	17	44	45.1%	35.12%	25%	30	31.1%	2005
2006	107	59.9%	26.2%	86.1%	13.9%	15	1.08	99	1.79	5.9%	5.9%	6	11	16	31	31.1%	35.12%	25%	22	21.8%	2006

Brief Description of Each Column including Data Source	
Col. No.	Description
(1)	Year in which accidents occurred and to which premiums were charged.
(2)	Premiums (millions) charged for specific Year for "Optional Coverages" (Collision, Comprehensive, Underinsured Motorist, Uninsured Motorist, Specified Perils, All Perils) for Private Passenger New Brunswick automobile insurance, excluding farmers.
(3)	Total claims incurred (including both allocated and unallocated adjustment expenses) divided by total premiums earned.
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2). (26.2% = 12.4% for acquisition expenses + 3.0% for taxes, license and fees + 10.8% for general expenses.
(5)	The Combined Ratio is the sum of the claims ratio and the expense ratio.
(6)	Equals premiums less claims and expenses as % of premiums.
(7)	Equals premiums less claims and expenses.
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to New Brunswick "Optional Coverages."
(9)	This uses column (8) to impute the equity employed by insurers to support the "Optional Coverages" New Brunswick automobile insurance risk.
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.
(13)	Columns (13) ,(14) and (15) present the investment income earned on equity (13), reserves (14), and total (equity and reserves) (15), respectively.
(14)	See note for column (13).
(15)	See note for column (13).
(16)	Sum of pre-tax underwriting profit (loss), column (7), and investment income, column (15).
(17)	Pre-tax ROE (return on equity) is the amount of pre-tax profit as a % of equity (the average of current and prior year equity).
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.
(19)	See note for column (18).
(20)	Same as column (16) except after tax.
(21)	Same as column (17) except after tax.
(22)	Same as column (1).

**Notes**

Some of the national numbers are slightly different than those in the Cheng Report because of the use of updated data. Insurance data is updated as more information becomes available (as results become more certain). Note also that the Cheng Report did not estimate insurer profitability from Optional Coverages.  
Column (19) presents effective tax rates on investment income which are slightly different than those arrived at in the Cheng Report even though the methodology in the Cheng Report was copied. -See notes in Exhibit 5 for a thorough explanation.

## Canadian Property and Casualty Insurance Company Investment Portfolios

### Aggregation of P&C-1 (Canadian Insurers) Investment Portfolios, \$(thousands)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Bonds, Debentures, and Term Deposits	12,979,513	13,463,178	14,009,656	14,476,146	15,008,158	15,102,962	17,612,099	23,213,130	27,910,512	31,301,802	36,582,357
Preferred and Common Shares	4,413,809	5,427,315	5,817,127	5,908,801	6,261,652	6,533,320	6,353,372	6,443,567	6,960,589	7,500,527	9,132,212
Real Estate, Mortgage Loans, & All Other	792,353	679,967	784,118	1,306,365	1,206,340	864,028	958,466	1,103,664	1,388,667	1,167,473	1,331,295
<b>Total</b>	<b>18,185,675</b>	<b>19,570,460</b>	<b>20,610,901</b>	<b>21,691,312</b>	<b>22,476,150</b>	<b>22,500,310</b>	<b>24,923,937</b>	<b>30,760,361</b>	<b>36,259,768</b>	<b>39,969,802</b>	<b>47,045,864</b>

### Percentage Share of Investment Portfolio

Bonds, Debentures, and Term Deposits	71.4%	68.8%	68.0%	66.7%	66.8%	67.1%	70.7%	75.5%	77.0%	78.3%	77.8%
Preferred and Common Shares	24.3%	27.7%	28.2%	27.2%	27.9%	29.0%	25.5%	20.9%	19.2%	18.8%	19.4%
Real Estate, Mortgage Loans, & All Other	4.4%	3.5%	3.8%	6.0%	5.4%	3.8%	3.8%	3.6%	3.8%	2.9%	2.8%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Source:** OSFI P&C-1 Financial Data- Property and Casualty Insurance Companies. Does not include foreign property and casualty insurance companies.

**Notes:**

Equity was a larger portfolio component from 1996 to 2002 than it was from 2003 to 2006. This corresponds to the lower returns on investment in Table 11.  
The decrease in investment returns (Table 11 in report) corresponds to the decrease in North American financial markets which occurred in 2000, 2001, and 2002.



### Effective Tax Rate on Investment Income

Row No.	Industry P&C 1, \$'000	1996	1997	1998	1999	2000
<b>Underwriting Operations</b>						
Premiums Written						
(1)	Direct	12,167,972	12,536,727	12,831,829	12,949,562	13,924,432
(2)	Reinsurance Assumed	2,233,905	2,081,584	2,106,297	2,408,274	2,596,973
(3)	Reinsurance Ceded	3,173,867	3,074,042	3,159,885	3,601,769	3,777,861
(4)	<b>Net Premiums Written</b>	11,228,010	11,544,269	11,778,241	11,756,067	12,743,544
(5)	Decrease (Increase) in Unearned Premiums	(178,258)	(157,688)	(216,921)	(139,701)	(493,508)
(6)	<b>Net Premiums Earned</b>	11,049,752	11,386,580	11,561,320	11,616,366	12,250,036
(7)	Service Charges	41,210	43,977	46,326	48,318	50,891
(8)	Other	9,425	(4,393)	(7,284)	(8,122)	(5,799)
(9)	<b>Total Underwriting Revenue</b>	11,100,387	11,426,164	11,600,362	11,656,562	12,295,128
(10)	Net Claims and Adjustment Expenses	7,924,749	7,924,345	8,285,089	8,282,561	9,307,525
<b>Acquisition Expenses</b>						
(11)	Commissions	1,675,160	1,767,288	1,812,116	1,851,319	1,847,222
(12)	Taxes	390,667	395,373	404,620	409,362	448,702
(13)	Other	631,124	728,526	722,132	652,399	659,804
(14)	General Expenses	809,268	799,699	981,180	999,733	1,008,673
(15)	<b>Total Claims and Expenses</b>	11,430,968	11,615,231	12,205,137	12,195,374	13,271,926
(16)	Premium Deficiency Adjustments	(2,153)	(746)	(1,379)	479	(884)
(17)	<b>Underwriting Income (Loss)</b>	(328,427)	(188,320)	(603,396)	(539,291)	(975,914)
<b>Investment Operations</b>						
(18)	Income	1,278,737	1,244,849	1,238,297	1,273,020	1,345,407
(19)	<b>Realized Gains (Losses)</b>	618,091	896,010	522,672	331,731	749,357
(20)	<b>Expenses</b>	35,337	39,277	40,792	44,883	56,305
(21)	<b>Net Investment Income</b>	1,861,491	2,101,582	1,720,177	1,559,868	2,038,459
<b>Other Revenue and Expenses</b>						
(22)	Income (Loss) from Ancillary Operations net of Expenses	4,321	2,842	3,636	3,905	5,750
(23)	Share of Net Income (Loss) of Subsidiaries and Affiliates	15,030	13,281	1,818	8,539	14,504
(24)	Gains (Losses) from Fluctuations in Foreign Exchange Rates	149	8,863	14,415	(9,991)	8,937
(25)	Other	48,876	61,976	35,696	29,327	8,294
(26)	<b>Income (Loss) before Income Taxes and Extraordinary Items</b>	1,601,440	2,000,224	1,172,346	1,052,357	1,100,030
<b>Income Taxes</b>						
(27)	Current	639,953	725,346	265,530	449,964	376,416
(28)	Future	(54,721)	37,422	99,918	(98,278)	28,485
(29)	<b>Total Income Taxes</b>	585,232	762,768	365,448	351,686	404,901
(30)	Extraordinary Items net of Income Taxes	0	130	-	-	-
(31)	<b>Net Income (Loss) for the Year</b>	1,016,207	1,237,586	806,898	700,671	695,129
(32)	Underwriting Margin	-3.0%	-1.7%	-5.2%	-4.6%	-8%
(33)	Effective Tax Rate on Underwriting Income	46.1%	46.1%	46.1%	46.1%	46.1%
(34)	Adjustment Factor	0.915	0.915	0.915	0.915	0.915
(35)	Calculated Tax	610,397	764,404	431,175	393,395	327,088
(36)	Capital Tax	17,044	18,815	20,008	22,228	22,853
(37)	Difference	42,210	20,451	85,736	63,937	(54,960)
(38)	Tax on Investment Income	761,868	851,257	709,462	642,116	777,180
(39)	Tax Rate on Investment Income	39%	39%	40%	40%	37%
(40)	assumption:		capital gain inclusion rate:	1996-1999=	75%	
				2000=	65%	
				2001-2006=	50%	

Row No.	Brief Description of Rows
(1)-(31)	From OSFI website, P&C-1 (Canadian) aggregate income statement
(32)	=(17)/(6)
(33)	Canada Revenue Agency & New Brunswick Department of Finance
(34)	Adjustment Factor to make the sum of (37) (across years 1996-2006) close to zero. <b>-See note below.</b>
(35)	=(33) x [ (17) + (34) x (18) + (40) x (19) - (20) + (22) + (24) + (25) ]
(36)	For years 1996 through 2003 =0.225% x (Total Capital, Surplus and Reserves = equity (from Industry P&C 1 Liability Statement)-10,000). For 2004=0.200% x (Total Capital, Surplus and Reserves = equity (from Industry P&C 1 Liability Statement)-50,000). For 2005=0.175% x (Total Capital, Surplus and Reserves = equity (from Industry P&C 1 Liability Statement)-50,000). For 2006=0% x (Total Capital, Surplus and Reserves = equity (from Industry P&C 1 Liability Statement)-50,000).
(37)	=(35)+(36)-(29)
(38)	=(35)-(33) x (17)
(39)	=(38) / [ (26)-(17) ]
<b>Notes</b>	
For 2000, 2001, & 2002, it appears that the Cheng Report mistakenly used the 1998-1999 row (40) instead of the correct value. This has been corrected here.	
The adjustment factor approach (Row (34)) is copied from the Cheng Report. The adjustment factor improves the "fit" of the estimated tax rate. It is arrived at via an iterative process whereby it is chosen such that the sum of the differences (row (37), across all years) is close to zero.	

### Effective Tax Rate on Investment Income

Row. No.	Industry P&C 1, \$'000	2001	2002	2003	2004	2005	2006
<b>Underwriting Operations</b>							
Premiums Written							
(1)	Direct	15,485,238	19,218,040	21,899,319	22,874,209	22,907,732	24,324,924
(2)	Reinsurance Assumed	2,953,166	4,095,228	3,822,706	3,678,936	3,689,490	4,869,477
(3)	Reinsurance Ceded	4,851,395	6,291,825	6,616,395	5,335,402	5,376,788	6,421,122
(4)	<b>Net Premiums Written</b>	13,587,009	17,021,443	19,105,629	21,217,744	21,220,435	22,773,279
(5)	Decrease (Increase) in Unearned Premiums	(518,632)	(1,328,465)	(1,634,244)	(1,012,768)	(344,008)	(652,300)
(6)	<b>Net Premiums Earned</b>	13,068,377	15,692,978	17,471,385	20,204,975	20,876,427	22,120,978
(7)	Service Charges	59,284	70,326	89,899	108,757	110,426	104,225
(8)	Other	(8,370)	(301)	(2,452)	(2,126)	(2,699)	(3,865)
(9)	<b>Total Underwriting Revenue</b>	13,119,291	15,763,003	17,558,832	20,311,607	20,984,153	22,221,339
(10)	Net Claims and Adjustment Expenses	10,279,561	11,968,518	12,272,357	12,704,821	12,882,568	13,790,306
<b>Acquisition Expenses</b>							
(11)	Commissions	1,945,025	2,325,713	2,586,793	3,058,228	3,193,084	3,424,340
(12)	Taxes	478,425	542,928	641,284	710,145	727,820	768,039
(13)	Other	677,126	713,826	790,219	883,059	1,006,040	1,056,139
(14)	General Expenses	948,218	1,026,862	1,202,182	1,312,180	1,323,162	1,439,511
(15)	<b>Total Claims and Expenses</b>	14,328,355	16,577,847	17,492,835	18,668,432	19,132,674	20,478,336
(16)	Premium Deficiency Adjustments	480	1,222	(708)	(117)	-	-
(17)	<b>Underwriting Income (Loss)</b>	(1,209,544)	(816,066)	66,704	1,643,292	1,851,479	1,743,003
<b>Investment Operations</b>							
(18)	Income	1,348,661	1,303,463	1,405,823	1,559,662	1,708,134	1,943,275
(19)	<b>Realized Gains (Losses)</b>	406,261	(4,187)	422,834	405,688	784,649	959,922
(20)	<b>Expenses</b>	61,186	79,029	56,102	63,472	85,141	77,136
(21)	<b>Net Investment Income</b>	1,693,736	1,220,247	1,772,555	1,901,878	2,407,643	2,826,061
<b>Other Revenue and Expenses</b>							
(22)	Income (Loss) from Ancillary Operations net of Expenses	2,330	2,934	669	3,891	4,940	2,572
(23)	Share of Net Income (Loss) of Subsidiaries and Affiliates	(9,967)	33,564	77,384	152,111	240,978	205,794
(24)	Gains (Losses) from Fluctuations in Foreign Exchange Rates	4,050	(2,295)	(54,151)	(14,101)	(16,360)	(2,804)
(25)	Other	19,718	(109,998)	137	23,470	31,837	9,699
(26)	<b>Income (Loss) before Income Taxes and Extraordinary Items</b>	500,323	328,386	1,863,298	3,710,541	4,520,517	4,784,325
<b>Income Taxes</b>							
(27)	Current	93,921	103,393	584,825	1,271,858	1,374,509	1,530,521
(28)	Future	67,572	(32,136)	(7,258)	(109,899)	(21,174)	(2,985)
(29)	<b>Total Income Taxes</b>	161,493	71,257	577,567	1,161,959	1,353,335	1,527,536
(30)	Extraordinary Items net of Income Taxes	-	-	140	70	36	114
(31)	<b>Net Income (Loss) for the Year</b>	338,830	257,129	1,285,871	2,548,651	3,167,217	3,256,903
(32)	Underwriting Margin	-9.3%	-5.2%	0.4%	8.1%	8.9%	7.9%
(33)	Effective Tax Rate on Underwriting Income	44.1%	41.4%	37.1%	36.1%	35.1%	35.1%
(34)	Adjustment Factor	0.915	0.915	0.915	0.915	0.915	0.915
(35)	Calculated Tax	85,083	77,126	540,221	1,164,287	1,314,341	1,381,569
(36)	Capital Tax	23,447	24,212	27,252	29,212	29,024	-
(37)	Difference	(52,963)	30,082	(10,094)	31,540	(9,970)	(145,967)
(38)	Tax on Investment Income	618,733	414,733	515,460	570,730	664,101	769,427
(39)	Tax Rate on Investment Income	36%	36%	29%	28%	25%	25%
(40)	assumption:			capital gain inclusion rate: 1996-1999=	75%		
				2000=	65%		
				2001-2006=	50%		

Row No.	Brief Description of Rows
(1)-(31)	From OSFI website, P&C-1 (Canadian) aggregate income statement
(32)	=(17)/(6)
(33)	Canada Revenue Agency & New Brunswick Department of Finance
(34)	Adjustment Factor to make the sum of (37) (across years 1996-2006) close to zero. -See note below.
(35)	=(33) x [ (17) + (34) x (18) + (40) x (19) - (20) + (22) + (24) + (25) ]
(36)	For years 1996 through 2003 =0.225% x (Total Capital, Surplus and Reserves = equity (from Industry P&C 1 Liability Statement)-10,000). For 2004=0.200% x (Total Capital, Surplus and Reserves = equity (from Industry P&C 1 Liability Statement)-50,000). For 2005=0.175% x (Total Capital, Surplus and Reserves = equity (from Industry P&C 1 Liability Statement)-50,000). For 2006=0% x (Total Capital, Surplus and Reserves = equity (from Industry P&C 1 Liability Statement)-50,000).
(37)	=(35)+(36)-(29)
(38)	=(35)-(33) x (17)
(39)	=(38) / [ (26)-(17) ]
<b>Notes</b>	
For 2000, 2001, & 2002, it appears that the Cheng Report mistakenly used the 1998-1999 row (40) instead of the correct value. This has been corrected here.	
The adjustment factor approach (Row (34)) is copied from the Cheng report. The adjustment factor improves the "fit" of the estimated tax rate. It is arrived at via an iterative process whereby it is chosen such that the sum of the differences (row (37), across all years) is close to zero.	

OSFI (Office of the Superintendent of Financial Institutions) Data

P&C-1 & P&C-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Year	Ownership	Assets	Liabilities	Equity	Income	ROE	Unpaid Claims	UEPR	Reinsurance		Total Reserves	Reserves/Equity	Total Invmts	Inv Income	Yield Rate	NPW	Prem/Equity NPW	
									UEPR	Claims								
1996	Canadian	30,841,879	23,256,550	7,585,329	1,016,207	13.4%	14,573,423	6,451,966	1,021,632	3,167,596			18,185,675	1,861,491			11,228,010	
	Foreign	15,091,600	9,804,623	5,286,977	580,573	11.0%	6,762,562	2,246,243	385,736	1,551,553			9,307,901	888,558			4,346,111	
	<b>Total</b>	<b>45,933,479</b>	<b>33,061,173</b>	<b>12,872,306</b>	<b>1,596,780</b>	<b>12.4%</b>	<b>21,335,985</b>	<b>8,698,209</b>	<b>1,407,368</b>	<b>4,719,149</b>			<b>27,493,576</b>	<b>2,750,049</b>	<b>10.0%</b>		<b>15,574,121</b>	
1997	Canadian	32,545,278	24,173,219	8,372,059	1,237,586	15.5%	15,401,369	6,762,752	1,145,569	3,521,813			19,570,460	2,101,582			11,544,269	
	Foreign	15,908,652	10,101,079	5,807,573	498,798	9.0%	6,992,968	2,257,690	409,697	1,555,657			10,103,771	903,193			4,185,624	
	<b>Total</b>	<b>48,453,930</b>	<b>34,274,298</b>	<b>14,179,632</b>	<b>1,736,384</b>	<b>12.8%</b>	<b>22,394,337</b>	<b>9,020,442</b>	<b>1,555,266</b>	<b>5,077,470</b>			<b>29,674,231</b>	<b>3,004,775</b>	<b>10.5%</b>		<b>15,729,893</b>	
1998	Canadian	34,025,559	25,123,049	8,902,510	806,898	9.3%	15,959,530	7,047,499	1,199,483	3,635,246			20,610,901	1,720,177			11,778,241	
	Foreign	16,275,763	10,369,932	5,905,831	183,570	3.1%	7,251,303	2,270,934	426,251	1,505,990			10,419,574	852,794			4,076,501	
	<b>Total</b>	<b>50,301,322</b>	<b>35,492,981</b>	<b>14,808,341</b>	<b>990,468</b>	<b>6.8%</b>	<b>23,210,833</b>	<b>9,318,433</b>	<b>1,625,734</b>	<b>5,141,236</b>			<b>25,762,296</b>	<b>1,74</b>	<b>31,030,475</b>	<b>2,572,971</b>	<b>8.5%</b>	<b>15,854,742</b>
1999	Canadian	36,813,415	26,924,355	9,889,060	700,671	7.5%	16,983,934	7,509,190	1,384,202	4,191,416			21,691,312	1,559,868			11,756,067	
	Foreign	16,934,316	10,712,421	6,221,895	333,526	5.5%	7,470,459	2,335,909	472,448	1,447,857			11,053,033	814,699			4,275,764	
	<b>Total</b>	<b>53,747,731</b>	<b>37,636,776</b>	<b>16,110,955</b>	<b>1,034,197</b>	<b>6.7%</b>	<b>24,454,393</b>	<b>9,845,099</b>	<b>1,856,650</b>	<b>5,639,273</b>			<b>26,803,569</b>	<b>1,66</b>	<b>32,744,345</b>	<b>2,374,567</b>	<b>7.4%</b>	<b>16,031,831</b>
2000	Canadian	38,078,551	27,911,624	10,166,927	695,129	6.9%	17,543,157	8,105,959	1,439,442	4,284,998			22,476,150	2,038,459			12,743,544	
	Foreign	17,665,139	11,109,886	6,555,255	245,883	3.8%	7,737,375	2,422,407	463,102	1,458,970			11,545,892	914,884			4,533,758	
	<b>Total</b>	<b>55,743,690</b>	<b>39,021,510</b>	<b>16,722,182</b>	<b>941,012</b>	<b>5.7%</b>	<b>25,280,532</b>	<b>10,528,366</b>	<b>1,902,544</b>	<b>5,743,968</b>			<b>28,162,386</b>	<b>1,68</b>	<b>34,022,042</b>	<b>2,953,343</b>	<b>8.8%</b>	<b>17,277,302</b>
2001	Canadian	42,630,164	32,199,208	10,430,956	338,830	3.3%	19,886,704	9,536,937	2,117,040	5,933,686			22,500,310	1,693,736			13,587,009	
	Foreign	18,317,205	12,051,498	6,265,707	18,516	0.3%	8,551,861	2,338,561	442,742	1,417,424			11,739,339	912,252			5,550,253	
	<b>Total</b>	<b>60,947,369</b>	<b>44,250,706</b>	<b>16,696,663</b>	<b>357,346</b>	<b>2.1%</b>	<b>28,438,565</b>	<b>11,875,498</b>	<b>2,559,782</b>	<b>7,351,110</b>			<b>30,403,171</b>	<b>1,82</b>	<b>34,239,649</b>	<b>2,605,988</b>	<b>7.6%</b>	<b>19,137,262</b>
2002	Canadian	47,555,894	36,784,907	10,770,987	257,129	2.4%	22,144,902	11,298,544	2,455,115	6,604,627			24,923,937	1,220,247			17,021,443	
	Foreign	20,704,963	14,248,385	6,456,578	14,874	-0.2%	9,824,183	2,962,753	524,480	1,545,401			13,642,740	791,086			6,561,474	
	<b>Total</b>	<b>68,260,857</b>	<b>51,033,292</b>	<b>17,227,565</b>	<b>242,255</b>	<b>1.4%</b>	<b>31,969,085</b>	<b>14,261,297</b>	<b>2,979,595</b>	<b>8,150,028</b>			<b>35,100,759</b>	<b>2,04</b>	<b>38,566,677</b>	<b>2,011,333</b>	<b>5.5%</b>	<b>23,582,917</b>
2003	Canadian	53,541,743	41,419,766	12,121,976	1,285,871	11.2%	24,787,927	12,927,988	2,458,893	6,963,538			30,760,361	1,772,555			19,105,629	
	Foreign	23,028,581	15,469,310	7,559,270	912,973	13.0%	10,608,102	3,287,194	608,195	1,792,833			16,243,458	887,799			7,294,863	
	<b>Total</b>	<b>76,570,324</b>	<b>56,889,076</b>	<b>19,681,246</b>	<b>2,198,844</b>	<b>11.9%</b>	<b>35,396,029</b>	<b>16,215,182</b>	<b>3,067,088</b>	<b>8,756,371</b>			<b>39,787,752</b>	<b>2,02</b>	<b>47,003,819</b>	<b>2,660,354</b>	<b>6.2%</b>	<b>26,400,492</b>
2004	Canadian	61,094,101	46,438,183	14,655,918	2,548,651	19.0%	28,137,260	13,789,160	2,135,722	7,171,661			36,259,768	1,901,878			21,217,744	
	Foreign	24,845,342	16,171,024	8,674,319	1,535,399	18.9%	11,436,867	3,208,758	563,048	1,792,606			18,143,892	910,314			6,878,033	
	<b>Total</b>	<b>85,939,443</b>	<b>62,609,207</b>	<b>23,330,237</b>	<b>4,084,050</b>	<b>19.0%</b>	<b>39,574,127</b>	<b>16,997,918</b>	<b>2,698,770</b>	<b>8,964,267</b>			<b>44,909,008</b>	<b>1,92</b>	<b>54,403,660</b>	<b>2,812,192</b>	<b>5.5%</b>	<b>28,095,777</b>
2005	Canadian	65,833,916	49,198,677	16,635,239	3,167,217	20.2%	30,357,867	14,179,135	2,190,952	7,649,494			41,281,394	2,407,643			21,220,435	
	Foreign	27,764,970	18,680,099	9,084,870	875,820	9.9%	13,962,159	3,253,839	571,562	2,583,941			20,613,205	970,910			8,809,572	
	<b>Total</b>	<b>93,598,886</b>	<b>67,878,776</b>	<b>25,720,109</b>	<b>4,043,037</b>	<b>16.5%</b>	<b>44,320,026</b>	<b>17,432,974</b>	<b>2,762,514</b>	<b>10,233,435</b>			<b>48,757,051</b>	<b>1,90</b>	<b>61,894,599</b>	<b>3,378,553</b>	<b>5.8%</b>	<b>28,030,007</b>
2006	Canadian	72,987,354	54,086,176	18,901,179	3,256,903	18.3%	33,780,433	15,238,022	2,257,362	7,922,398			47,045,864	2,826,061			22,773,279	
	Foreign	29,900,382	19,345,986	10,554,396	2,277,176	23.2%	14,063,792	3,356,012	617,946	3,043,878			21,956,906	1,066,756			6,963,843	
	<b>Total</b>	<b>102,887,736</b>	<b>73,432,162</b>	<b>29,455,575</b>	<b>5,534,079</b>	<b>20.1%</b>	<b>47,844,225</b>	<b>18,594,034</b>	<b>2,875,308</b>	<b>10,966,276</b>			<b>52,596,675</b>	<b>1,79</b>	<b>69,002,770</b>	<b>3,892,817</b>	<b>5.9%</b>	<b>29,737,122</b>

Brief Description of Pertinent Columns

Col. No.	Description
(7)	ROE as stated here is for all OSFI-regulated P&C insurers and includes profitability and equity from/for all lines and all provinces.
(12)	=(8)+(9)-(10)-(11)
(13)	=[(8)+(9)-(10)-(11)]/(5)
(16)	=(15)/(14)
(18)	=(17)/[the average of: (5) from current year and (5) from previous year]

**Calculations for Projected Increase in Loss Cost from the Removal of the MPIR  
New Brunswick Private Passenger Automobile Insurance- Excluding Farmers**

	Year	Earned Exposure	Ultimate Losses including ALAE & Health Levy	Trend Factor	ULAE	Reform Factor if MPIR Kept	Reform Factor if MPIR Removed	Undiscounted Loss Cost per Vehicle if MPIR Kept	Undiscounted Loss Cost per Vehicle if MPIR Removed	Undiscounted Difference	Present Value Factor	Discounted Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
TPL- Bodily Injury:	2006	399,674	\$ 84,930,586	1.166	1.119	1.000	1.595	\$ 277.35	\$ 442.35	\$ 165.00	0.886	\$ 146.19
Uninsured Automobile:	2006	400,165	\$ 2,839,536	1.166	1.119	1.000	1.232	\$ 9.26	\$ 11.41	\$ 2.14	0.925	\$ 1.98
Underinsured Motorist:	2006	343,559	\$ 2,834,367	1.166	1.119	1.000	1.595	\$ 10.77	\$ 17.17	\$ 6.41	0.886	\$ 5.68

**Applicable to Basic Coverages:**

**(13) Discounted Additional Loss Cost From Removing MPIR: \$ 146.19**

**Applicable to All Coverages:**

**(14) Discounted Additional Loss Cost From Removing MPIR: \$ 153.06**

	Notes:	Source:
(1)	Data Year	
(2)	Number of Earned vehicles on the noted coverage	AU90-B.1987-2006
(3)	Ultimate Losses including ALAE and Health Levy	AU90-B.1987-2006
(4)	8% annual trend factor taken from KPMG Report.	KPMG Report entitled, "Impact of Proposed Tort Reform on Private Passenger Automobile Rates in New Brunswick," dated July 28, 2003
(5)	Unallocated Loss Adjustment Factor	AU10-D.2007, Actual Loss Ratio Exhibit
(6)	Reform Factor of 1 if MPIR is not removed	
(7)	$(1.595=1/0.627)$ , $(1.232=1/0.812)$ , inverse of initial reform factors	KPMG Report entitled, "Impact of Proposed Tort Reform on Private Passenger Automobile Rates in New Brunswick," dated July 28, 2003
(8)	$=\{ (3/ (2) ) \times (4) \times (5) \times (6)$	
(9)	$=\{ (3/ (2) ) \times (4) \times (5) \times (7)$	
(10)	$= (9) - (8)$	
(11)	Present Value Factor, takes discount rate and time-to-payout into account	KPMG Report entitled, "Impact of Proposed Tort Reform on Private Passenger Automobile Rates in New Brunswick," dated July 28, 2003
(12)	$= (10) \times (11)$	
(13)	equal to TPL-Bodily Injury amount from Column (12)	
(14)	$=\$146.19+ (\$1.98 \times 1) + \{ \$5.68 \times 0.861 \}$ , where 1 & 0.861 represent weightings for Uninsured Automobile & Underinsured Motorist Coverages.	Weightings taken from earned exposure data from AU10-D.2007

**New Brunswick Automobile Insurance  
Estimation of Required Premium Increase from Removal of Minor Personal Injury Regulation if ROE is Held Constant  
Private Passenger (Excluding Farmers) All Coverages**

Employs methodology in report prepared by Joe S. Cheng, F.C.I.A. for Parlee McLaws LLP- March 29, 2007  
Title of Joe S. Cheng Report: "REPORT ON THE REVIEW of Insurance Reform-Premium and Claim Analysis By Gordon Smith and Theresa K. Reichart of Deloitte & Touche LLP"

(1) Year	(2) Premium Earned \$(millions)	(3) Claims Ratio	(4) Expense Ratio	(5) Combined Ratio	(6) Underwriting Profit (+)/ Loss (-)		(8) Premium Leverage	(9) Allocated Capital/Equity \$(millions)	(10) Reserves as % of Equity	(11) OSFI Yield Rates		(13) Investment Income \$(millions)			(16) Total Profit Pre-Tax		(18) Tax Rate		(20) Total Profit Post-Tax		(22) Year
					(7) %	(7) \$(millions)				(11) Capital	(11) Operations	(13) Equity	(13) Operations	(13) Total	(16) \$(millions)	(16) ROE	(18) Underwriting	(18) Investment	(20) \$(millions)	(20) ROE	
2006	463	59.3%	26.2%	85.5%	14.5%	67	1.08	353	1.79	5.9%	5.9%	21	37	58	126	35.2%	35.12%	25%	87	24.5%	2006

**(23) Required Average Premium Increase if MPR is Removed and ROE Held Constant: \$ 207.40**

Brief Description of Each Column including Data Source	
Col. No.	Description
(1)	Year in which accidents occurred and to which premiums were charged.
(2)	Premiums charged for specific Year for "All Coverages" for Private Passenger New Brunswick automobile insurance excluding farmers.
(3)	Claims expressed as % of premiums in column (2). This column value is the same as that in Exhibit 1 because, in addition to the extra claim per vehicle added to the numerator, it also has an additional amount as noted on row (23) added to the denominator.
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2). (26.2% = 12.4% for acquisition expenses + 3.0% for taxes, license and fees + 10.8% for general expenses.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.
(6)	Equals premiums less claims and expenses as % of premiums.
(7)	Equals premiums less claims and expenses.
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to New Brunswick "All Coverages" automobile insurance.
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" New Brunswick automobile insurance risk. In this table, it is equal to the allocated capital from Exhibit 1.
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.
(12)	See note for column (11).
(13)	Columns (13), (14) and (15) present the investment income earned on equity (13), reserves (14), and total (equity and reserves) (15), respectively.
(14)	See note for column (13).
(15)	See note for column (13).
(16)	Sum of pre-tax underwriting profit (loss), column (7), and investment income, column (15).
(17)	Pre-tax ROE (return on equity) is the amount of pre-tax profit as a % of equity (the average of current and prior year equity).
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.
(19)	See note for column (18).
(20)	Same as column (16) except after tax.
(21)	Same as column (17) except after tax.
(22)	Same as column (1).
Row (23)	This row is arrived at by iteration and is the required average premium increase so that after-tax ROE remains equal to what it is in Exhibit 1.
<b>Notes</b>	
Some of the national numbers are slightly different than those in the Cheng Report because of the use of updated data. Insurance data is updated as more information becomes available (as results become more certain).	
The numbers in this table are for "all coverages" which includes third-party-liability, accident benefits, collision, comprehensive, underinsured motorist, uninsured motorist, specified perils, all perils	
Column (19) presents effective tax rates on investment income which are slightly different than those arrived at in the Cheng Report even though the methodology in the Cheng Report was copied. -See notes in Exhibit 5 for a thorough explanation.	

**New Brunswick Automobile Insurance  
Estimation of Required Premium Increase from Removal of Minor Personal Injury Regulation if ROE is Held Constant  
Private Passenger (Excluding Farmers) Basic Coverages Only (Third-Party-Liability & Accident Benefits)**

Employs methodology in report prepared by Joe S. Cheng, F.C.I.A. for Parlee McLaws LLP- March 29,2007  
Title of Joe S. Cheng Report: "REPORT ON THE REVIEW of Insurance Reform-Premium and Claim Analysis By Gordon Smith and Theresa K. Reichart of Deloitte & Touche LLP"

(1)	(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)	(11)		(12)	(13)	(14)		(15)	(16)	(17)	(18)		(19)	(20)	(21)	(22)
Year	Premium Earned \$(millions)	Claims Ratio	Expense Ratio	Combined Ratio	Underwriting Profit (+)/ Loss (-)		Premium Leverage	Allocated Capital/Equity \$(millions)	Reserves as % of Equity	OSFI Yield Rates	Investment Income \$(millions)		Total Profit Pre-Tax	Tax Rate	Total Profit Post-Tax		ROE	Underwriting	Investment	ROE	Year				
					%	\$(millions)				Capital	Operations	Equity	Operations	Total	\$(millions)	ROE				\$(millions)	ROE				
2006	352	58.9%	26.2%	85.1%	14.9%	52	1.08	253	1.75	5.9%	5.9%	15	27	42	94	36.9%	35.12%	25%	65	25.5%	2006				

**(23) Required Average Premium Increase if MPIR is Removed and ROE Held Constant: \$ 198.08**

Brief Description of Each Column including Data Source	
Col. No.	Description
(1)	Year in which accidents occurred and to which premiums were charged.
(2)	Premiums charged for specific Year for "Basic Coverages" (Third-Party-Liability & Accident Benefits) for Private Passenger New Brunswick automobile insurance, excluding farmers.
(3)	Claims expressed as % of premiums in column (2). This column value is the same as that in Exhibit 2 because, in addition to the extra claim per vehicle added to the numerator, it also has an additional amount as noted on row (23) added to the denominator.
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2). (26.2% = 12.4% for acquisition expenses + 3.0% for taxes, license and fees + 10.8% for general expenses.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.
(6)	Equals premiums less claims and expenses as % of premiums.
(7)	Equals premiums less claims and expenses.
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to New Brunswick "Basic Coverages" automobile insurance.
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" New Brunswick automobile insurance risk. In this table, it is equal to the allocated capital from Exhibit 2.
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.
(12)	See note for column (11).
(13)	Columns (13), (14) and (15) present the investment income earned on equity (13), reserves (14), and total (equity and reserves) (15), respectively.
(14)	See note for column (13).
(15)	See note for column (13).
(16)	Sum of pre-tax underwriting profit (loss), column (7), and investment income, column (15).
(17)	Pre-tax ROE (return on equity) is the amount of pre-tax profit as a % of equity (the average of current and prior year equity).
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.
(19)	See note for column (18).
(20)	Same as column (16) except after tax.
(21)	Same as column (17) except after tax.
(22)	Same as column (17).
Row (23)	This row is arrived at by iteration and is the required average premium increase so that after-tax ROE remains equal to what it is in Exhibit 2.
<b>Notes</b>	
Some of the national numbers are slightly different than those in the Cheng Report because of the use of updated data. Insurance data is updated as more information becomes available (as results become more certain).	
The numbers in this table are for "basic coverages" which includes third-party-liability and accident benefits.	
Column (19) presents effective tax rates on investment income which are slightly different than those arrived at in the Cheng Report even though the methodology in the Cheng Report was copied. -See notes in Exhibit 5 for a thorough explanation.	

**New Brunswick Automobile Insurance  
Estimation of Required Premium Increase from Removal of Minor Personal Injury Regulation if ROE is Held Constant  
Private Passenger (Excluding Farmers) Basic Coverages Only (Third-Party-Liability & Accident Benefits)**

Employs methodology in report prepared by Joe S. Cheng, F.C.I.A. for Parlee McLaws LLP- March 29,2007  
Title of Joe S. Cheng Report: "REPORT ON THE REVIEW of Insurance Reform-Premium and Claim Analysis By Gordon Smith and Theresa K. Reichart of Deloitte & Touche LLP"

(1)	(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)	(11)		(12)	(13)			(14)	(15)	(16)	(17)	(18)		(19)	(20)	(21)	(22)
Year	Premium Earned \$(millions)	Claims Ratio	Expense Ratio	Combined Ratio	Underwriting Profit (+)/ Loss (-)		Premium Leverage	Allocated Capital/Equity \$(millions)	Reserves as % of Equity	OSFI Yield Rates	Capital	Operations	Equity	Operations	Total	Investment Income \$(millions)	Total Profit Pre-Tax \$(millions)	ROE	Underwriting	Investment	Total Profit Post-Tax \$(millions)	ROE	Year			
2006	280	74.2%	26.2%	100.4%	-0.4%	(1)	1.08	253	1.75	5.9%		15	27	42	41	16.0%	35.12%	25%	31	12.0%		2006				

**(23) Required Average Premium Increase if MPIR is Removed and ROE Held Constant: \$ 17.00**

Brief Description of Each Column including Data Source	
Col. No.	Description
(1)	Year in which accidents occurred and to which premiums were charged.
(2)	Premiums charged for specific Year for "Basic Coverages" (Third-Party-Liability & Accident Benefits) for Private Passenger New Brunswick automobile insurance, excluding farmers.
(3)	Claims expressed as % of premiums in column (2). This column value is the same as that in Exhibit 2 because, in addition to the extra claim per vehicle added to the numerator, it also has an additional amount as noted on row (23) added to the denominator.
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2). (26.2% = 12.4% for acquisition expenses + 3.0% for taxes, license and fees + 10.8% for general expenses.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.
(6)	Equals premiums less claims and expenses as % of premiums.
(7)	Equals premiums less claims and expenses.
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to New Brunswick "Basic Coverages" automobile insurance.
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" New Brunswick automobile insurance risk. In this table, it is equal to the allocated capital from Exhibit 2.
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.
(12)	See note for column (11).
(13)	Columns (13), (14) and (15) present the investment income earned on equity (13), reserves (14), and total (equity and reserves) (15), respectively.
(14)	See note for column (13).
(15)	See note for column (13).
(16)	Sum of pre-tax underwriting profit (loss), column (7), and investment income, column (15).
(17)	Pre-tax ROE (return on equity) is the amount of pre-tax profit as a % of equity (the average of current and prior year equity).
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.
(19)	See note for column (18).
(20)	Same as column (16) except after tax.
(21)	Same as column (17) except after tax.
(22)	Same as column (17).
Row (23)	This row is arrived at by iteration and is the required average premium increase so that after-tax ROE remains equal to what it is in Exhibit 2.
<b>Notes</b>	
Some of the national numbers are slightly different than those in the Cheng Report because of the use of updated data. Insurance data is updated as more information becomes available (as results become more certain).	
The numbers in this table are for "basic coverages" which includes third-party-liability and accident benefits.	
Column (19) presents effective tax rates on investment income which are slightly different than those arrived at in the Cheng Report even though the methodology in the Cheng Report was copied. -See notes in Exhibit 5 for a thorough explanation.	

**New Brunswick Automobile Insurance  
Estimation of Profit and Rate of Return-on-Equity (Pre and Post Tax) from Removal of Minor Personal Injury Regulation if Premiums Held Constant  
Private Passengers (Excluding Farmers) All Coverages**

Employs methodology in report prepared by Joe S. Cheng, F.C.I.A. for Parlee McLaws LLP- March 29,2007  
Title of Joe S. Cheng Report: "REPORT ON THE REVIEW of Insurance Reform-Premium and Claim Analysis By Gordon Smith and Theresa K. Reichart of Deloitte & Touche LLP"

(1) Year	(2) Premium Earned \$(millions)	(3) Claims Ratio	(4) Expense Ratio	(5) Combined Ratio	(6) Underwriting Profit (+)/ Loss (-)		(8) Premium Leverage	(9) Allocated Capital/Equity \$(millions)	(10) Reserves as % of Equity	(11) OSFI Yield Rates		(13) Investment Income \$(millions)			(16) Total Profit Pre-Tax		(18) Tax Rate		(20) Total Profit Post-Tax		(22) Year
					(7) %	(7) \$(millions)				(12) Capital	(12) Operations	(13) Equity	(13) Operations	(13) Total	(16) \$(millions)	(16) ROE	(18) Underwriting	(18) Investment	(20) \$(millions)	(20) ROE	
2006	380	72.2%	26.2%	98.4%	1.6%	6	1.08	353	1.79	5.9%	5.9%	27	37	58	64	18.1%	35.72%	25%	48	13.3%	2006

Brief Description of Each Column including Data Source	
Col. No.	Description
(1)	Year in which accidents occurred and to which premiums were charged.
(2)	Premiums charged for specific Year for "All Coverages" for Private Passenger New Brunswick automobile insurance excluding farmers.
(3)	Claims expressed as % of premiums in column (2). This column value differs from that in Exhibit 1 because it includes an additional amount in the numerator (from Exhibit 7).
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2). (26.2% = 12.4% for acquisition expenses + 3.0% for taxes, license and fees + 10.8% for general expenses.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.
(6)	Equals premiums less claims and expenses as % of premiums.
(7)	Equals premiums less claims and expenses.
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to New Brunswick "All Coverages" automobile insurance.
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" New Brunswick automobile insurance risk.
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.
(12)	See note for column (11).
(13)	Columns (13) ,(14) and (15) present the investment income earned on equity (13), reserves (14), and total (equity and reserves) (15), respectively.
(14)	See note for column (13).
(15)	See note for column (13).
(16)	Sum of pre-tax underwriting profit (loss), column (7), and investment income, column (15).
(17)	Pre-tax ROE (return on equity) is the amount of pre-tax profit as a % of equity (the average of current and prior year equity).
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.
(19)	See note for column (18).
(20)	Same as column (16) except after tax.
(21)	Same as column (17) except after tax.
(22)	Same as column (1).

**Notes**

Some of the national numbers are slightly different than those in the Cheng Report because of the use of updated data. Insurance data is updated as more information becomes available (as results become more certain).  
The numbers in this table are for "all coverages" which includes third-party-liability, accident benefits, collision, comprehensive, underinsured motorist, uninsured motorist, specified perils, all perils  
Column (19) presents effective tax rates on investment income which are slightly different than those arrived at in the Cheng Report even though the methodology in the Cheng Report was copied. -See notes in Exhibit 5 for a thorough explanation.



**New Brunswick Automobile Insurance  
Estimation of Profit and Rate of Return-on-Equity (Pre and Post Tax) on Removal of Minor Personal Injury Regulation if Premiums Held Constant  
Private Passenger (Excluding Farmers) Basic Coverages Only (Third-Party-Liability & Accident Benefits)**

Employs methodology in report prepared by Joe S. Cheng, F.C.I.A. for Parlee McLaws LLP- March 29,2007  
Title of Joe S. Cheng Report: "REPORT ON THE REVIEW of Insurance Reform-Premium and Claim Analysis By Gordon Smith and Theresa K. Reichart of Deloitte & Touche LLP"

(1) Year	(2) Premium Earned \$(millions)	(3) Claims Ratio	(4) Expense Ratio	(5) Combined Ratio	(6) Underwriting Profit (+)/ Loss (-)		(8) Premium Leverage	(9) Allocated Capital/Equity \$(millions)	(10) Reserves as % of Equity	(11) OSFI Yield Rates		(13) Investment Income \$(millions)			(16) Total Profit Pre-Tax		(18) Tax Rate		(20) Total Profit Post-Tax		(22) Year
					(7) %	(7) \$(millions)				(12) Capital	(12) Operations	(13) Equity	(13) Operations	(13) Total	(16) \$(millions)	(16) ROE	(18) Underwriting	(18) Investment	(20) \$(millions)	(20) ROE	
2006	273	76.0%	26.2%	102.2%	-2.2%	(6)	1.08	253	1.79	5.9%	5.9%	15	27	42	36	14.0%	35.12%	25%	27	10.7%	2006

Brief Description of Each Column including Data Source	
Col. No.	Description
(1)	Year in which accidents occurred and to which premiums were charged.
(2)	Premiums charged for specific Year for "Basic Coverages" (Third-Party-Liability & Accident Benefits) for Private Passenger New Brunswick automobile insurance, excluding farmers.
(3)	Claims expressed as % of premiums in column (2). This column value differs from that in Exhibit 2 because it includes an additional amount in the numerator (from Exhibit 7).
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2). (26.2% = 12.4% for acquisition expenses + 3.0% for taxes, license and fees + 10.8% for general expenses.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.
(6)	Equals premiums less claims and expenses as % of premiums.
(7)	Equals premiums less claims and expenses.
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to New Brunswick "Basic Coverages" automobile insurance.
(9)	This uses column (8) to impute the equity employed by insurers to support the "Basic Coverages" New Brunswick automobile insurance risk.
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.
(12)	See note for column (11).
(13)	Columns (13) ,(14) and (15) present the investment income earned on equity (13), reserves (14), and total (equity and reserves) (15), respectively.
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(19)	See note for column (18).
(20)	Same as column (16) except after tax.
(21)	Same as column (17) except after tax.
(22)	Same as column (1).

**Notes**

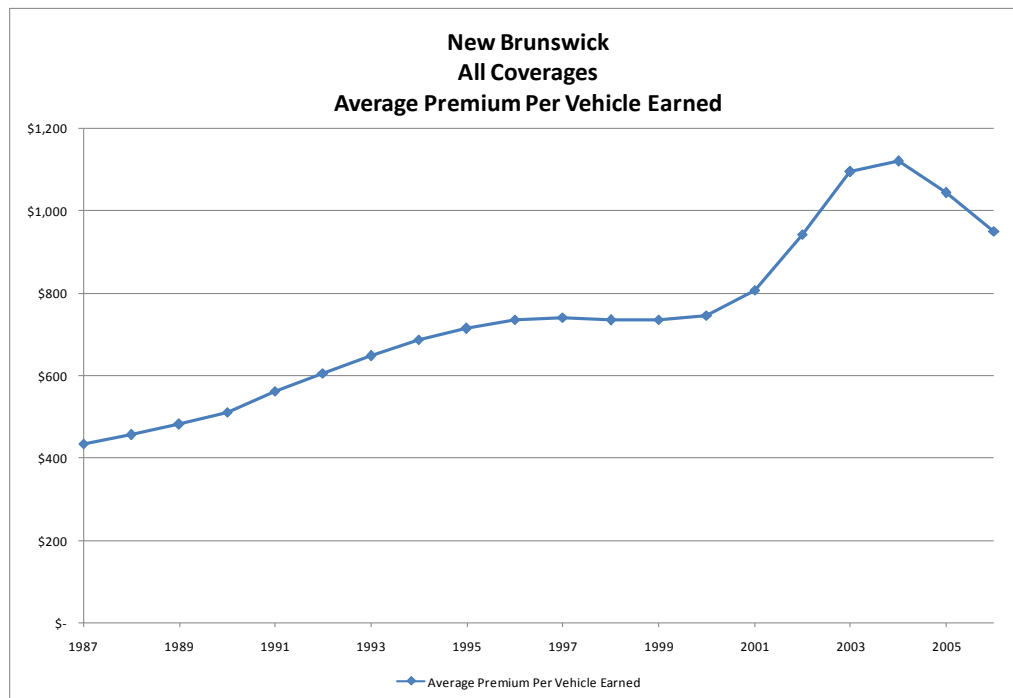
Some of the national numbers are slightly different than those in the Cheng Report because of the use of updated data. Insurance data is updated as more information becomes available (as results become more certain). We have used updated information and, as such, some of our numbers are slightly different than those in the Cheng Report.  
The numbers in this table are for "basic coverages" which includes third-party-liability and accident benefits.  
Column (19) presents effective tax rates on investment income which are slightly different than those arrived at in the Cheng Report even though the methodology in the Cheng Report was copied. -See notes in Exhibit 5 for a thorough explanation.

**Exhibit 12— Extended Claims Cost Data**

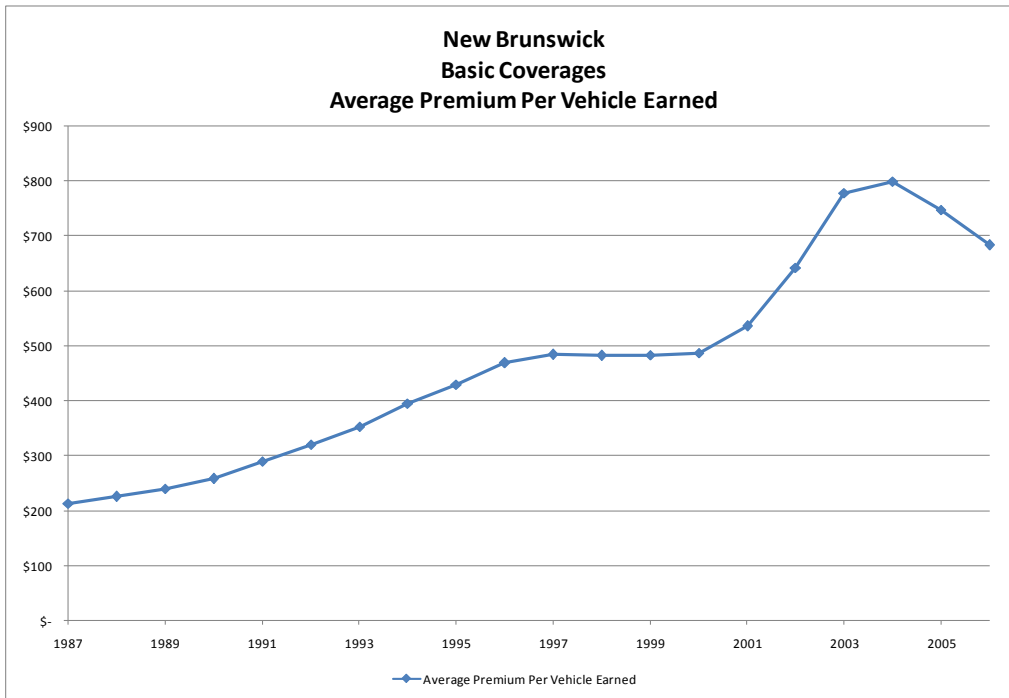
This exhibit, Exhibit 12, displays detailed historical premium and claim information for New Brunswick between the years 1987 and 2006 inclusive. There are seven parts to this exhibit, each part contains three graphs. Part 1 contains graphs on historical average premium rates. Part 2 contains graphs on Third-Party-Liability-Bodily Injury claims, Part 3 on Third-Party-Liability-Property Damage, Part 4 on Accident Benefits, Part 5 on Collision coverage claims, Part 6 on Comprehensive coverage claims, and Part 7 on All Coverages combined claims. All data is taken from GISA/IBC AU90-B.1987-2006.

**Part 1**

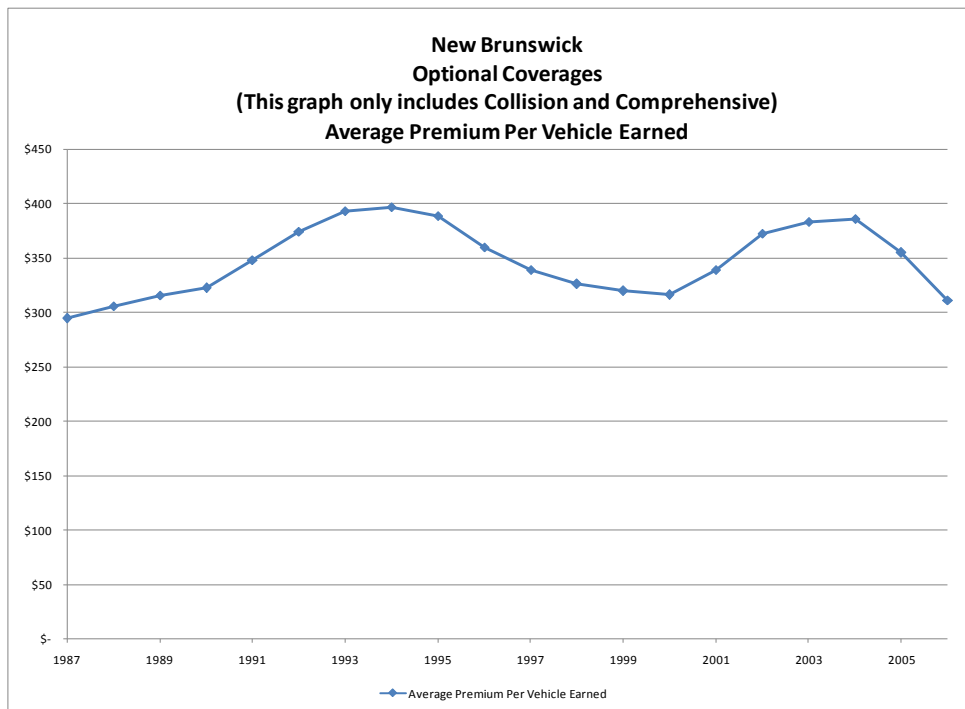
Average premiums for All Coverages combined grew gradually from 1987 to approximately 2001 before increasing at a faster rate between 2001 and 2003.



Average premium growth for Basic Coverages, as they form a substantial part of All Coverages, grew similar to that of All Coverages. Premium growth was fairly stable until 2001 but grew at a faster rate between 2001 and 2003.

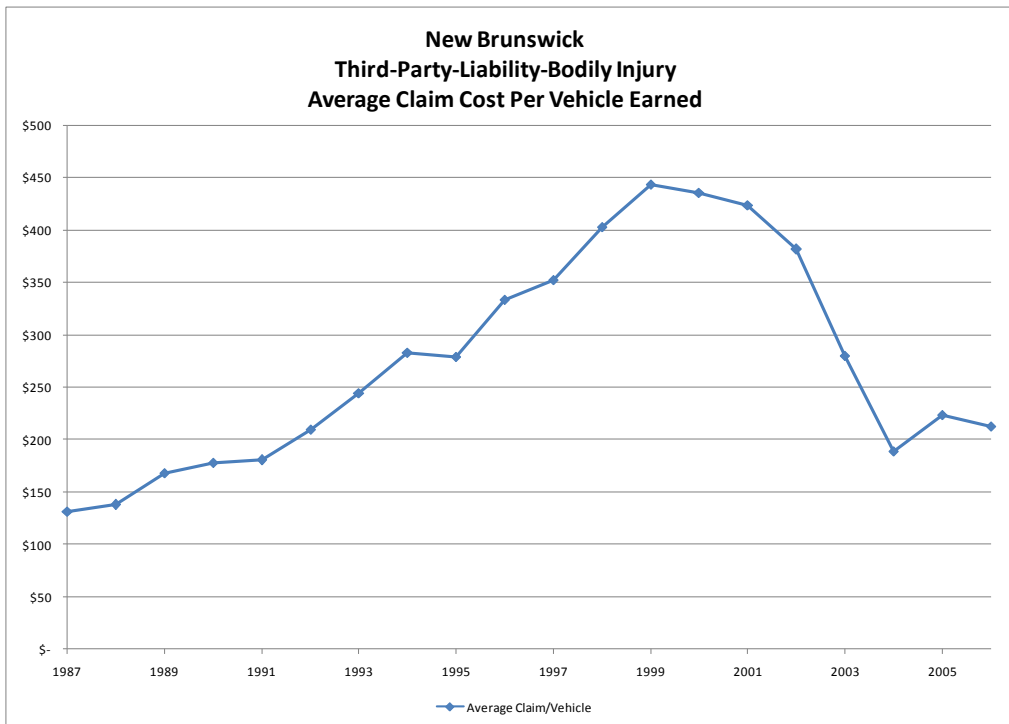


Average premium for Optional Coverages (the graph below only contains data on Collision and Comprehensive Coverages combined) has stayed between \$300 and \$400 per year since 1988.

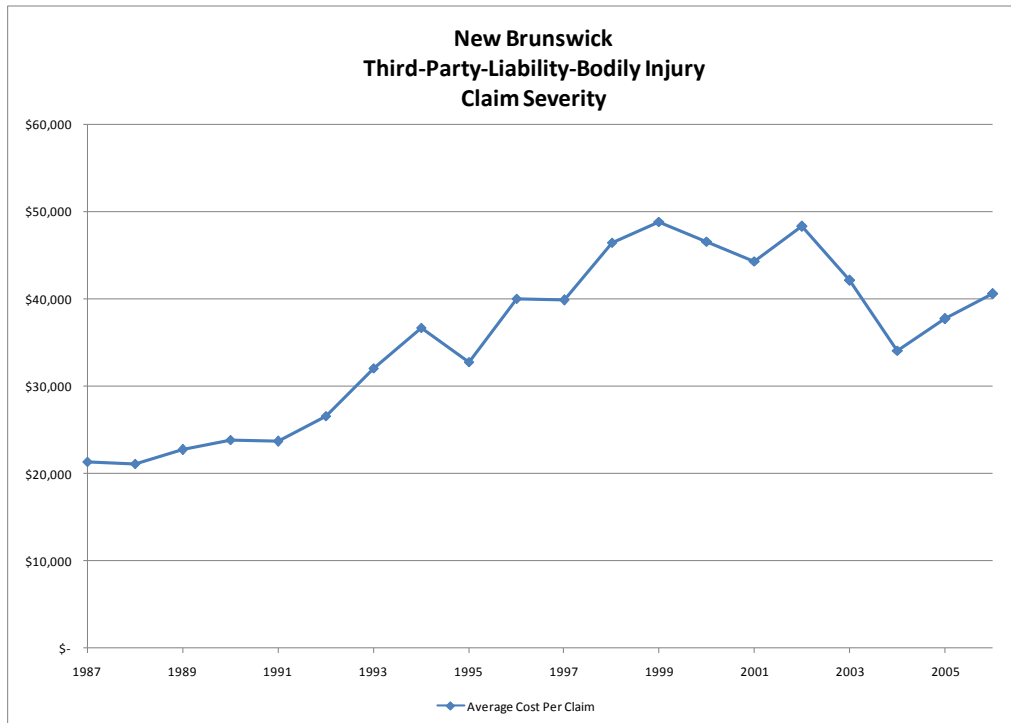


**Part 2**

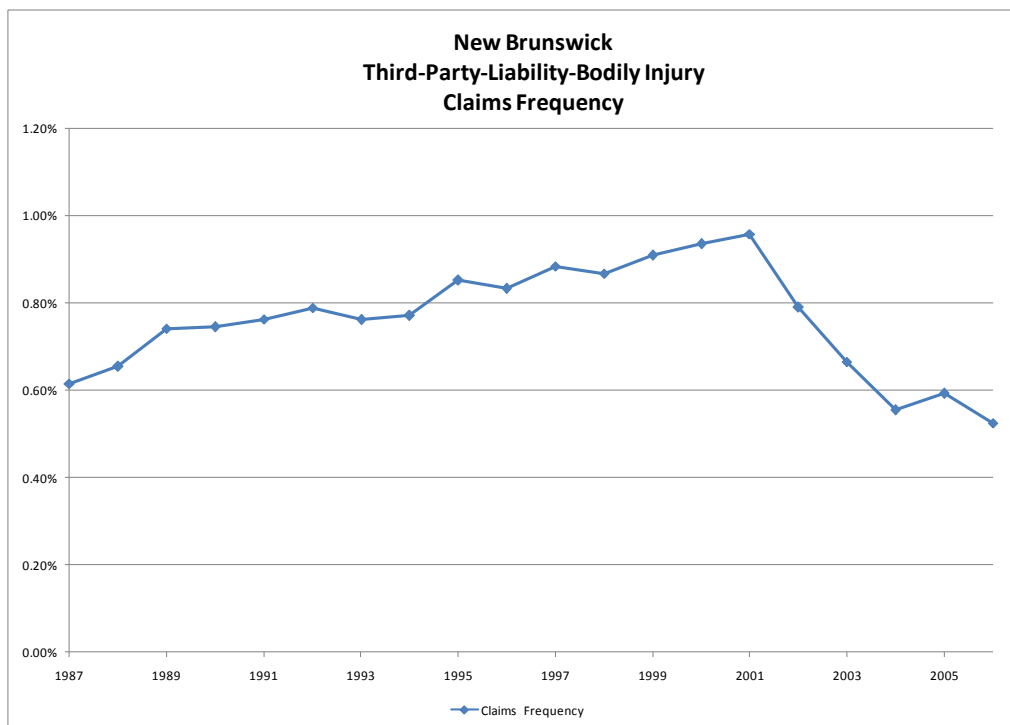
Average claim costs per vehicle for Third-Party-Liability-Bodily Injury (TPL-Bodily Injury) grew at a stable rate from 1987 to 1999 before decreasing over the period 1999 to 2004—average claim costs for TPL-Bodily Injury, the coverage targeted by the IR, was *decreasing* as the IR was introduced.



Claim severity is the average cost of each claim (dividing total claims costs by the total number of claims). TPL-Bodily Injury claim severity grew from at least 1987 until the introduction of the IR.

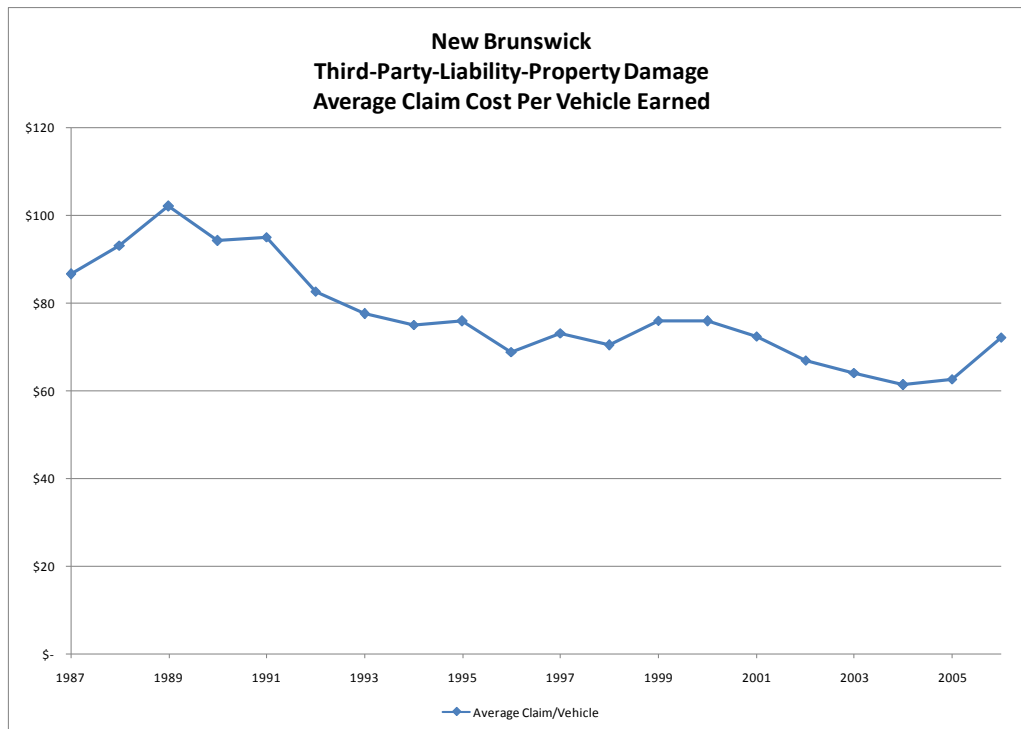


Claims frequency is the number of claims per vehicles earned. For example, 0.52 percent of vehicles on the road in 2006 (52 for every 1000 vehicles) experienced at TPL-bodily injury claim. Although TPL-Bodily Injury claim frequency increased from 1987 to 2001, it was actually decreasing as the IR was introduced. In fact, by the time the IR was introduced, TPL-Bodily Injury claim frequency was at its 1987 level.

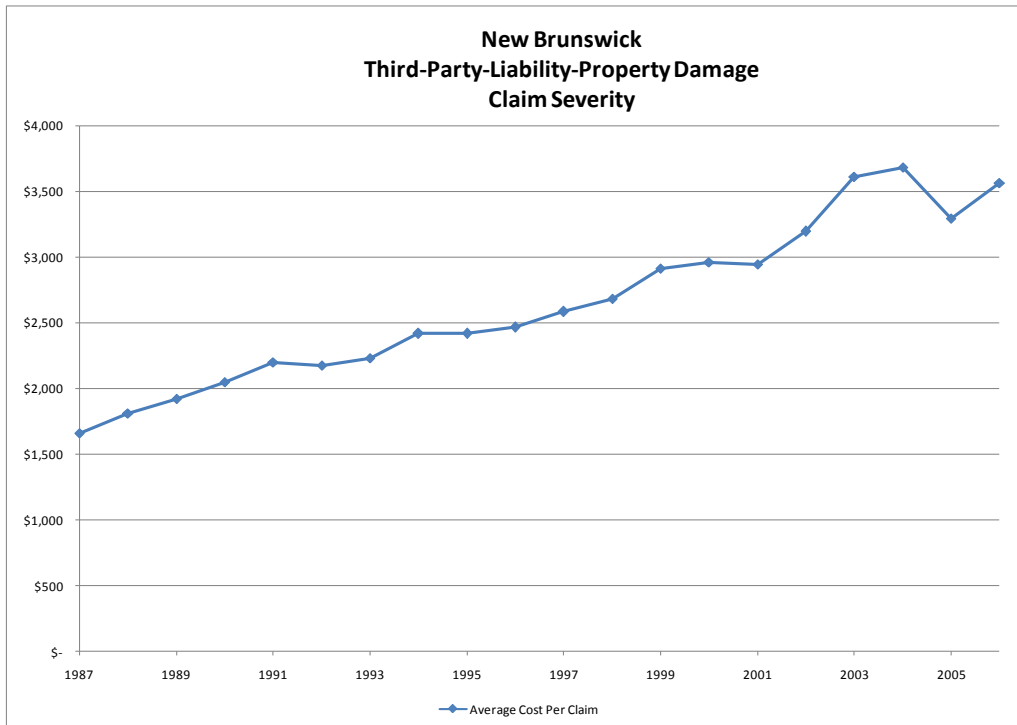


**Part 3**

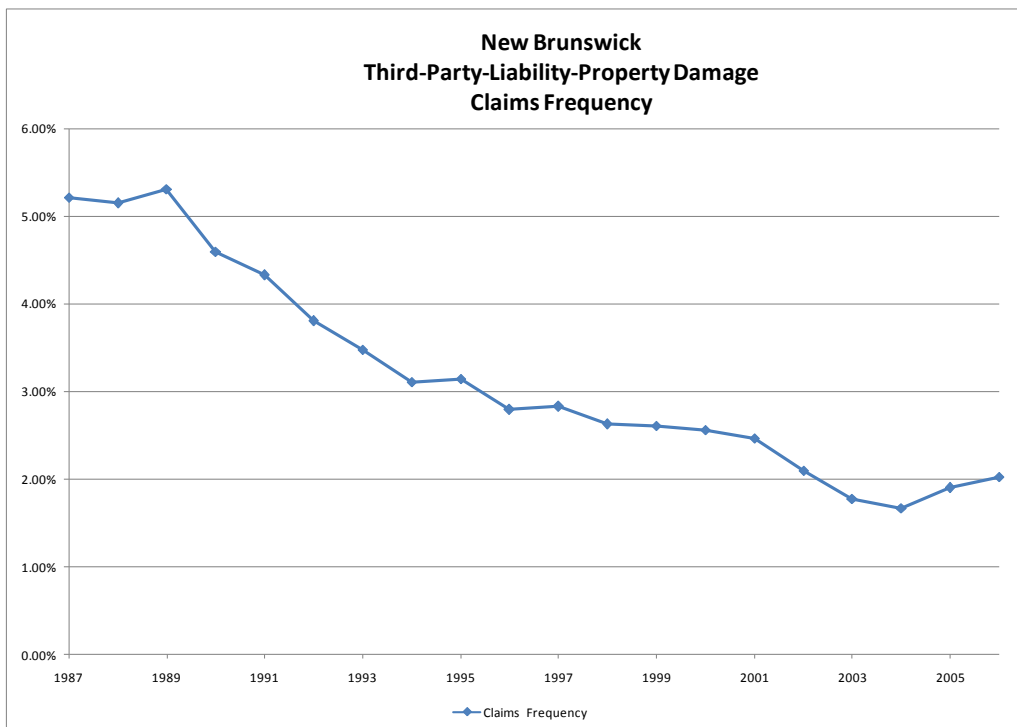
New Brunswick Third-Party-Liability-Property Damage (TPL-Property Damage) average claims per vehicle decreased from 1999 through until 2004.



TPL-Property Damage claim severity increased nearly continuously and steadily from 1987 to 2006. This may be due to the increase in the value of the average vehicle on the road.



TPL-Property Damage claim frequency steadily decreased from 1989 to 2004.

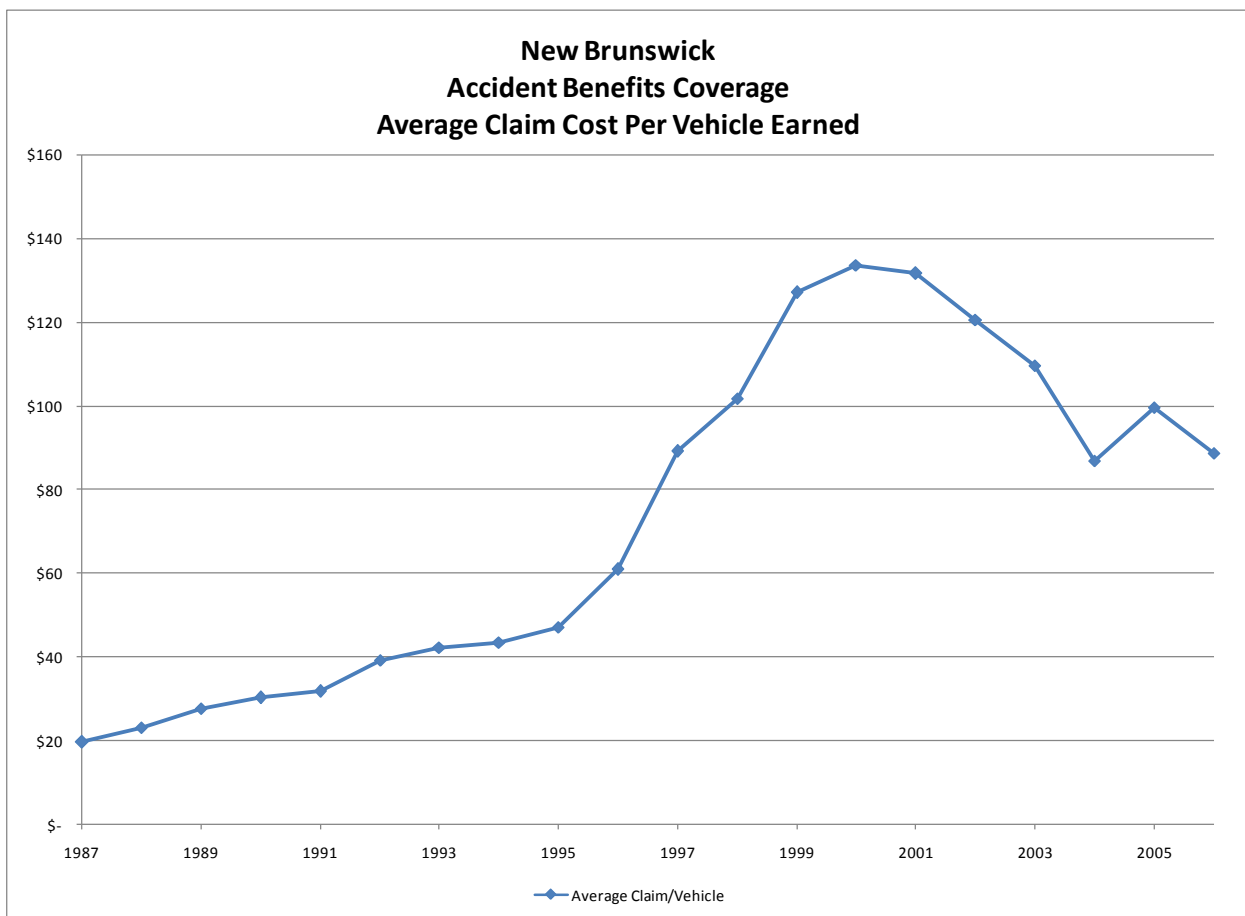


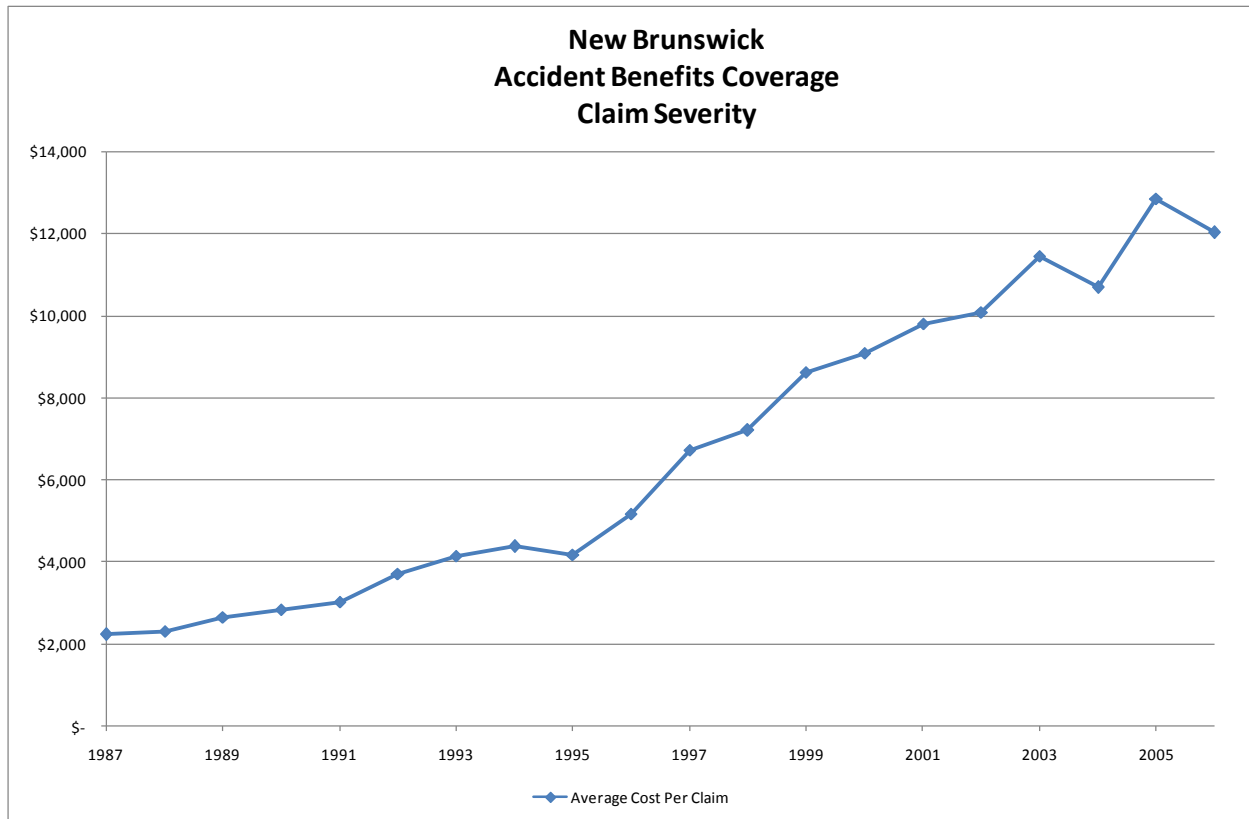


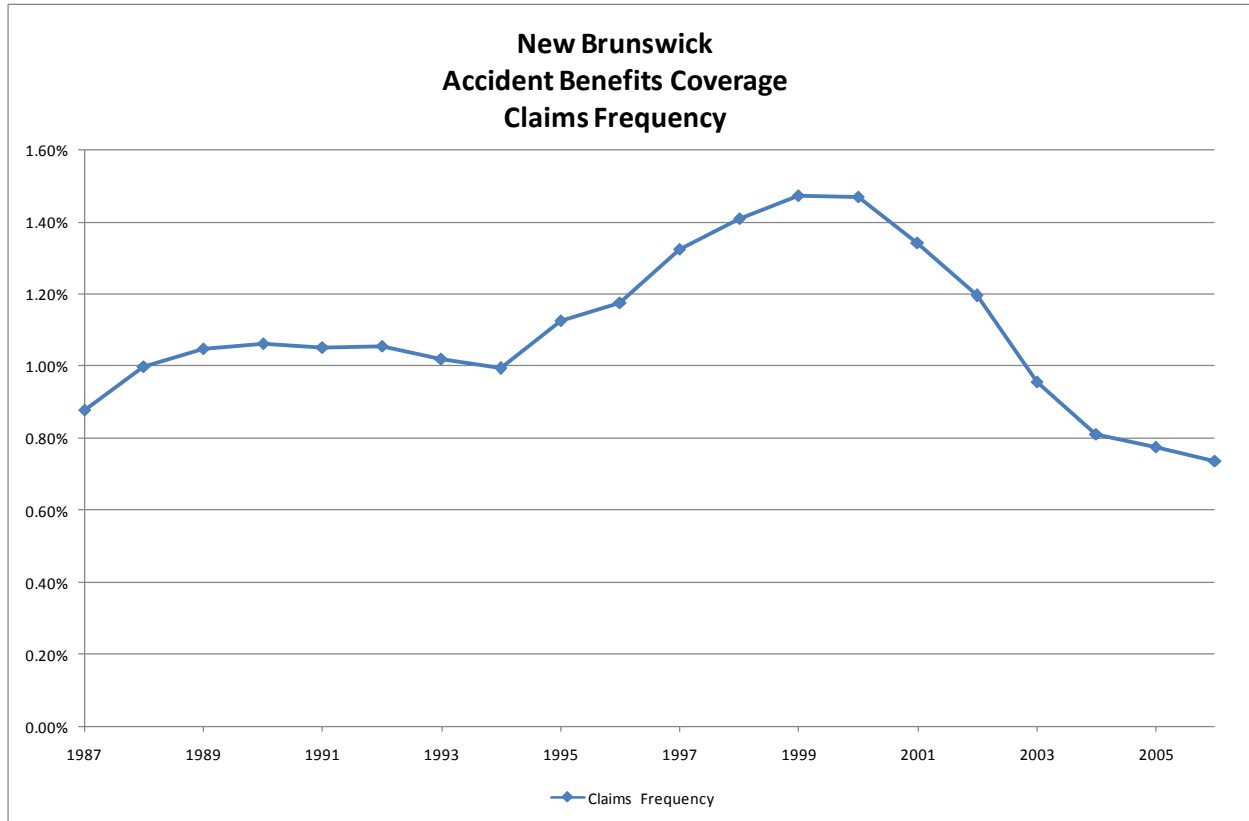
**Part 4**

Accident Benefits coverage provides no-fault medical, disability, loss of income, funeral, and other benefits to individuals who are injured (or to their dependants if killed) in a motor vehicle collision. The benefits are paid, based on need, regardless of fault.

Average claim costs per vehicle for Accident Benefits increased at an annualized rate of 23.2 percent per year between 1995 and 2000 (from \$47.15 to \$133.58). In the time period immediately prior to the implementation of the IR, Accident Benefits claim costs increased faster than any other coverage; from 1996-2002, Accident Benefit claim costs per vehicle nearly doubled.

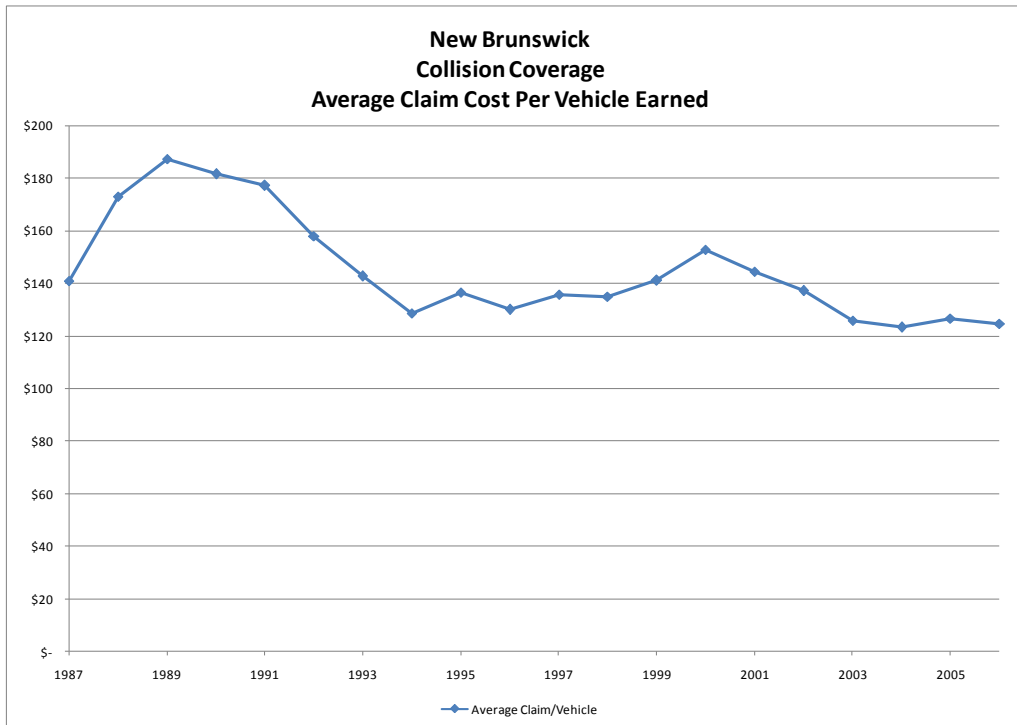




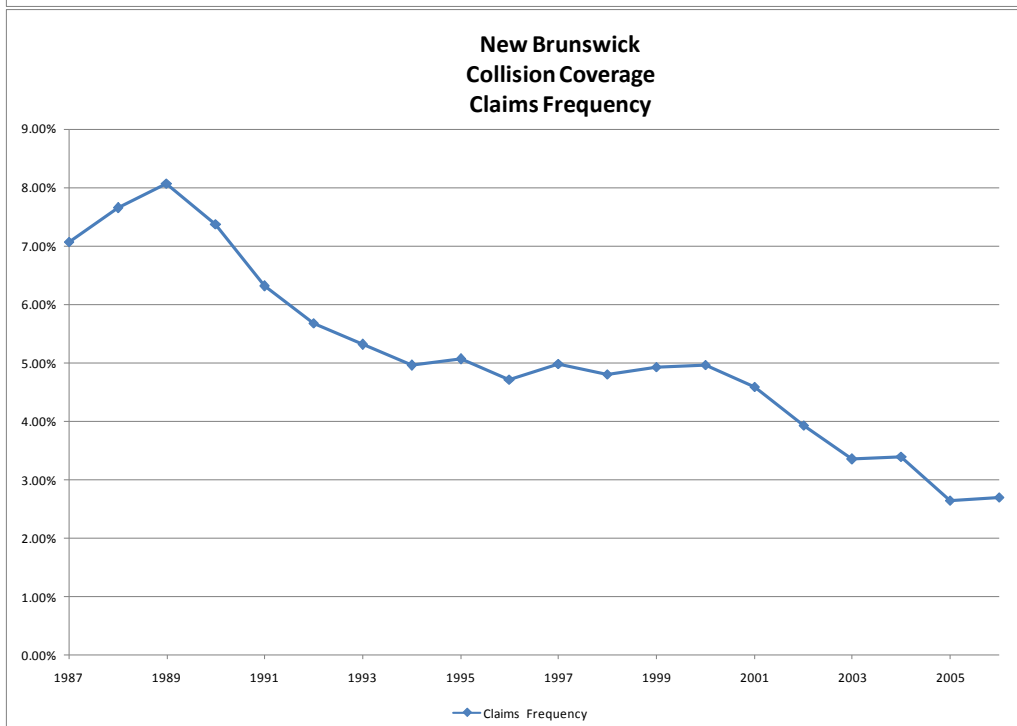
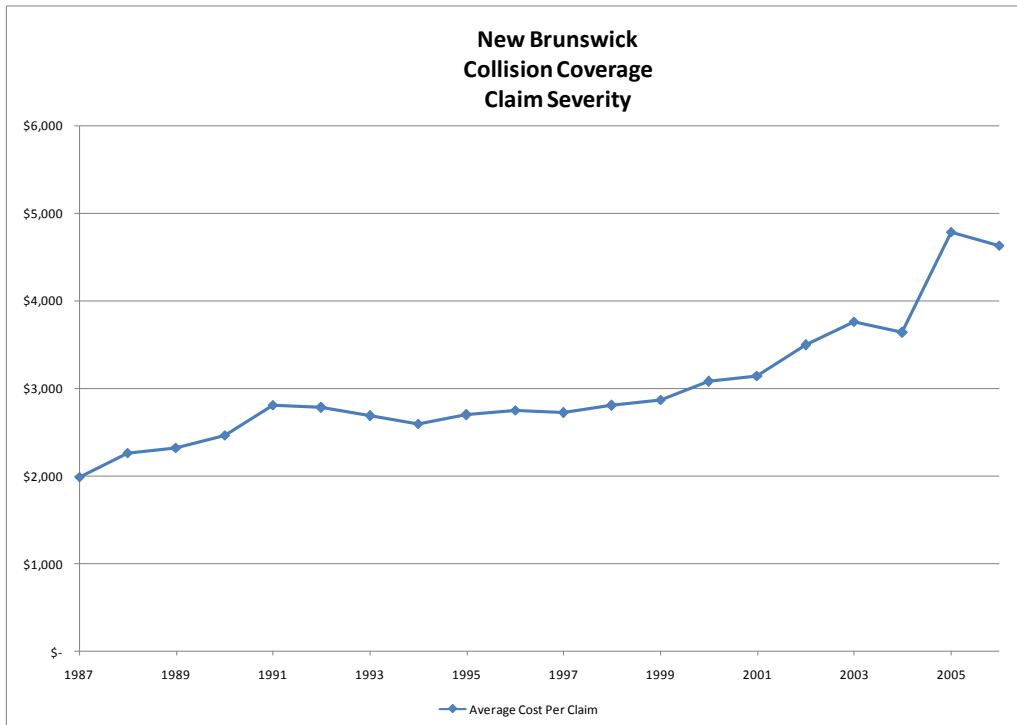


**Part 5**

Collision Coverage provides indemnity for damage to one's own vehicle that one is responsible for. Average claim costs per vehicle for Collision coverage has been fairly stable from 1993 to 2006.

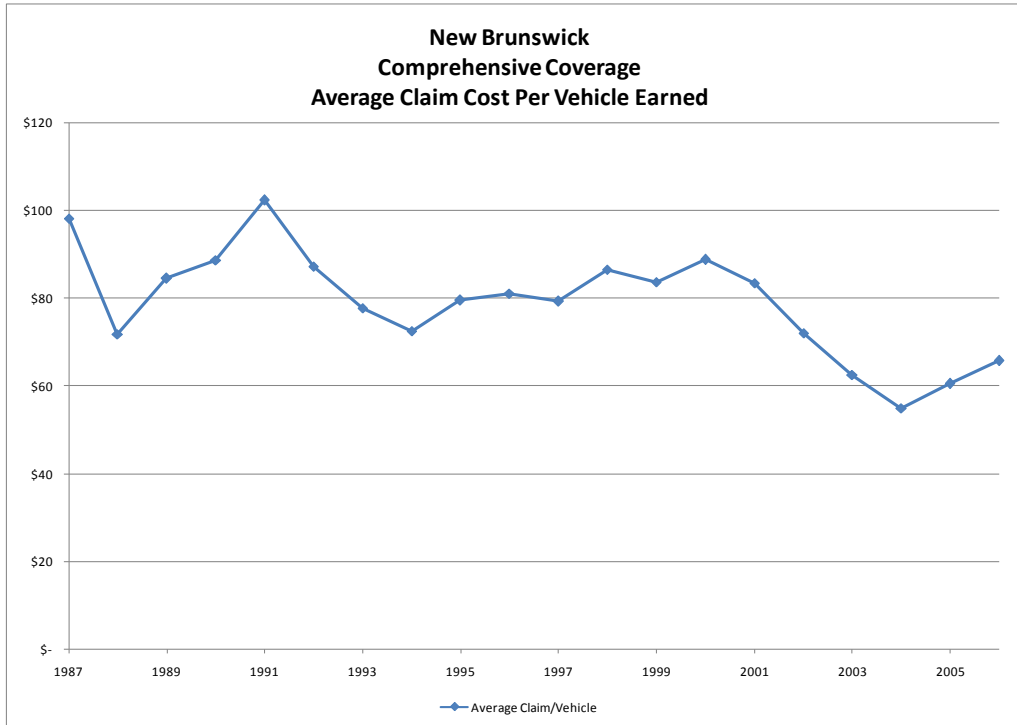


Although Collision Coverage claim severity increased over the time period analyzed, this was offset by a decreasing claim frequency.

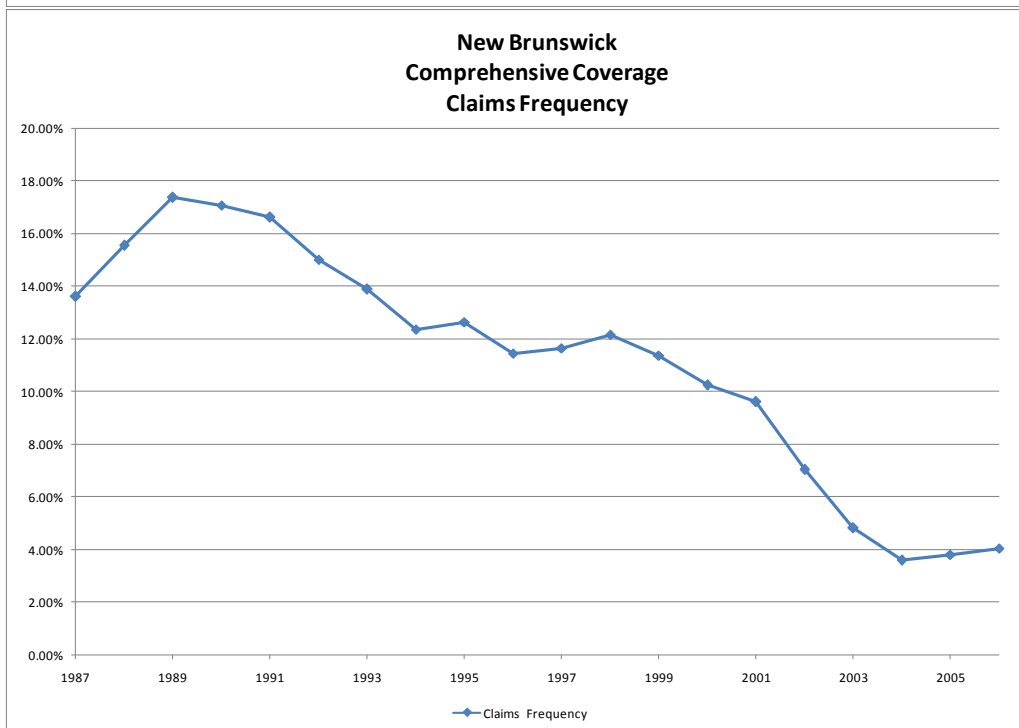
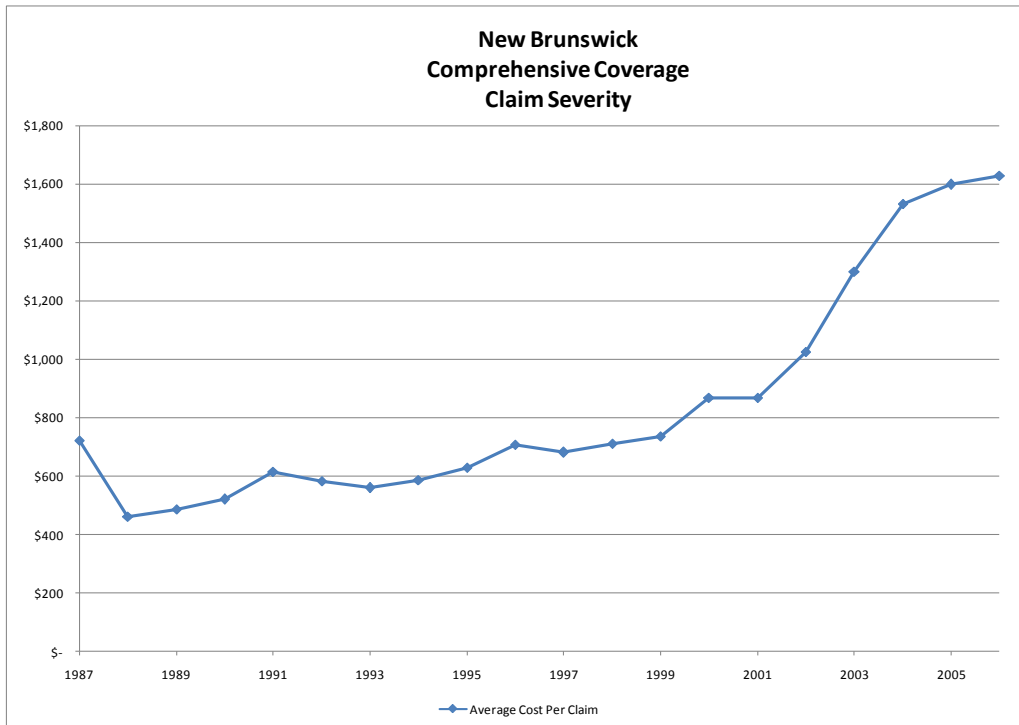


**Part 6**

Comprehensive Coverage provides first-party indemnity for damage to one's vehicle caused by fire, theft, wind, flood, lightening, storm, hail, contact with an animal, etc. Comprehensive Coverage average claims per vehicle decreased substantially between 2000 and 2004.



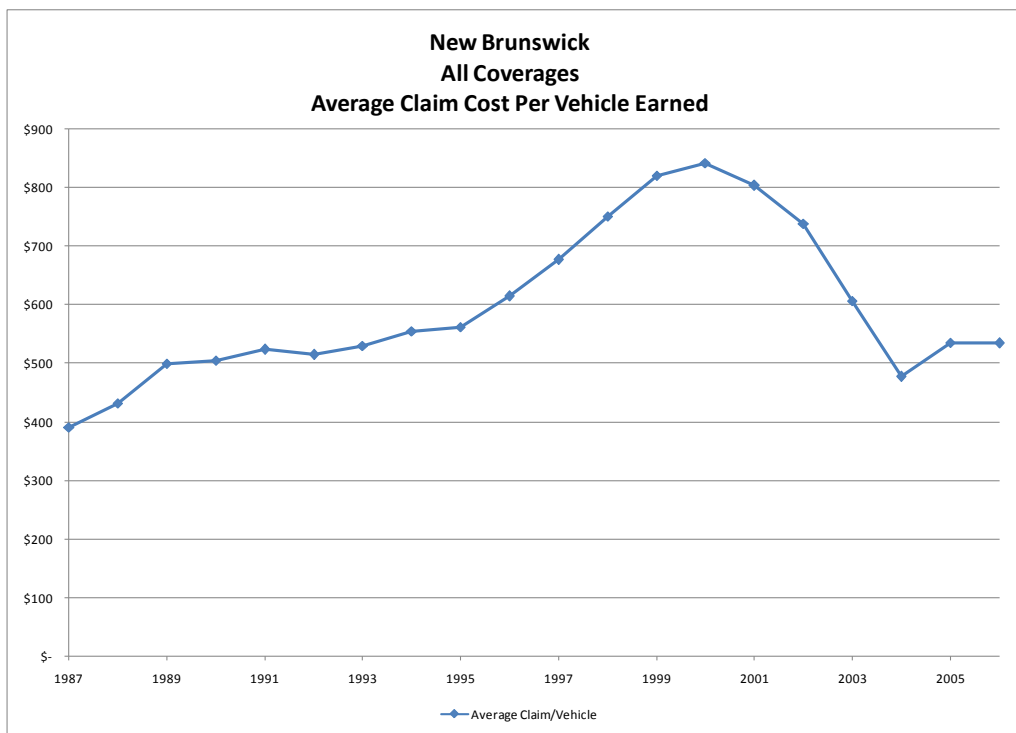
Although Comprehensive Coverage claim severity increased substantially between 2000 and 2004, this was offset by a sharper decrease in claim frequency.



**Part 7**

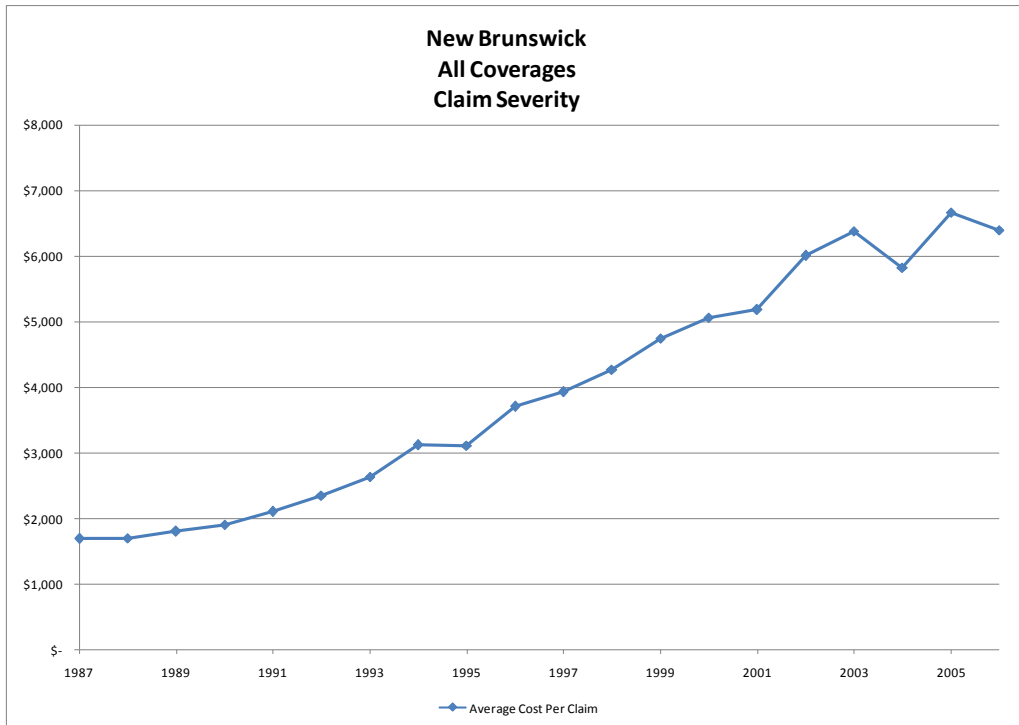
All Coverages combined includes Basic Coverages and Optional Coverages. In the following graphs, it also includes Uninsured Motorist, Underinsured Motorist, Specified Perils, and All Perils. All Coverages provides an overview of the trends in claim severity and frequency for the entire New Brunswick automobile insurance industry.

All Coverages New Brunswick automobile insurance average claim costs per vehicle increased from 1987 to 2000 and then *decreased* from 2000 through the implementation of the IR, to 2004. In the three years prior to the implementation of the IR, claims for the industry were actually decreasing.

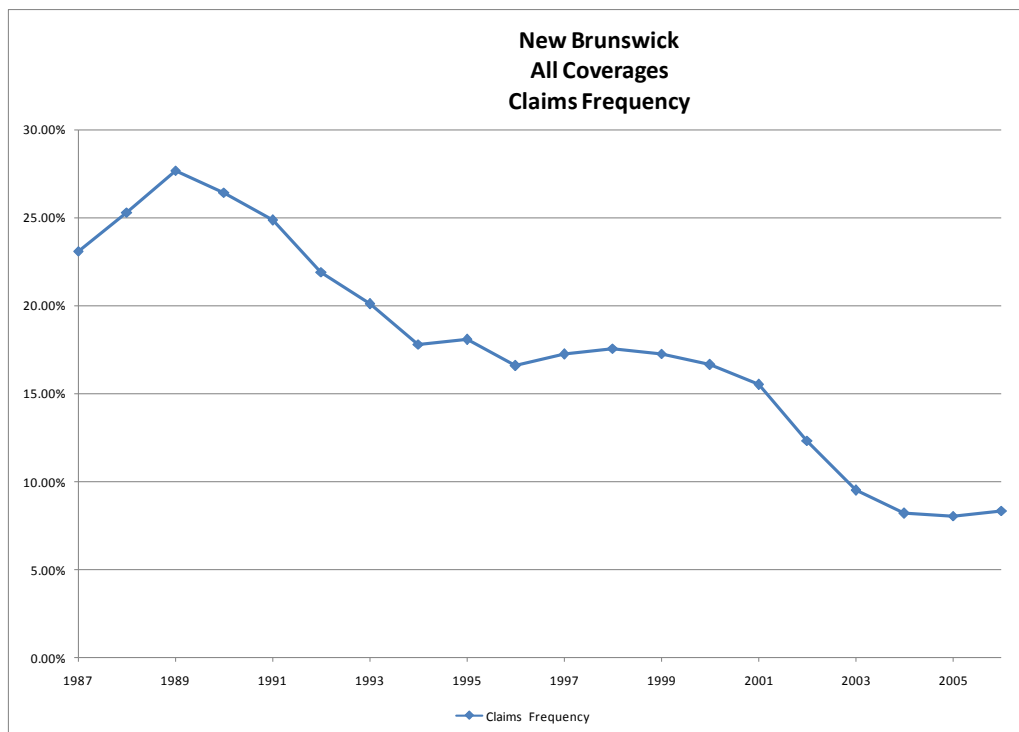


All Coverages claim severity showed steady upward growth from 1987 through until the implementation of the IR in 2004. All Coverages claim growth was not unstable prior to the IR or at any time since at least 1987.





Although All Coverages claim severity was increasing, claim frequency was decreasing, over the time period 1999 through until at least 2006.



**Exhibit 13—Regression Analysis, Expense Ratios**

We estimate what insurers spent on administrative costs because of their automobile insurance operations. Administrative costs include commissions paid to agents and brokers, the remuneration of various insurance company personnel, and other expenses of running an insurance company. These expenses do not include adjustment expenses which are included with the claims. The Office of the Superintendent of Financial Institutions (OSFI) requires insurers to submit data on the cost of acquiring business (commissions) as well as general expenses (bricks and mortar expenses, the remuneration of office personnel, etc.). We use a statistical method to estimate these expenses relative to premiums. We define expenses to include commissions, other, and general expenses. The equation that we use to estimate expenses is equation (0.1).

$$COGE_{it} = \phi_{1t}PROPERTY_{it} + \phi_{2t}AUTO_{it} + \phi_{3t}OTHER_{it} + \phi_{4t}REASSUMED_{it} + \phi_{5t}RECEDED_{it} + \mu_{it} \quad (0.1)$$

Equation (0.1) is an ordinary-least-squares regression equation in which the intercept term is suppressed. Equation (0.1) has expenses,  $COGE_{it}$ , as a function of the premium revenue that insurers earned from different lines of insurance business. The total direct premiums that an insurer (insurers denoted by subscript  $i$ ) earned in a given year (years denoted by subscript  $t$ ) is the sum total of that which they earned on property insurance, automobile insurance, and other insurance. Automobile insurance premium dollars earned are denoted by  $AUTO_{it}$ , property insurance premium dollars earned are denoted by  $PROPERTY_{it}$ , and other insurance premium dollars earned are denoted by  $OTHER_{it}$ . We justify the suppression of the intercept term by the fact that insurers who don't have any premium revenue will generally not have expenses.<sup>15</sup> Lastly, we have also included terms for reinsurance since we believe that insurance companies who cede insurance premiums may likely have lower administrative expenses and those that assume reinsurance may likely have larger expenses. Reinsurance dollars assumed is represented by  $REASSUMED_{it}$  and reinsurance dollars ceded to other insurance companies is represented by  $RECEDED_{it}$ . The error term is  $\mu_{it}$ .

We ran equation (0.1) for each year in our dataset, 2000-2006 and found the results presented in Table 10. The results from Table 10 suggest that the ratio of expenses to automobile insurance premiums has been stable, in Canada, over the time period 2000 to 2006.

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<sup>15</sup> This wouldn't be true for insurers that are starting-up or winding-down.

**Table 10, Expenses as a Function of Premiums**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
	Expenses	Expenses	Expenses	Expenses	Expenses	Expenses	Expenses
Property Premiums Earned	0.266	0.33	0.367	0.371	0.284	0.341	0.342
	(9.68)**	(7.35)**	(6.02)**	(5.80)**	(3.37)**	(3.57)**	(4.85)**
<b>Automobile Premiums</b>	<b>0.244</b>	<b>0.218</b>	<b>0.208</b>	<b>0.228</b>	<b>0.242</b>	<b>0.24</b>	<b>0.243</b>
	(17.62)**	(10.26)**	(7.80)**	(8.32)**	(5.93)**	(4.90)**	(6.50)**
Other Premiums Earned	0.378	0.267	0.212	0.152	0.184	0.195	0.197
	(15.49)**	(6.87)**	(6.33)**	(3.51)**	(2.81)**	(2.90)**	(3.68)**
Reinsurance Assumed	0.275	0.281	0.329	0.298	0.377	0.262	0.269
	(25.96)**	(10.63)**	(7.06)**	(11.69)**	(6.78)**	(5.70)**	(15.56)**
Reinsurance Ceded	-0.272	-0.262	-0.297	-0.289	-0.269	-0.303	-0.295
	(-15.65)**	(-6.42)**	(-8.11)**	(-8.15)**	(-4.98)**	(-7.55)**	(-10.15)**
Observations	123	197	36	40	37	38	38
R-squared	0.99	0.86	0.98	0.98	0.97	0.97	0.98

Absolute value of t statistics in parentheses

\* significant at 5%; \*\* significant at 1%

Un-weighted ordinary-least-squares (OLS) regression. The same specification has been used for each of the years 2000-2006 (only data from that year was included in each year's regression). For each year, the value in bold is the proportion of each dollar in revenue from automobile insurance premiums that went towards expenses. That is, for the year 2000, it cost 24.4 cents in expenses (commissions, other and general expenses) for each \$1.00 in premium revenue from automobile insurance. Data is from the Office of the Superintendent of Financial Institutions as supplied to the public for free by "Beyond 20/20." The data can be downloaded for free and the regression equation replicated by accessing the data at [www.beyond2020.com](http://www.beyond2020.com).