

Alberta's Minor Injury Regulation: Automobile Insurance Profits, Premium Rates, and Costs

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Executive Summary

In October 2004, the Alberta government introduced legislation that, among other things, set a limit of \$4,000 on the damages that could be obtained for pain and suffering in “minor” injuries.¹ In this report, we analyze the impact that this limit, the *Minor Injury Regulation* (MIR), had on Alberta’s automobile insurance market. Specifically, we answer four questions about this legislation.

1. Impact on Profitability

First, we ask whether profits on automobile insurance were unusually low in Alberta in the years prior to the implementation of the *Minor Injury Regulation* (MIR); and we investigate the impact that the MIR had on profits in the years immediately following that implementation. We find that the rate of return on equity for Alberta automobile insurance (All Coverages) averaged 5.8 percent in the years 1998 to 2002; but that it rose dramatically, to over 20 percent in 2003 – *before* the introduction of the MIR – and remained at that elevated level in 2004 - 2007.

2. Trends in Costs of Claims

Second, because the legislative changes that were introduced in October 2004 were aimed primarily at reducing claims costs, we investigate whether the costs targeted by the *Minor Injury Regulation* had been increasing prior to its implementation. We find that, over the period 1996 to 2002, claims costs did not vary significantly as a percentage of either total expenses or total premiums. Between 2002 and 2004, however – that is, *before* the change in legislation – there was a dramatic *decrease* in the ratio of claims costs to premiums; and that ratio remained at this lower level in 2005, 2006, and 2007.

3. Automobile Insurance Premiums

Third, we ask whether automobile insurance premiums were rising before 2004; and, if so, whether that increase was due to rising claims costs or to other factors. We find that Bodily Injury and Property Damage claims each rose by approximately 20 percent (per vehicle) between 1996 and 2003; while premiums increased by almost 65 percent. Furthermore, this increase in premiums cannot be explained by changes in administrative costs, rates of return on insurers’ investments, or tax rates. Rather, it appears that the increase was primarily a reaction to the five-year period of relatively low profits: 1998 to 2002.

¹ The legislation also: altered the sharing of risk through risk sharing pools, placed controls on premiums, required insurers/brokers to quote all consumers, introduced a diagnostic service treatment protocol regulation, required that net, rather than gross, income be used in the calculation of loss of earnings, and mandated that certain collateral benefits be deducted from personal damages.

4. Impact of Removal of Minor Injury Regulation

Finally we estimate what the impact on the average automobile insurance *premium* would be if the *Minor Injury Regulation* was removed permanently; and we ask what the impact would be on automobile insurance *profits* if the government was to hold premiums at their current rates and the MIR was to be revoked. We find that average premiums for Basic Coverages would have to increase by \$65.23 per year if profitability was held constant, and would *decrease* by \$2.00 per year if the ROE was set a 12 percent after taxes. We also find that profits from Basic Coverages would fall to approximately 19.8 percent annual after-tax ROE if premiums were held constant at current rates (17.2 percent for All Coverages), using 2007 data and assumptions (as noted in the body of the report).

Section 1- Profitability of Alberta Private Passenger Automobile Insurance²

1.1- Introduction

In the case of *Morrow v. Zhang* (2008), which challenged the constitutionality of the *Minor Injury Regulation*, 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 2002.³

In this section, we apply the Cheng Report’s methodology exactly, but extend it to data for a twelve-year period: 1996 to 2007. (The methodology and calculations are explained in detail in the Appendix, Exhibits 1-3 and 5.)

Also, whereas the Cheng Report estimated profitability for All Coverages and Basic Coverages (Basic Coverages in an addendum), we also estimate profitability for Optional Coverages.

We have employed updated data which result in slightly different numbers than those in the Cheng Report. The updated data provide an improvement on the data available at the time of the Cheng Report. These differences are noted in the Appendix.

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

1.2- All Coverages Combined

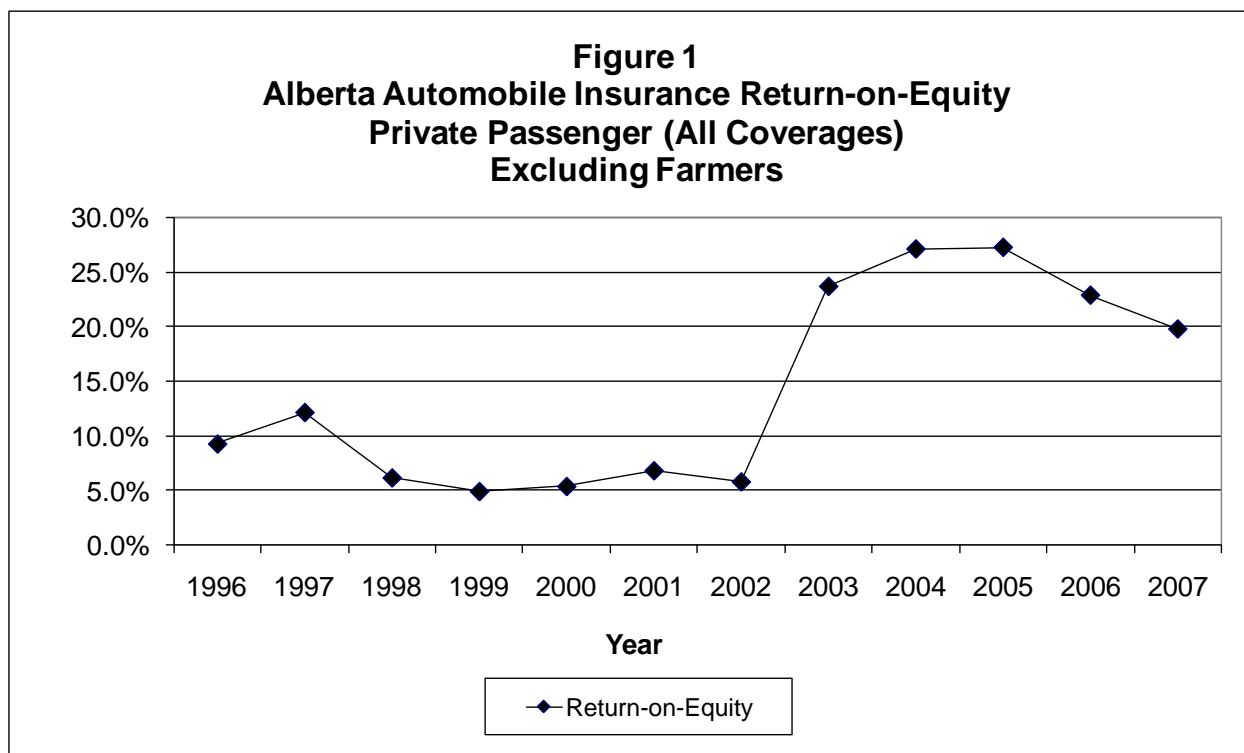
The most common measure of industry profitability (and the measure used in the Cheng Report), is after-tax “return on equity” (ROE) – that is, the industry’s after-tax profits divided by the value of the investments made in the industry. In Table 1 and Figures 1 and 2, we show that the Alberta automobile insurance industry has had a positive ROE – on total private passenger coverage (excluding farm coverage) - since at least 1996. Further, our calculations show that there have been two distinct periods in the eleven years studied: From 1996 to 2002, profits ranged from 4.9 to 12.1 percent. Following 2002, however, profits increased dramatically, to 20 percent or more in each year between 2003 and 2007.

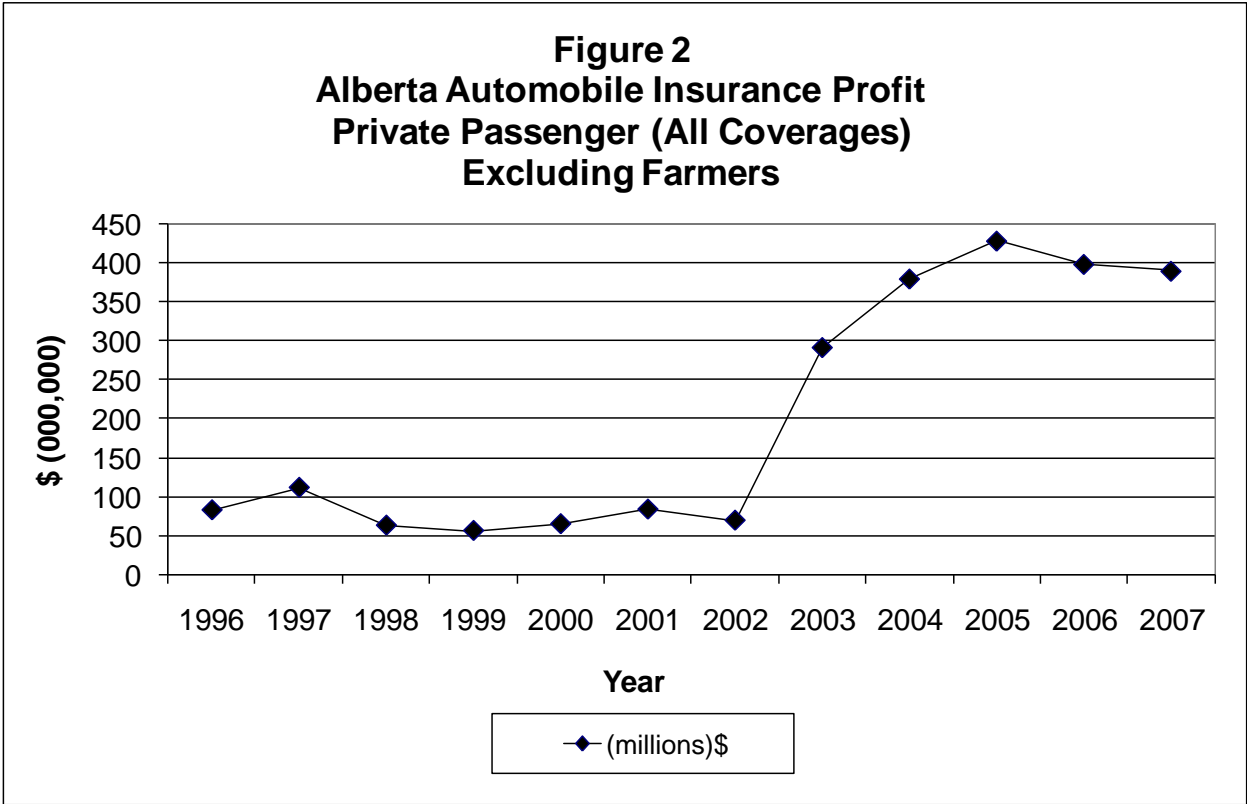
² excluding farmers

³ 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.”

Table 1		
Alberta Automobile Insurance Profitability Private Passenger (All Coverages) Excluding Farmers		
Year	After-Tax Profit (millions)\$	Return-on-Equity
1996	83	9.3%
1997	111	12.1%
1998	63	6.2%
1999	56	4.9%
2000	65	5.4%
2001	83	6.8%
2002	69	5.8%
2003	291	23.6%
2004	380	27.1%
2005	428	27.2%
2006	398	22.8%
2007	390	19.8%

Source: Exhibit 1





1.3- Mandatory/ Compulsory Basic Coverages⁴

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

In Alberta, 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.

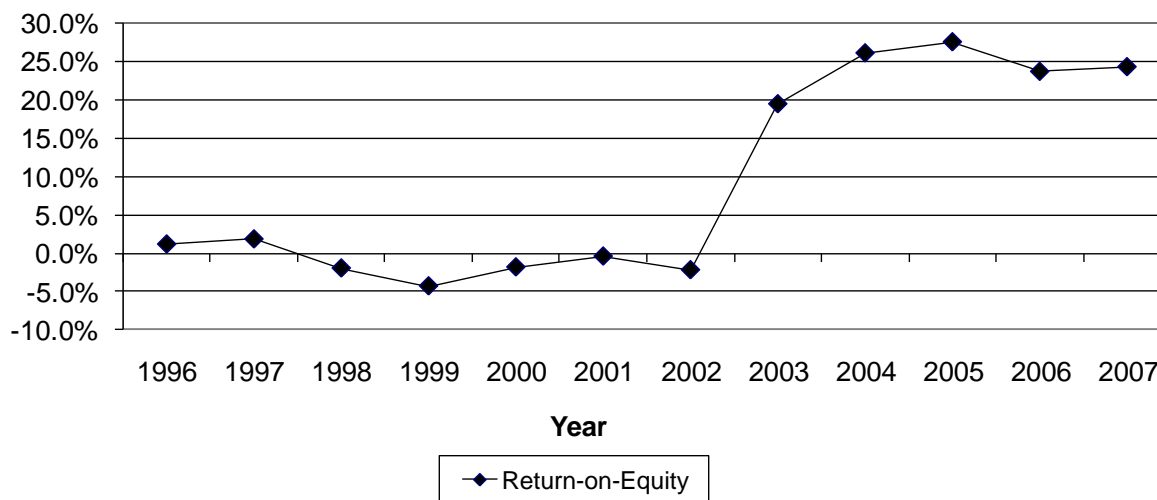
Again using the Cheng Report’s methodology, it is seen in Table 2 and Figures 3 and 4 that, prior to 2003, Basic Coverage was not very profitable, with an ROE ranging from -4.3 to +1.8 percent. In 2003, however, the return on Basic Coverage increased dramatically, to 19.4 percent, and rose above 20 percent in each of 2004, 2005, 2006 and 2007.

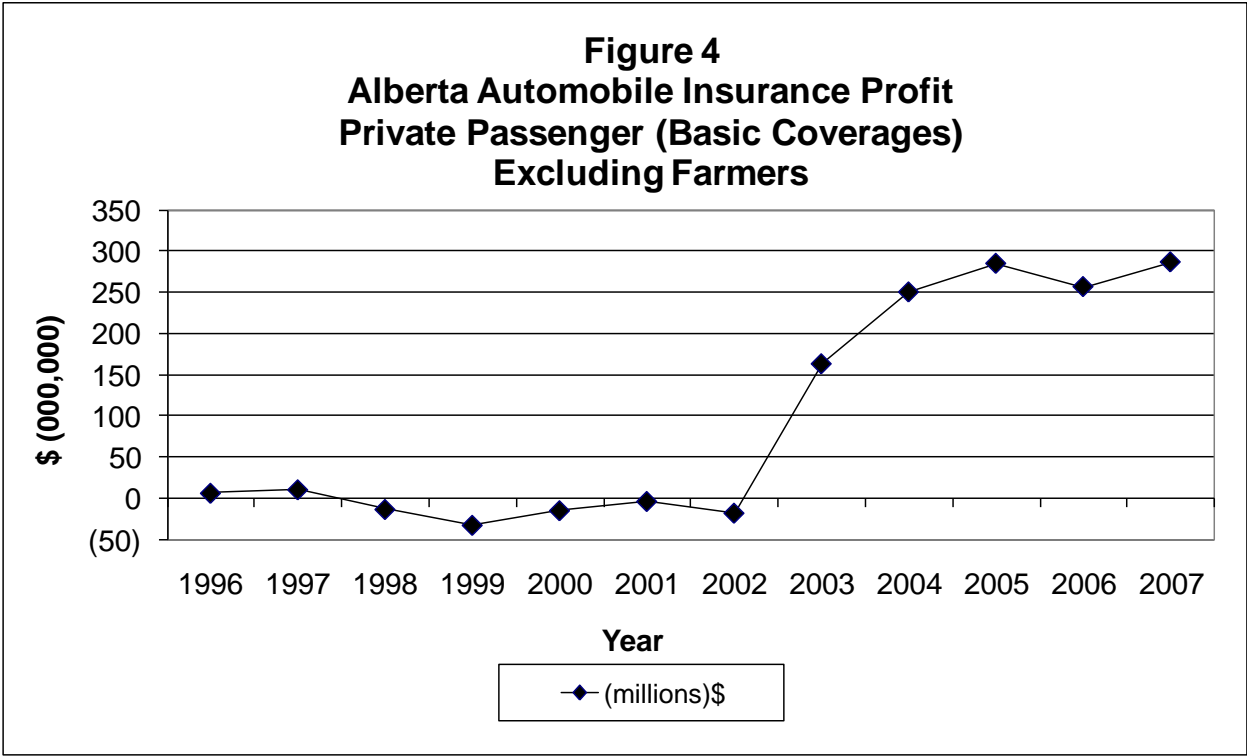
⁴ Third-Party-Liability & Accident Benefits coverages

Table 2		
Alberta Automobile Insurance Profitability Private Passenger (Basic Coverages) Excluding Farmers		
Year	After-Tax Profit (millions)\$	Return-on-Equity
1996	6	1.1%
1997	11	1.8%
1998	(13)	-2.0%
1999	(32)	-4.3%
2000	(15)	-1.9%
2001	(4)	-0.4%
2002	(18)	-2.2%
2003	163	19.4%
2004	250	26.1%
2005	285	27.5%
2006	257	23.7%
2007	286	24.3%

Source: Exhibit 2

Figure 3
Alberta Automobile Insurance Return-on-Equity
Private Passenger (Basic Coverages)
Excluding Farmers





1.4- Optional Coverages

In Alberta, motorists are not required to purchase additional coverages 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, and “other.” We group these coverages under the name Optional Coverages. It is seen in Table 3 and Figures 5 and 6 that these lines were consistently very profitable in the entire 1996 to 2007 time period, with annual after-tax ROE between 11 and 29.2 percent over that time. Like the Basic Coverages, Optional Coverages experienced a significant increase in profitability between 2002 and 2003; but, unlike Basic Coverage, the ROE on Optional Coverages has fallen back to a lower level by 2007, 11 percent.

Table 3		
Alberta Automobile Insurance Profitability Private Passenger (Optional Coverages) Excluding Farmers		
Year	After-Tax Profit (millions)\$	Return-on-Equity
1996	71	21.4%
1997	94	28.3%
1998	71	19.9%
1999	78	20.1%
2000	69	17.0%
2001	78	19.0%
2002	72	18.2%
2003	115	29.2%
2004	119	26.9%
2005	135	24.9%
2006	130	19.7%
2007	87	11.0%

Source: Exhibit 3

Figure 5
Alberta Automobile Insurance Return-on-Equity
Private Passenger (Optional Coverage)
Excluding Farmers

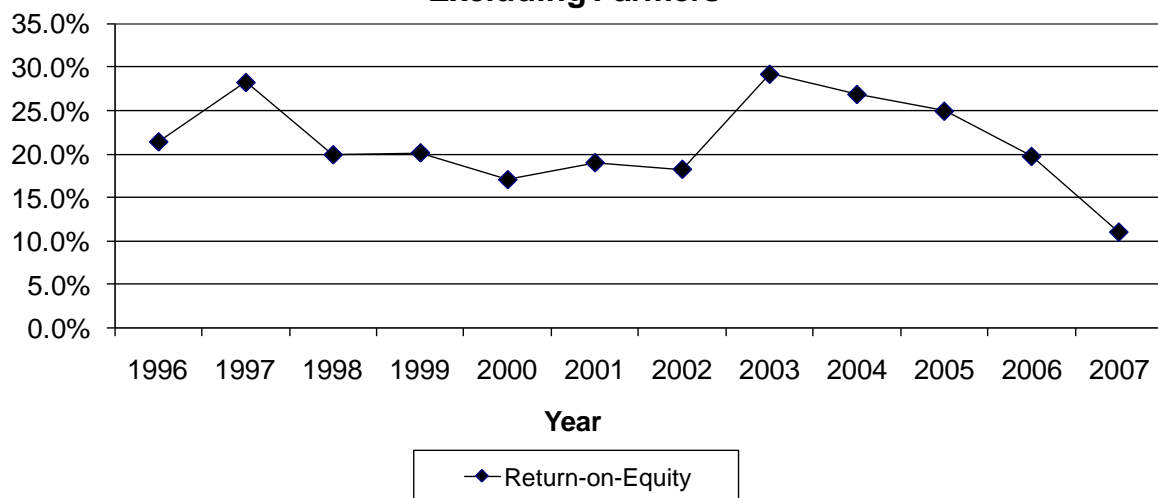
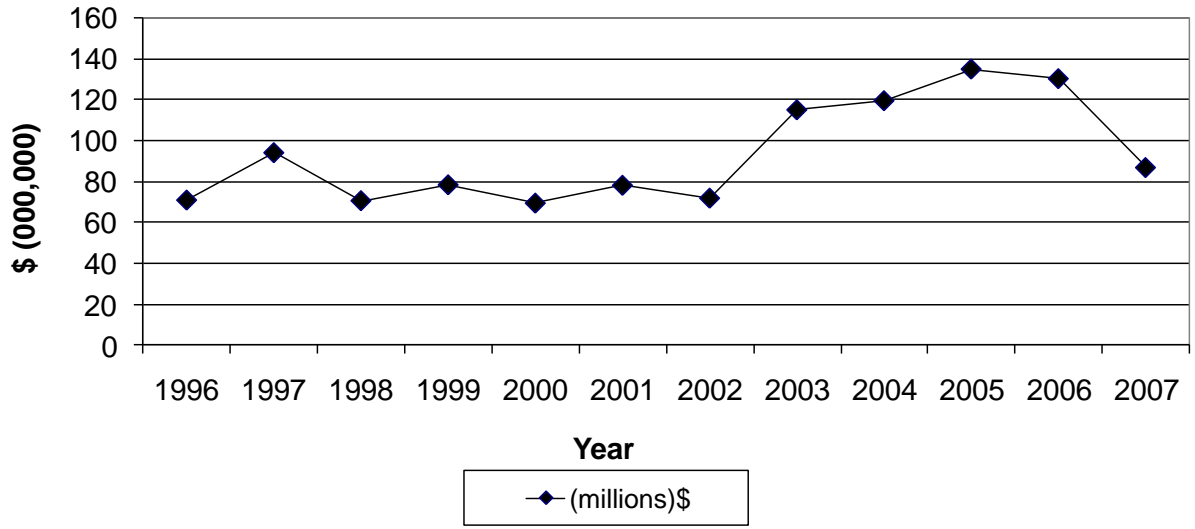


Figure 6
Alberta Automobile Insurance Profit
Private Passenger (Optional Coverages)
Excluding Farmers



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 insurance companies' total costs per motorist and to the average premium per motorist.

2.2- Claims Costs Relative to All Costs

The data in Table 4 indicate that the cost of claims remained a relatively constant portion of insurance companies' total costs throughout the entire period 1996 to 2007. That is, the rate at which the costs of claims were rising was not appreciably different from the rate at which insurance companies' other costs – primarily the costs of administration – were rising.

Table 4	
Alberta Automobile Insurance	
Private Passenger (All Coverages) - Excluding Farmers	
Year	Claims Costs Relative to All Costs
1996	79.7%
1997	79.7%
1998	79.7%
1999	80.0%
2000	80.2%
2001	80.8%
2002	81.8%
2003	81.7%
2004	80.4%
2005	81.2%
2006	81.3%
2007	81.4%

Source: AU90-A and Exhibit 1

2.3- Claims Costs Relative to Premiums

Tables 5, 6, and 7 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, until 2002, premiums tracked claims costs fairly closely. That is, each increase in claims costs per motorist was matched by a similar increase in insurance premiums, resulting in a ratio of costs to premiums that varied only slightly. For example, while the average claim for All Coverages was 86.3 percent of the average premium in 1996, that ratio was 82.9 percent in 2002 – because premiums rose by 29.7 percent over that period, while average claims rose by a similar amount, 24.5 percent.

In 2003 and 2004, however, premiums rose much more quickly than did claims costs, driving down the claims ratio. This was especially true of the average premium for Basic Coverages which rose by 19.3 percent between 2002 and 2004, while average claims actually *fell* by 22.3 percent.

Thus, it appears that the dramatic increase in profit rates over the 2003/2004 period was driven, in large part, by a sudden change in the relationship between the costs of Basic Coverage and the premiums that were charged for that coverage.

Table 5			
Alberta Automobile Insurance			
Private Passenger (All Coverages) - Excluding Farmers			
Year	Average Premium/ Vehicle	Average Claim/ Vehicle	Claims Costs Relative to Premiums
1996	\$ 733	\$ 633	86.3%
1997	\$ 765	\$ 636	83.1%
1998	\$ 801	\$ 700	87.4%
1999	\$ 815	\$ 706	86.7%
2000	\$ 811	\$ 739	91.1%
2001	\$ 845	\$ 729	86.2%
2002	\$ 951	\$ 788	82.9%
2003	\$ 1,090	\$ 733	67.2%
2004	\$ 1,123	\$ 667	59.4%
2005	\$ 1,034	\$ 611	59.1%
2006	\$ 1,020	\$ 655	64.2%
2007	\$ 1,028	\$ 702	68.3%

Source: AU90-A

Table 6			
Alberta Automobile Insurance			
Private Passenger (Basic Coverages) - Excluding Farmers			
Year	Average Premium/ Vehicle	Average Claim/ Vehicle	Claims Costs Relative to Premiums
1996	\$ 460	\$ 456	98.9%
1997	\$ 495	\$ 489	98.7%
1998	\$ 525	\$ 525	100.0%
1999	\$ 537	\$ 549	102.2%
2000	\$ 537	\$ 555	103.3%
2001	\$ 563	\$ 546	97.1%
2002	\$ 640	\$ 593	92.6%
2003	\$ 750	\$ 539	71.8%
2004	\$ 763	\$ 460	60.3%
2005	\$ 657	\$ 378	57.6%
2006	\$ 621	\$ 388	62.5%
2007	\$ 606	\$ 374	61.7%

Source: AU90-A

Table 7			
Alberta Automobile Insurance			
Private Passenger (Optional Coverages) - Excluding Farmers			
Year	Average Premium/ Vehicle	Average Claim/ Vehicle	Claims Costs Relative to Premiums
1996	\$ 347	\$ 234	67.5%
1997	\$ 340	\$ 196	57.7%
1998	\$ 342	\$ 226	65.9%
1999	\$ 341	\$ 208	61.0%
2000	\$ 335	\$ 239	71.4%
2001	\$ 342	\$ 232	67.7%
2002	\$ 368	\$ 248	67.5%
2003	\$ 400	\$ 243	60.8%
2004	\$ 422	\$ 253	59.9%
2005	\$ 443	\$ 283	63.8%
2006	\$ 472	\$ 326	69.2%
2007	\$ 494	\$ 398	80.5%

Source: AU90-A. The values in this table account only for Collision and Comprehensive "Optional" coverages. These two coverages make up approximately ninety-percent of the entire "Optional" coverages. More information on the reason for this choice is noted in the Appendix, Exhibit 3.

Section 3- Rising Automobile Premiums

3.1- Introduction

The price of automobile insurance – the premium – is affected by five components. First, there are the two costs of doing business: the claims costs (including adjustment expenses) and the administration expenses

(broker's commissions, overhead, etc.). Third, insurers earn income from the investment of equity and reserves (premium revenue that will eventually be used to pay claims). Fourth, a reasonable rate of profit must be added to net costs such that after-tax profits (tax rates are the fifth component) are sufficient for the owners of the insurance company.

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 5 through 7, we showed that the cost of claims rose at approximately the same rate as the price of premiums over the period 1996 to 2002. Thus, if there was a need for increased premiums in 2003 and 2004, it was *not* because the ratio of claims costs to premiums had changed over the preceding six years. Furthermore, average claims costs for Basic Coverages and All Coverages declined in both 2003 and 2004. Average claims costs for Basic Coverages, for example, fell 9.1 percent between 2002 and 2003 and by a further 14.5 percent between 2003 and 2004 – *before* the introduction of the MIR.

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 *Minor Injury Regulation* (MIR). Thus, it is possible that even though claims costs for Basic Coverages did not increase in 2003 and 2004, there may yet have been an increase in the component that was affected by the MIR. To investigate this possibility, we report the data in Tables 8 and 9, and Figure 7.

Table 8 reports yearly percentage change in average claims. The Third-Party-Liability product is split between the Bodily Injury and Property Damage components.

Table 8								
Alberta Private Passenger - Excluding Farmers- Automobile Insurance								
Average Claims Per Vehicle (per coverage type) & Percentage Change								
Year	Third-Party-Liability Claims				Accident Benefits	% Change	Other Coverages	% Change
	Bodily Injury	% Change	Property Damage	% Change				
1996	\$ 333		\$ 85		\$ 37		\$ 234	
1997	\$ 365	10%	\$ 86	0%	\$ 38	2%	\$ 196	-16%
1998	\$ 398	9%	\$ 89	4%	\$ 38	1%	\$ 226	15%
1999	\$ 419	5%	\$ 89	0%	\$ 41	9%	\$ 208	-8%
2000	\$ 413	-1%	\$ 98	11%	\$ 43	5%	\$ 239	15%
2001	\$ 410	-1%	\$ 95	-3%	\$ 42	-4%	\$ 232	-3%
2002	\$ 441	7%	\$ 108	14%	\$ 44	5%	\$ 248	7%
2003	\$ 400	-9%	\$ 101	-7%	\$ 38	-13%	\$ 243	-2%
2004	\$ 325	-19%	\$ 100	-1%	\$ 35	-7%	\$ 253	4%
2005	\$ 230	-29%	\$ 111	11%	\$ 37	5%	\$ 283	12%
2006	\$ 226	-2%	\$ 126	14%	\$ 36	-4%	\$ 326	15%
2007	\$ 207	-9%	\$ 131	3%	\$ 37	3%	\$ 398	22%

Source: AU90-A. "Other Coverages" in this table account for only collision and comprehensive "Optional Coverages as noted in the Appendix, Exhibit 3.

In Table 9 we adjust the data from Table 8 by the Alberta consumer price index (CPI)⁵. This provides a benchmark for comparing and analyzing the change in claims. It is seen that nominal and CPI-adjusted Bodily Injury claims have fallen continuously since 2002.

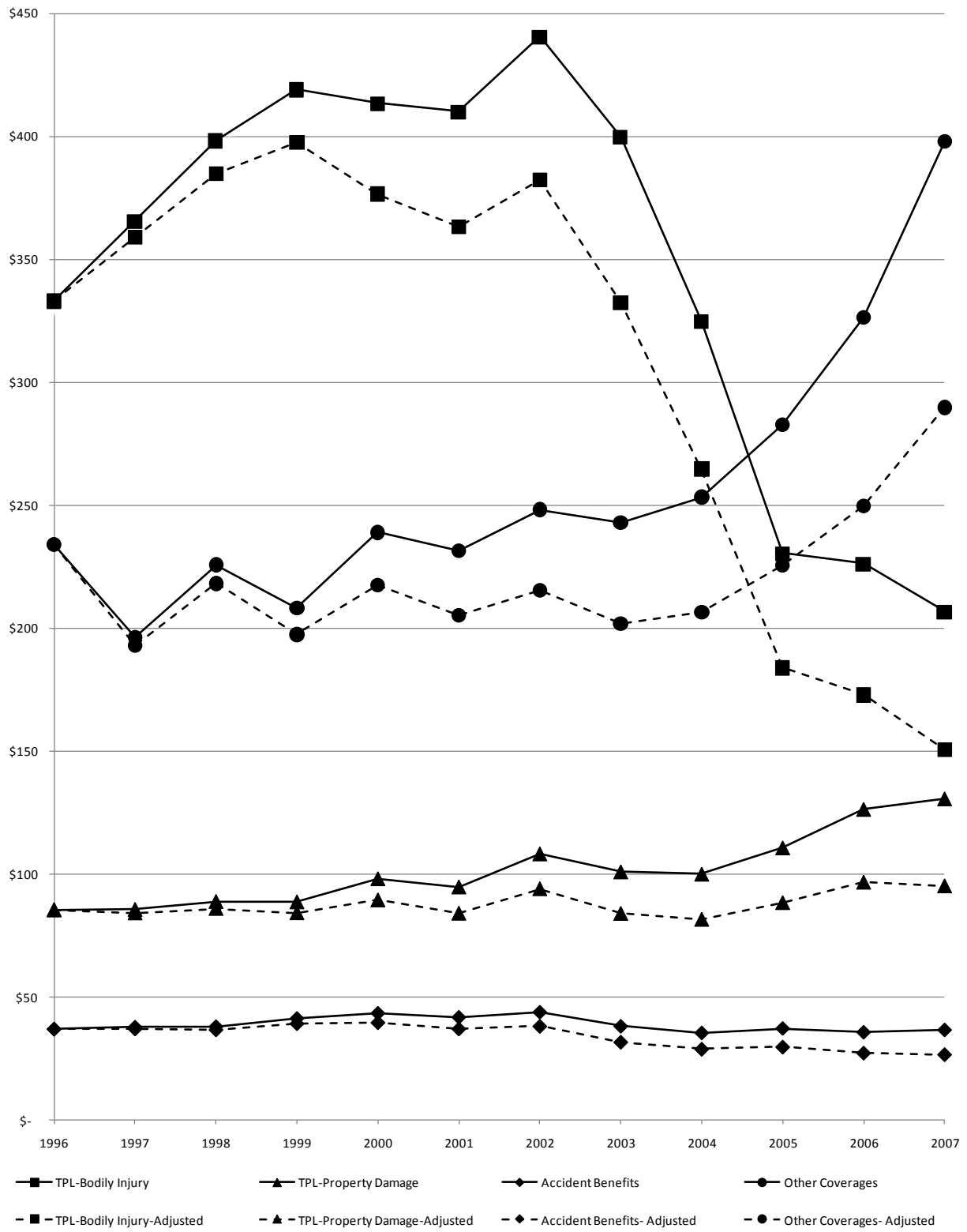
⁵ It should be noted that automobile insurance claims as a whole are not likely to track CPI as CPI is based on a basket of consumer goods whereas automobile insurance costs are related to the cost of fixing automobiles and indemnifying individuals for bodily injury-related damages.

Table 9								
Alberta Private Passenger - Excluding Farmers- Automobile Insurance								
Average Claims Per Vehicle (per coverage type) & Percentage Change								
Adjusted for Alberta's Consumer Price Index (1996 as base year)								
Year	Third-Party-Liability Claims				Accident Benefits	% Change	Other Coverages	% Change
	Bodily Injury	% Change	Property Damage	% Change				
1996	\$ 333		\$ 85		\$ 37		\$ 234	
1997	\$ 359	8%	\$ 84	-2%	\$ 37	0%	\$ 193	-18%
1998	\$ 385	7%	\$ 86	2%	\$ 37	-1%	\$ 218	13%
1999	\$ 397	3%	\$ 84	-2%	\$ 39	7%	\$ 197	-10%
2000	\$ 376	-5%	\$ 89	6%	\$ 40	1%	\$ 218	10%
2001	\$ 363	-4%	\$ 84	-6%	\$ 37	-6%	\$ 205	-6%
2002	\$ 382	5%	\$ 94	12%	\$ 38	3%	\$ 215	5%
2003	\$ 332	-13%	\$ 84	-11%	\$ 32	-17%	\$ 202	-6%
2004	\$ 265	-20%	\$ 81	-3%	\$ 29	-9%	\$ 206	2%
2005	\$ 184	-31%	\$ 88	8%	\$ 30	3%	\$ 225	9%
2006	\$ 173	-6%	\$ 97	9%	\$ 27	-8%	\$ 250	11%
2007	\$ 150	-13%	\$ 95	-2%	\$ 27	-2%	\$ 290	16%

Source: AU90-A. "Other Coverages" in this table account for only collision and comprehensive "Optional Coverages as noted in the Appendix, Exhibit 3.

The data from Tables 8 and 9 are reproduced in Figure 7 below.

Figure 7
Alberta Private Passenger-Excluding Farmers- Automobile Insurance
Average Claims Per Insured Vehicle
Adjusted and Unadjusted by Alberta CPI



In Tables 8 and 9, and Figure 7, it is seen that the claims for TPL-Bodily Injury increased only slightly relative to the other components of Basic Coverage prior to the MIR. For example, whereas claims for Bodily Injury increased by 32.3 percent between 1996 and 2002, claims for Property Damage increased by a similar percentage, 26.7.

We are led to ask, therefore, whether a change in some other element of the cost of insurance can explain the sudden increase in premiums that was observed in 2003 and 2004. In sections 3.3, 3.4, 3.5, and 3.6 we analyze administrative expenses, investment income, return on equity, and corporate tax rates.

3.3- Average Administrative Expenses

Table 10 reports that the ratio of administrative expenses to premiums (the expense ratio) decreased from 25.5 percent in 1996 to 23.8 percent in 2001. As average premiums increased only slightly over this period, the dollar value of expenses must have been decreasing or relatively stable. Furthermore, in the time period immediately prior to the introduction of the *Minor Injury Regulation*, 2002 and 2003, expense ratios fell further while premiums increased dramatically. It can be concluded, therefore, that changes in administrative expenses were not the source of the premium increases that occurred in 2002 and 2003.

Table 10	
Alberta Automobile Insurance	
Year	Expense Ratio
1996	25.5%
1997	25.5%
1998	25.5%
1999	25.0%
2000	24.7%
2001	23.8%
2002	22.3%
2003	22.4%
2004	24.4%
2005	23.1%
2006	23.0%
2007	22.9%

Source: See Exhibit 1

3.4- Investment Income Earned on Equity and Reserves

It is seen in Table 11 that the rate of return on investment that insurers earned on their equity and reserves declined almost continuously 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 \$42.91 increase in the 2003 premiums on Basic Coverage⁶. In fact, those premiums increased by \$213, from \$537 to \$750 (Table 6). This confirms that decreasing ROI was not the main impetus for the premium increases in 2002 and 2003.

Table 11		
Alberta Automobile Insurance		
Basic Coverages		
Year	ROI Rate	ROI (millions)
1996	10.0%	\$ 160
1997	10.5%	\$ 177
1998	8.5%	\$ 167
1999	7.4%	\$ 155
2000	8.8%	\$ 192
2001	7.6%	\$ 176
2002	5.5%	\$ 131
2003	6.2%	\$ 169
2004	5.5%	\$ 165
2005	5.8%	\$ 176
2006	5.9%	\$ 186
2007	5.7%	\$ 195

Source: OSFI P&C-1, P&C-2, and Exhibit 2

We examined the aggregate investment portfolio of Canadian property and casualty insurers over the time period 1996-2007 and found the composition of debt/equity to be fairly constant. The predominant investment holding was debt. The data are presented in the Appendix, Exhibit 4.

⁶ This calculation assumes that the expense ratio, premium leverage ratio, reserve to equity ratio, underwriting income tax rate, 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.

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 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),⁷ Dr. Phillips reported that if he was advising a U.S. property casualty insurer, with an 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 and Dr. Mary Kelly, in a presentation to the Alberta 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.

⁷ "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.

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.

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; the AIRB also considers a 3 percent return on investment (on the investment of equity and reserves) to be a reasonable assumption.⁸ Using a 2 to 1 premium to equity ratio assumption and an income tax rate (overall) of 33.62 percent, this translates to an 11.3 percent after-tax return on equity (or 17 percent pre-tax).⁹ This suggests that the AIRB considers an 11.3 percent after-tax return on equity to be sufficient for Basic Coverages.

Excluding the report by Merle Taylor, which did not give an exact range or recommendation, the average of the eight suggestions, including OSFI's historical data, for a reasonable return-on-equity for automobile insurance is 12.7 percent.¹⁰

⁸ As stated in the July 31, 2008 "Annual Industry-Wide Adjustment of Rates for Basic Coverages, Effective November 1, 2008, RE: Section 4 of the Automobile Insurance Premiums Regulation, Alberta Automobile Insurance Rate Board, Board Decision Report, Order No: 01-08."

⁹ The 2 to 1 premium to equity ratio assumption and the assumption of a 33.62 percent income tax rate are taken directly from page 18 of Oliver Wyman's May 31, 2005 "Actuarial Analysis for Industry-wide Rate Level Adjustment" effective November 1, 2005 prepared for the AIRB. The same method was used in Oliver Wyman's 2006 actuarial analysis for the AIRB (pages 21 & 23) as well as the 2007 actuarial analysis (pages 25 & 28).

¹⁰ 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 3.1 percent, implying that about 68 percent of recommendations are within the range of 9.7 to 15.8 percent.

3.6- Corporate Tax Rates

Table 12 displays tax rates (federal and provincial combined, as applicable for insurers) for Alberta automobile insurance for the years 1996 through 2007. It can be seen that tax rates have decreased continuously since 2000. A reduction in taxes can create space for a reduction in premiums.

More specifically to our question, we note that the continuous decrease in tax rates directly implies that tax rates were not the reason for the premium increases in 2002 and 2003.

Table 12		
Alberta Automobile Insurance		
Year	Tax Rates	
	Underwriting	Investment
1996	45%	41%
1997	45%	40%
1998	45%	42%
1999	45%	42%
2000	45%	39%
2001	42%	38%
2002	39%	38%
2003	37%	31%
2004	35%	29%
2005	34%	26%
2006	32%	25%
2007	31%	21%

Source: See Exhibit 5

3.7- The Reason for Premium Increases

In the absence of regulatory premium controls or regulatory cost controls, premium rates and administrative costs are the prime 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 leading up to the *Minor Injury Regulation*.

As also shown above, administrative expenses did not increase but, rather, decreased in the time leading up to the *Minor Injury Regulation*.

Although investment returns decreased in the time leading up to the *Minor Injury Regulation*, their effect on the increase in premiums was minor.

As tax rates on underwriting and investment income decreased almost continuously over the time period analyzed, changes in tax rates were not the reason for premium increases.

ROE for Basic Coverages averaged -1.1 percent per year in the period 1996 to 2002 (7.2 percent for All Coverages). During this same period, average premiums for Basic Coverage only increased by 5.6 percent per year on average (4.4 percent per year on average for All Coverages). This premium deficiency (the difference between premium charged and premium required to reach a reasonable rate of return) appears to have been the primary impetus for the sharp increase in premiums that occurred in 2002, as the “soft” market ended and a “hard” market began.

We estimate that without the premium increases in 2002 and 2003, ROE on Basic Coverages would have been -3.4 percent (in 2003).

Section 4- Removing the Minor Injury Regulation: Premiums and ROE

4.1- Introduction

We have shown in this report that, by 2003, the automobile insurance industry in Alberta was earning an after-tax rate of return on equity, ROE, that exceeded 20 percent. As experts state that a reasonable target rate of return for automobile insurance is between 8.1 and 20 percent, and as the AIRB currently sets a target ROE of 11.3 percent, it does not appear that it was necessary to introduce government regulation to reduce costs. Furthermore, we have also shown that the costs of bodily injury claims did not rise significantly more rapidly than did the costs of other types of claims (in the time period analyzed). Accordingly, even if there had been an argument for controlling claims costs, it is not clear that the cost of bodily injury claims, particularly those involving soft-tissue injuries, should have been singled out for suppression.

In this light, we ask what the impact would be of maintaining the decision in *Morrow v. Zhang* (2008), in which the court struck down the *Minor Injury Regulation*. Specifically, we estimate what the effect of this decision would be: (a) on premiums, if the after-tax rate of return on equity was to be held constant at the 2007 level; (b) on premiums, if firms were to earn an after-tax rate of return on equity of 12 percent; and (c) on profits, if premiums were to be held constant at their current rates¹¹.

4.2- The Effect on Premiums if the Minor Injury Regulation is Struck: Rate of Return on Equity Remains at 2007 Level

In Alberta, the Automobile Insurance Rate Board (AIRB) currently controls premiums for Basic Coverages and engages in an annual adjustment of these premium rates. Accordingly, we use the AIRB's methodology to estimate the effect that an increase in claims costs would have on premiums. In preparing this estimate, we make no claims with regards to the validity of the methodology used by the Alberta Automobile Insurance Rate Board and its consulting actuary, Oliver Wyman. Rather, we take the methodology as given and we use it to estimate what the "required" premium increase for Basic Coverages would be if the *Minor Injury Regulation* was removed permanently and the overall rate of return on equity was to be maintained at its 2007 level.

We do not calculate the effect of removing any of the other reforms¹² that were introduced in 2003/ 2004. That is, we control for these other reforms by assuming that they will continue to be in place.

¹¹ This estimate makes use of both the AIRB's methodology and that of the Cheng Report. Note that the 2008 Industry-Wide-Adjustment of rates allowed for an increase of 50 percent of the estimated required increase in premiums (due to the *Morrow v. Zhang* decision). We are, therefore, considering what profits would be if rates were not increased by the additional 50 percent.

¹² The other major reforms to the Alberta automobile insurance market since 2003/2004 were the *Insurance Amendment Act, 2003 (no.2)*, the *Automobile Accident Insurance Benefits Regulation (ABR)* (Alberta Reg. 352/1972; amended 121/2004), and

We use the assumptions and methodology found in the 2005, 2006, 2007, and 2008 Actuarial Analyses prepared for the AIRB. These reports analyze claims experience and make an estimate of the required annual premium change for Basic Coverages.

The AIRB adds a 7 percent profit loading to the Basic Coverages premium. It then makes a series of assumptions regarding ratios and investment returns to arrive at the conclusion that a 7 percent profit loading leads to approximately an 11.3 percent after-tax ROE.

In the AIRB's July 25, 2008 Addendum to its May 30, 2008 Actuarial Analysis for Industry-Wide Rate Adjustment (prepared by Oliver Wyman), a two-pronged approach was taken to accommodate the differing viewpoint held by the Insurance Bureau of Canada (IBC).

Whereas the AIRB's actuary opted for a shorter time period of analysis to establish future trends in loss costs, the IBC's actuary opted for a longer duration of time resulting in a more pessimistic trend (IBC's methodology resulted in higher estimates of future claims).

The two-pronged approach was described in the July 25, 2008 addendum as "*Scenario A*" (the AIRB's trend variables) and "*Scenario B*" (a combination of the IBC actuary's position and the AIRB actuary's position). We have therefore made two corresponding estimates.

Using the AIRB's methodology, and controlling for other reforms beside the *Minor Injury Regulation* (controlling for the *gross to net income* reform and the *collateral income* reform), we estimate that the required average premium increase for Basic Coverages, due to the removal of the *Minor Injury Regulation*, would be \$123.36/year in *Scenario A* and \$137.54/year in *Scenario B*. Note, however, that the AIRB allowed for approximately 50 percent of this required increase in its 2008 industry-wide-adjustment. (The complete analysis is available in the Appendix, Exhibits 7, 8 & 9.)

These estimates are close to Oliver Wyman's estimates of an 18 percent increase for *Scenario A* and a 19.1 percent increase for *Scenario B*, approximately equal to \$103.50 and \$109.83, respectively.¹³ The AIRB rounded up to arrive at a finding of a 20 percent required premium increase.¹⁴ Given the pending appeal of the *Morrow v. Zhang* decision, the AIRB approved only half of the 20 percent increase—it approved a 10 percent increase in response to the *Morrow v. Zhang* decision.¹⁵

Therefore, assuming that half of the increase has already occurred, and using our estimates as a baseline, we estimate a premium increase of \$61.68/year for *Scenario A* (\$68.77/year for *Scenario B*), to offset the *Morrow v. Zhang* decision (assuming it is not overturned) such that profits remain unchanged. Averaging these two increases allows us to reach an estimate of \$65.23.

the *Diagnostic & Treatment Protocols Regulation* (DTPR) (Alberta Reg. 122/2004). Further, there was a premium freeze order, a premium rollback, and other premium controls and reductions since 2003.

¹³ Assuming an initial premium of \$575

¹⁴ As noted in the AIRB Annual Industry-Wide Adjustment of Rates for Basic Coverage, Order No. 01-08, July 31, 2008, p.3, p.10, p.11, p.15,

¹⁵ Given that the AIRB also concluded that premiums were otherwise redundant by 5 percent, its 01-08 Order allowed for a uniform increase in Basic Coverage premiums by 5 percent (10 percent minus 5 percent).

We note a number of caveats to our estimates. Some injured victims from the past (when the MIR was in place) may have been waiting to file claims and may now do so, potentially increasing claims from prior years. In a competitive market, insurers cannot re-coup these past losses from current premium increases.

Also, if claims were held off from being filed because claimants were waiting for the removal of the *Minor Injury Regulation*, the frequency of claims from prior years may not be accurate. As such, the frequency may actually have been larger and may be larger in the future.¹⁶ This suggests that the required premium increase could be higher than what we have calculated.

We also note that consumers will not 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. This is, however, subject to the regulatory control of the AIRB.

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. We have also assumed that insurers will not alter their capital structure and that the assumptions and methodology of the Alberta Automobile Insurance Rate Board would remain unchanged.

4.3- The Effect on Premiums if the Minor Injury Regulation is Struck:Rate of Return on Equity is Held at 12 Percent

Employing the methodology outlined in Section 4.2 (and in Exhibits 11 and 12), but now assuming that the after-tax rate of return on equity is held at the 12 percent level recommended by many experts, we calculate that premiums could be *lowered* by \$2.00 on Basic Coverages and by \$56.00 on All Coverages.¹⁷ That is, it is our assessment that automobile insurers' profits are currently high enough that their ROE would remain at the "acceptable" level of 12 percent, even after absorbing the increase in claims costs that would arise if the MIR was struck down.

4.4- The Effect on Insurer Profits if the Minor Injury Regulation is Struck and Premiums Held Constant at Current Levels

As the Alberta Automobile Insurance Rate Board (AIRB) has so-far approved only half of its recommend premium increase in response to the *Morrow v. Zhang* decision, it should be instructive to consider what Alberta automobile insurance profits would be, using the Cheng Report methodology, if premiums are held constant at this current level and the decision in *Morrow v. Zhang* remains unchanged.

¹⁶ We have, however, added a 0.5% increase in trend because of the removal of the MIR, see Exhibit 7, as done by the AIRB's actuary.

¹⁷ Premiums would fall from \$621 to \$619 on Basic Coverages and from \$1,020 to \$964 on All Coverages.

We used the AIRB's annual rate adjustment methodology to estimate the increase in average claims costs per vehicle and incorporated this additional cost (as calculated in the Appendix, Exhibit 10) into the data from 2007.¹⁸ We also added the estimated premium increase. We then used the Cheng Report methodology and ratios from the year 2007 to make an estimate of what insurer profitability would be should the MIR remain removed and premiums held at current levels.

Using this methodology, we estimate insurer after-tax ROE for Basic Coverages to be 20 percent for *Scenario A* (19.5 percent for *Scenario B*) should the *Morrow v. Zhang* decision remain unchanged and premiums held constant. For All Coverages we estimate 17.3 percent for *Scenario A* (17 percent for *Scenario B*) – leaving the claims ratio at the 2007 rate plus an additional factor for the increase in claims as well as an additional increase in premiums (50 percent of the AIRB estimated requirement) as noted in the AIRB order 01-08.¹⁹ 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 2007 (using the Cheng Report methodology). The complete analysis is available in the Appendix, Exhibits 10, 11 & 12.

Taking the averages of *Scenarios A* and *B*, we therefore estimate that if premiums are held at their current rates, and the MIR remains revoked, profits for Basic Coverages will fall from 24.3 percent to 19.8 percent ROE. For All Coverages we estimate that profits would fall from 19.8 percent to 17.2 percent ROE.

¹⁸ We did not discount the estimated claims cost to 2007.

¹⁹ This is estimated by leaving the claims ratio at the 2007 rate plus an additional factor for the increase in claims, as well as an increase in the premium level by 50 percent as allowed by the AIRB in its Order 01-08.

Conclusion

The purpose of this report has been to provide objective evidence concerning the impact of the Alberta *Minor Injury Regulation* on the Alberta automobile insurance market. Our primary findings are:

- Insurer profitability from private passenger Alberta Basic Coverages (Third-Party-Liability and Accident Benefits coverage) was below target from 1996 through 2002; but above target from 2003 through 2007.
- Approximately 80 percent of all automobile insurance expenditure outflows went to claims and adjustment expenses during the years 1996 through 2007. This ratio was fairly constant.
- Prior to the implementation of the *Minor Injury Regulation*, rising average insurance premiums for Alberta private passenger Third-Party-Liability and Accident Benefits coverage (14 percent increase in 2002 and 17 percent in 2003) were likely as a result of a premium deficiency (insufficient premiums). That is, insurers raised premiums because their return on equity was below their target rate. We estimate that without the premium increases in 2002 and 2003, the average rate of return on equity would have been -3.4 percent in 2003 on Basic Coverages.
- Alberta private passenger Third-Party-Liability and Accident Benefits claims did not increase substantially in the period 2000 through 2003. During this time, (the period immediately *prior* to the introduction of the *Minor Injury Regulation*), Bodily Injury claims actually *decreased* from an average of \$413 per vehicle to \$400 per vehicle.
- Using the methodology of the Alberta Automobile Insurance Rate Board (AIRB) and noting that the AIRB 2008 adjustment allowed for a partial increase in premiums in response to the removal of the *Minor Injury Regulation* (MIR) we estimate that if the MIR was struck down premiums on Basic Coverages would have to increase by \$65.23 per year in order to maintain ROE at 2007 levels; and would have to *decrease* by \$2.00 per year in order to produce an ROE of 12 percent.
- Alternatively, if the MIR was struck down and the Alberta Automobile Insurance Rate Board forced insurers to hold premiums constant at their current levels, we estimate that insurer ROE for Basic Coverages would fall to 19.8 percent (17.2 percent for All Coverages) using 2007 data, assumptions and the Cheng Report methodology as noted.

Appendix

To:

**“Alberta’s Minor Injury Regulation:
Automobile Insurance Profits, Premium Rates, and Costs”**

By:

Jason Strauss

&

Christopher Bruce

Economica Ltd.

Prepared August 11, 2009 for:

The Canadian Bar Association

**Alberta 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)	(2)	(3)	(4)	(5)	(6)		(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		Equity	Investment Income \$(millions)			Total Profit Pre-Tax		Tax Rate		Total Profit Post-Tax		Year		
					%	\$(millions)				Capital	Operations		Operations	Total	\$(millions)	ROE	Underwriting	Investment	\$(millions)	ROE				
1996	1,037	86.3%	25.5%	111.8%	-11.8%	(123)	1.16	892	1.86	10.0%	10.0%	89	166	255	132	14.8%	44.6%	40.9%	83	9.3%	1996			
1997	1,100	83.1%	25.5%	108.6%	-8.6%	(95)	1.16	946	1.75	10.5%	10.5%	99	174	273	176	19.4%	44.6%	40.0%	111	12.1%	1997			
1998	1,197	87.4%	25.5%	112.9%	-12.9%	(155)	1.09	1,094	1.74	8.5%	8.5%	93	161	254	99	9.7%	44.6%	41.6%	63	6.2%	1998			
1999	1,227	86.7%	25.0%	111.7%	-11.7%	(143)	1.04	1,184	1.66	7.4%	7.4%	88	147	235	91	8.0%	44.6%	42.3%	56	4.9%	1999			
2000	1,287	91.1%	24.7%	115.8%	-15.8%	(204)	1.05	1,223	1.68	8.8%	8.8%	108	182	290	87	7.2%	44.6%	38.9%	65	5.4%	2000			
2001	1,405	86.2%	23.8%	110.0%	-10.0%	(140)	1.15	1,227	1.82	7.6%	7.6%	94	171	264	124	10.1%	42.1%	37.6%	83	6.8%	2001			
2002	1,612	82.9%	22.3%	105.2%	-5.2%	(83)	1.39	1,159	2.04	5.5%	5.5%	64	131	195	112	9.3%	39.2%	38.5%	69	5.8%	2002			
2003	1,868	67.2%	22.4%	89.6%	10.4%	193	1.43	1,306	2.02	6.2%	6.2%	81	164	245	439	35.6%	36.7%	31.1%	291	23.6%	2003			
2004	1,960	59.4%	24.4%	83.8%	16.2%	318	1.31	1,500	1.92	5.5%	5.5%	83	160	243	561	40.0%	34.9%	29.1%	380	27.1%	2004			
2005	1,885	59.1%	23.1%	82.2%	17.8%	335	1.14	1,649	1.90	5.8%	5.8%	96	182	277	613	38.9%	33.6%	25.8%	428	27.2%	2005			
2006	1,983	64.2%	23.0%	87.2%	12.8%	253	1.08	1,840	1.79	5.9%	5.9%	109	195	305	558	32.0%	32.5%	25.3%	398	22.8%	2006			
2007	2,113	68.3%	22.9%	91.2%	8.8%	186	1.00	2,104	1.74	5.7%	5.7%	121	210	331	517	26.2%	31.0%	21.0%	390	19.8%	2007			

Brief Description of Each Column including Data Source

Col. No.	Description	Source
(1)	Year in which accidents occurred and to which premiums were charged.	
(2)	Premiums charged for specific Year for the coverage(s) as noted for Private Passenger Alberta automobile insurance excluding farmers.	AU90-A, 1987, 1988-2007
(3)	Claims expressed as % of premiums in column (2).	AU90-A, 1987, 1988-2007
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2).	Cheng report for 1998. Used 1998 for years 1997,1996. Used IBC Expense Survey, as disclosed by AIRB in Oliver Wyman 30 May 2008 Report for Alberta for 1999 through 2004. Used selection in AIRB Rate Level Adjustment report (effective November 1st of prior year) for years 2005-2007. The AIRB's selection for 2004 equalled the IBC Expense Survey number for that year of 24.4%.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.	Calculated
(6)	Equals premiums less claims and expenses as % of premiums.	Calculated
(7)	Equals premiums less claims and expenses. This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to Alberta "All Coverages" automobile insurance.	Calculated OSFI P&C Data
(8)		
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" Alberta automobile insurance risk.	Calculated
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.	Reserves have been estimated as a function of equity as per the Cheng Report. The ratio of reserves to equity is found from the OSFI data by taking the sum of unpaid claims and unearned premium reserve minus reinsurance unpaid claims (and adjustment expenses) minus reinsurance unearned premium reserve, all divided by the equity at year-end.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.	OSFI P&C Data
(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.	Calculated
(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).	Calculated
(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).	Calculated
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.	Canada Revenue Agency & Alberta Finance for years 2000 through 2007. Cheng Report for years 1998 & 1999. 1996 & 1997=1998. There were a series of decreases in the Alberta corporate tax rate that occurred on April 1st of 2001,2002,2003,2004 & 2006. A weighted average of the tax rates in place in those years was used.
(19)	See note for column (18).	Exhibit 5
(20)	Same as column (16) except after tax.	Calculated
(21)	Same as column (17) except after tax.	Calculated
(22)	Same as column (1).	Calculated

Notes

Some of the 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.

Alberta 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)	(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 (-) %	Underwriting Profit (+) / Loss (-) \$(millions)	Premium Leverage	Allocated Capital/Equity \$(millions)	Reserves as % of Equity	OSFI Yield Rates Capital	OSFI Yield Rates Operations	Investment Income \$(millions) Equity	Investment Income \$(millions) Operations	Investment Income \$(millions) Total	Total Profit Pre-Tax \$(millions)	Total Profit Pre-Tax ROE	Tax Rate Underwriting	Tax Rate Investment	Total Profit Post-Tax \$(millions)	Total Profit Post-Tax ROE	Year
1996	652	98.9%	25.5%	124.4%	-24.4%	(159)	1.16	560	1.86	10.0%	10.0%	56	104	160	1	0.1%	44.6%	40.9%	6	1.1%	1996
1997	712	98.7%	25.5%	124.2%	-24.2%	(172)	1.16	612	1.75	10.5%	10.5%	64	112	177	4	0.7%	44.6%	40.0%	11	1.8%	1997
1998	785	100.0%	25.5%	125.5%	-25.5%	(200)	1.09	718	1.74	8.5%	8.5%	61	106	167	(33)	-5.0%	44.6%	41.6%	(13)	-2.0%	1998
1999	810	102.2%	25.0%	127.2%	-27.2%	(220)	1.04	781	1.66	7.4%	7.4%	58	97	155	(65)	-8.7%	44.6%	42.3%	(32)	-4.3%	1999
2000	852	103.3%	24.7%	128.0%	-28.0%	(239)	1.05	810	1.68	8.8%	8.8%	72	121	192	(47)	-5.9%	44.6%	38.9%	(15)	-1.9%	2000
2001	935	97.1%	23.8%	120.9%	-20.9%	(196)	1.15	816	1.82	7.6%	7.6%	62	114	176	(20)	-2.4%	42.1%	37.6%	(4)	-0.4%	2001
2002	1,085	92.6%	22.3%	114.9%	-14.9%	(162)	1.39	780	2.04	5.5%	5.5%	43	88	131	(31)	-3.9%	39.2%	38.5%	(18)	-2.2%	2002
2003	1,285	71.8%	22.4%	94.2%	5.8%	74	1.43	898	2.02	6.2%	6.2%	56	113	169	243	28.9%	36.7%	31.1%	163	19.4%	2003
2004	1,332	60.3%	24.4%	84.7%	15.3%	204	1.31	1,020	1.92	5.5%	5.5%	57	109	165	369	38.5%	34.9%	29.1%	250	26.1%	2004
2005	1,198	57.6%	23.1%	80.7%	19.3%	232	1.14	1,048	1.90	5.8%	5.8%	61	115	176	408	39.5%	33.6%	25.8%	285	27.5%	2005
2006	1,207	62.5%	23.0%	85.5%	14.5%	175	1.08	1,120	1.79	5.9%	5.9%	67	119	186	360	33.2%	32.5%	25.3%	257	23.7%	2006
2007	1,245	61.7%	22.9%	84.6%	15.4%	192	1.00	1,240	1.74	5.7%	5.7%	71	124	195	387	32.8%	31.0%	21.0%	286	24.3%	2007

Brief Description of Each Column including Data Source

Col. No.	Description	Source
(1)	Year in which accidents occurred and to which premiums were charged.	
(2)	Premiums charged for specific Year for the coverage(s) as noted for Private Passenger Alberta automobile insurance excluding farmers.	AU90-A.1987, 1988-2007
(3)	Claims expressed as % of premiums in column (2).	AU90-A.1987, 1988-2007
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2).	Cheng report for 1998. Used 1998 for years 1997,1996. Used IBC Expense Survey, as disclosed by AIRB in Oliver Wyman 30 May 2008 Report for Alberta for 1999 through 2004. Used selection in AIRB Rate Level Adjustment report (effective November 1st of prior year) for years 2005-2007. The AIRB's selection for 2004 equalled the IBC Expense Survey number for that year of 24.4%.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.	Calculated
(6)	Equals premiums less claims and expenses as % of premiums.	Calculated
(7)	Equals premiums less claims and expenses.	Calculated
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to Alberta "All Coverages" automobile insurance.	OSFI P&C Data
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" Alberta automobile insurance risk.	Calculated
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.	Reserves have been estimated as a function of equity as per the Cheng Report. The ratio of reserves to equity is found from the OSFI data by taking the sum of unpaid claims and unearned premium reserve minus reinsurance unpaid claims (and adjustment expenses) minus reinsurance unearned premium reserve, all divided by the equity at year-end.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.	OSFI P&C Data
(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.	Calculated
(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).	Calculated
(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).	Calculated
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.	Canada Revenue Agency & Alberta Finance for years 2000 through 2007. Cheng Report for years 1998 & 1999. 1996 & 1997=1998. There were a series of decreases in the Alberta corporate tax rate that occurred on April 1st of 2001,2002,2003,2004 & 2006. A weighted average of the tax rates in place in those years was used.
(19)	See note for column (18).	Exhibit 5
(20)	Same as column (16) except after tax.	Calculated
(21)	Same as column (17) except after tax.	Calculated
(22)	Same as column (1).	Calculated

Notes

Some of the 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.

**Alberta 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)	(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		Year
					%	\$(millions)				Capital	Operations	Equity	Operations	Total	\$(millions)	ROE	Underwriting	Investment	\$(millions)	ROE	
1996	386	67.5%	25.5%	93.0%	7.0%	27	1.16	332	1.86	10.0%	10.0%	33	62	95	122	36.7%	44.6%	40.9%	71	21.4%	1996
1997	388	57.7%	25.5%	83.2%	16.8%	65	1.16	334	1.75	10.5%	10.5%	35	61	96	162	48.6%	44.6%	40.0%	94	28.3%	1997
1998	411	65.9%	25.5%	91.4%	8.6%	35	1.09	376	1.74	8.5%	8.5%	32	55	87	123	34.6%	44.6%	41.6%	71	19.9%	1998
1999	418	61.0%	25.0%	86.0%	14.0%	58	1.04	403	1.66	7.4%	7.4%	30	50	80	138	35.5%	44.6%	42.3%	78	20.1%	1999
2000	435	71.4%	24.7%	96.1%	3.9%	17	1.05	413	1.68	8.8%	8.8%	37	62	98	115	28.2%	44.6%	38.9%	69	17.0%	2000
2001	470	67.7%	23.8%	91.5%	8.5%	40	1.15	410	1.82	7.6%	7.6%	31	57	88	128	31.1%	42.1%	37.6%	78	19.0%	2001
2002	527	67.5%	22.3%	89.8%	10.2%	54	1.39	379	2.04	5.5%	5.5%	21	43	64	118	29.8%	39.2%	38.5%	72	18.2%	2002
2003	583	60.8%	22.4%	83.2%	16.8%	98	1.43	408	2.02	6.2%	6.2%	25	51	77	175	44.4%	36.7%	31.1%	115	29.2%	2003
2004	628	59.9%	24.4%	84.3%	15.7%	98	1.31	481	1.92	5.5%	5.5%	27	51	78	176	39.7%	34.9%	29.1%	119	26.9%	2004
2005	686	63.8%	23.1%	86.9%	13.1%	90	1.14	600	1.90	5.8%	5.8%	35	66	101	191	35.4%	33.6%	25.6%	135	24.9%	2005
2006	776	69.2%	23.0%	92.2%	7.8%	61	1.08	720	1.79	5.9%	5.9%	43	76	119	180	27.3%	32.5%	25.3%	130	19.7%	2006
2007	868	80.5%	22.9%	103.4%	-3.4%	(30)	1.00	864	1.74	5.7%	5.7%	50	86	136	106	13.4%	31.0%	21.0%	87	11.0%	2007

Brief Description of Each Column including Data Source

Col. No.	Description	Source
(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 Alberta automobile insurance, excluding farmers.	AU90-A.1987, 1988-2007
(3)	=(collision & comprehensive average claim per vehicle) / (collision and comprehensive average premium per vehicle).	AU90-A.1987, 1988-2007
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2).	Cheng report for 1998. Used 1998 for years 1997,1996. Used IBC Expense Survey, as disclosed by AIRB in Oliver Wyman 30 May 2008 Report for Alberta for 1999 through 2004. Used selection in AIRB Rate Level Adjustment report (effective November 1st of prior year) for years 2005-2007. The AIRB's selection for 2004 equalled the IBC Expense Survey number for that year of 24.4%.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.	Calculated
(6)	Equals premiums less claims and expenses as % of premiums.	Calculated
(7)	Equals premiums less claims and expenses.	Calculated
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to Alberta "All Coverages" automobile insurance.	OSFI P&C Data
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" Alberta automobile insurance risk.	Calculated
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.	Reserves have been estimated as a function of equity as per the Cheng Report. The ratio of reserves to equity is found from the OSFI data by taking the sum of unpaid claims and unearned premium reserve minus reinsurance unpaid claims (and adjustment expenses) minus reinsurance unearned premium reserve, all divided by the equity at year-end.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.	OSFI P&C Data
(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.	Calculated
(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).	Calculated
(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).	Calculated
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.	Canada Revenue Agency & Alberta Finance for years 2000 through 2007. Cheng Report for years 1998 & 1999. 1996 & 1997=1998. There were a series of decreases in the Alberta corporate tax rate that occurred on April 1st of 2001,2002,2003,2004 & 2006. A weighted average of the tax rates in place in those years was used.
(19)	See note for column (18).	Exhibit 5
(20)	Same as column (16) except after tax.	Calculated
(21)	Same as column (17) except after tax.	Calculated
(22)	Same as column (1).	Calculated

Notes

Some of the 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.

In the body of the report, the average premium for Optional Coverages only includes collision and comprehensive coverage. These two coverages make-up approximately ninety percent of the entire other/ optional coverages (in terms of revenue). In this Exhibit 3 we have found the total premiums earned by subtracting Basic Coverages premiums earned from total coverages premiums earned (as aggregated by IBC in AU90-A). We have then imposed the claims ratio from collision and comprehensive coverages onto this earned premium. Although the total earned premium revenue from Optional Coverages plus Basic Coverages properly equals the total earned premium from All Coverages, the average premium (per vehicle) from Optional Coverages (as found in the body of the report) plus the average premium from Basic Coverages (also found in the body of the report) will not equal the average premium for All Coverages- this is because not all consumers purchase the optional coverage.

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	2007
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	32,360,117	36,582,357	39,809,617
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	7,736,401	9,132,212	9,550,633
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	1,184,876	1,331,295	1,650,289
Total	18,185,675	19,570,460	20,610,901	21,691,312	22,476,150	22,500,310	24,923,937	30,760,361	36,259,768	41,281,394	47,045,864	51,010,539

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%	78.4%	77.8%	78.0%
Preferred and Common Shares	24.3%	27.7%	28.2%	27.2%	27.9%	29.0%	25.5%	20.9%	19.2%	18.7%	19.4%	18.7%
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%	3.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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 2007. 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	2001
Underwriting Operations							
Premiums Written							
(1)	Direct	12,167,972	12,536,727	12,831,829	12,949,562	13,924,432	15,485,238
(2)	Reinsurance Assumed	2,233,905	2,081,584	2,106,297	2,408,274	2,596,973	2,953,166
(3)	Reinsurance Ceded	3,173,867	3,074,042	3,159,885	3,601,769	3,777,861	4,851,395
(4)	Net Premiums Written	11,228,010	11,544,269	11,778,241	11,756,067	12,743,544	13,587,009
(5)	Decrease (Increase) in Unearned Premiums	(178,258)	(157,688)	(216,921)	(139,701)	(493,508)	(518,632)
(6)	Net Premiums Earned	11,049,752	11,386,580	11,561,320	11,616,366	12,250,036	13,068,377
(7)	Service Charges	41,210	43,977	46,326	48,318	50,891	59,284
(8)	Other	9,425	(4,393)	(7,284)	(8,122)	(5,799)	(8,370)
(9)	Total Underwriting Revenue	11,100,387	11,426,164	11,600,362	11,656,562	12,295,128	13,119,291
(10)	Net Claims and Adjustment Expenses	7,924,749	7,924,345	8,285,089	8,282,561	9,307,525	10,279,561
Acquisition Expenses							
(11)	Commissions	1,675,160	1,767,288	1,812,116	1,851,319	1,847,222	1,945,025
(12)	Taxes	390,667	395,373	404,620	409,362	448,702	478,425
(13)	Other	631,124	728,526	722,132	652,399	659,804	677,126
(14)	General Expenses	809,268	799,699	981,180	999,733	1,008,673	948,218
(15)	Total Claims and Expenses	11,430,968	11,615,231	12,205,137	12,195,374	13,271,926	14,328,355
(16)	Premium Deficiency Adjustments	(2,153)	(746)	(1,379)	479	(884)	480
(17)	Underwriting Income (Loss)	(328,427)	(188,320)	(603,396)	(539,291)	(975,914)	(1,209,544)
Investment Operations							
(18)	Income	1,278,737	1,244,849	1,238,297	1,273,020	1,345,407	1,348,661
(19)	Realized Gains (Losses)	618,091	896,010	522,672	331,731	749,357	406,261
(20)	Expenses	35,337	39,277	40,792	44,883	56,305	61,186
(21)	Net Investment Income	1,861,491	2,101,582	1,720,177	1,559,868	2,038,459	1,693,736
Other Revenue and Expenses							
(22)	Income (Loss) from Ancillary Operations net of Expenses	4,321	2,842	3,636	3,905	5,750	2,330
(23)	Share of Net Income (Loss) of Subsidiaries and Affiliates	15,030	13,281	1,818	8,539	14,504	(9,967)
(24)	Gains (Losses) from Fluctuations in Foreign Exchange Rates	149	8,863	14,415	(9,991)	8,937	4,050
(25)	Other	48,876	61,976	35,696	29,327	8,294	19,718
(26)	Income (Loss) before Income Taxes and Extraordinary Items	1,601,440	2,000,224	1,172,346	1,052,357	1,100,030	500,323
Income Taxes							
(27)	Current	639,953	725,346	265,530	449,964	376,416	93,921
(28)	Future	(54,721)	37,422	99,918	(98,278)	28,485	67,572
(29)	Total Income Taxes	585,232	762,768	365,448	351,686	404,901	161,493
(30)	Extraordinary Items net of Income Taxes	0	130	-	-	-	-
(31)	Net Income (Loss) for the Year	1,016,207	1,237,586	806,898	700,671	695,129	338,830
(32)	Underwriting Margin	-3.0%	-1.7%	-5.2%	-4.6%	-8%	-9.3%
(33)	Effective Tax Rate on Underwriting Income	44.6%	44.6%	44.6%	44.6%	44.6%	42.1%
(34)	Adjustment Factor	1.008	1.008	1.008	1.008	1.008	1.008
(35)	Calculated Tax	643,726	791,315	468,651	433,349	372,237	134,109
(36)	Capital Tax	17,044	18,815	20,008	22,228	22,853	23,447
(37)	Difference	75,539	47,361	123,212	103,891	(9,811)	(3,937)
(38)	Tax on Investment Income	790,270	875,343	737,887	673,873	807,495	643,327
(39)	Tax Rate on Investment Income	41%	40%	42%	42%	39%	38%
(40)	assumption:	capital gain inclusion rate:		1996-1999=	75%		
				2000=	65%		
				2001-2007=	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 & Alberta Finance for years 2000 through 2007. Cheng Report for years 1998 & 1999. 1996 & 1997=1998						
(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, 2007=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)]						

Notes

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 calculated 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. The adjustment factor found here is different than the one used in the Cheng report because the current report makes use of more years of data. As such, the estimated effective tax rates on investment income are improved-upon from those originally estimated.

Effective Tax Rate on Investment Income

Row. No.	Industry P&C 1, \$'000	2002	2003	2004	2005	2006	2007	
Underwriting Operations								
Premiums Written								
(1)	Direct	19,218,040	21,899,319	22,874,209	22,907,732	24,324,924	25,419,941	
(2)	Reinsurance Assumed	4,095,228	3,822,706	3,678,936	3,689,490	4,869,477	5,046,564	
(3)	Reinsurance Ceded	6,291,825	6,616,395	5,335,402	5,376,788	6,421,122	6,569,907	
(4)	Net Premiums Written	17,021,443	19,105,629	21,217,744	21,220,435	22,773,279	23,896,598	
(5)	Decrease (Increase) in Unearned Premiums	(1,328,465)	(1,634,244)	(1,012,768)	(344,008)	(652,490)	(1,024,503)	
(6)	Net Premiums Earned	15,692,978	17,471,385	20,204,975	20,876,427	22,120,778	22,872,095	
(7)	Service Charges	70,326	89,899	108,757	110,426	104,225	93,973	
(8)	Other	(301)	(2,452)	(2,126)	(2,699)	(3,865)	(5,101)	
(9)	Total Underwriting Revenue	15,763,003	17,558,832	20,311,607	20,984,153	22,221,149	22,960,967	
(10)	Net Claims and Adjustment Expenses	11,968,518	12,272,357	12,704,821	12,882,568	13,790,306	14,550,647	
Acquisition Expenses								
(11)	Commissions	2,325,713	2,586,793	3,058,228	3,193,084	3,424,238	3,495,318	
(12)	Taxes	542,928	641,284	710,145	727,820	768,035	780,317	
(13)	Other	713,826	790,219	883,059	1,006,040	1,056,139	1,112,181	
(14)	General Expenses	1,026,862	1,202,182	1,312,180	1,323,162	1,439,511	1,564,349	
(15)	Total Claims and Expenses	16,577,847	17,492,835	18,668,432	19,132,674	20,478,230	21,502,811	
(16)	Premium Deficiency Adjustments	1,222	(708)	(117)	-	-	0	
(17)	Underwriting Income (Loss)	(816,066)	66,704	1,643,292	1,851,479	1,742,919	1,458,156	
Investment Operations								
(18)	Income	1,303,463	1,405,823	1,559,662	1,708,134	1,943,275	2,304,143	
(19)	Realized Gains (Losses)	(4,187)	422,834	405,688	784,649	959,922	884,791	
(20)	Expenses	79,029	56,102	63,472	85,141	77,136	87,825	
(21)	Net Investment Income	1,220,247	1,772,555	1,901,878	2,407,643	2,826,061	3,101,108	
Other Revenue and Expenses								
(22)	Income (Loss) from Ancillary Operations net of Expenses	2,934	669	3,891	4,940	2,572	2,836	
(23)	Share of Net Income (Loss) of Subsidiaries and Affiliates	33,564	77,384	152,111	240,978	205,794	187,068	
(24)	Gains (Losses) from Fluctuations in Foreign Exchange Rates	(2,295)	(54,151)	(14,101)	(16,360)	(2,804)	(9,657)	
(25)	Other	(109,998)	137	23,470	31,837	9,699	(3,740)	
(26)	Income (Loss) before Income Taxes and Extraordinary Items	328,386	1,863,298	3,710,541	4,520,517	4,784,241	4,735,771	
Income Taxes								
(27)	Current	103,393	584,825	1,271,858	1,374,509	1,530,498	1,429,865	
(28)	Future	(32,136)	(7,258)	(109,899)	(21,174)	(2,985)	(6,528)	
(29)	Total Income Taxes	71,257	577,567	1,161,959	1,353,335	1,527,513	1,423,337	
(30)	Extraordinary Items net of Income Taxes	-	140	70	36	114	22	
(31)	Net Income (Loss) for the Year	257,129	1,285,871	2,548,651	3,167,217	3,256,842	3,312,456	
(32)	Underwriting Margin	-5.2%	0.4%	8.1%	8.9%	7.9%	6.4%	
(33)	Effective Tax Rate on Underwriting Income	39.2%	36.7%	34.9%	33.6%	32.5%	31.0%	
(34)	Adjustment Factor	1.008	1.008	1.008	1.008	1.008	1.008	
(35)	Calculated Tax	120,706	582,911	1,174,685	1,311,731	1,337,135	1,141,845	
(36)	Capital Tax	24,212	27,252	29,212	29,024	-	-	
(37)	Difference	73,661	32,596	41,938	(12,580)	(190,378)	(281,492)	
(38)	Tax on Investment Income	440,604	558,401	601,669	689,263	770,774	689,816	
(39)	Tax Rate on Investment Income	38%	31%	29%	26%	25%	21%	
(40)	assumption:	capital gain inclusion rate:			1996-1999=	75%		
					2000=	65%		
					2001-2007=	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 & Alberta Finance for years 2000 through 2007. Cheng Report for years 1998 & 1999. 1996 & 1997=1998
(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, 2007=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)]

Notes

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 calculated 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. The adjustment factor found here is different than the one used in the Cheng report because the current report makes use of more years of data. As such, the estimated effective tax rates on investment income are improved-upon from those originally estimated.

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
	Total	45,933,479	33,061,173	12,872,306	1,596,780	12.4%	21,335,985	8,698,209	1,407,368	4,719,149	23,907,677	1.86	27,493,576	2,750,049	10.0%		15,574,121
1997	Canadian	32,545,278	24,173,219	8,372,059	1,237,586	14.8%	15,401,369	6,762,752	1,145,569	3,521,813			19,570,460	2,101,582			11,544,269
	Foreign	15,908,659	10,101,086	5,807,573	498,798	8.6%	6,992,968	2,257,690	409,697	1,555,657			10,103,771	903,193			4,185,624
	Total	48,453,930	34,274,298	14,179,632	1,736,384	12.2%	22,394,337	9,020,442	1,555,266	5,077,470	24,782,043	1.75	29,674,231	3,004,775	10.5%		15,729,893
1998	Canadian	34,025,559	25,123,049	8,902,510	806,898	9.1%	15,959,530	7,047,499	1,199,483	3,635,246			20,610,901	1,720,177			11,778,241
	Foreign	16,275,762	10,369,931	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
	Total	50,301,321	35,492,980	14,808,341	990,468	6.7%	23,210,833	9,318,433	1,625,734	5,141,236	25,762,296	1.74	31,030,475	2,572,971	8.5%		15,854,742
1999	Canadian	36,813,417	26,924,357	9,889,060	700,671	7.1%	16,983,934	7,509,190	1,384,202	4,191,416			21,691,312	1,559,868			11,756,067
	Foreign	16,934,315	10,712,420	6,221,895	333,526	5.4%	7,470,459	2,335,909	472,448	1,447,857			11,053,033	814,699			4,275,764
	Total	53,747,732	37,636,777	16,110,955	1,034,197	6.4%	24,454,393	9,845,099	1,856,650	5,639,273	26,803,569	1.66	32,744,345	2,374,567	7.4%		16,031,831
2000	Canadian	38,078,550	27,911,623	10,166,927	695,129	6.8%	17,543,157	8,105,959	1,439,442	4,284,988			22,476,150	2,038,459			12,743,544
	Foreign	17,665,139	11,109,884	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
	Total	55,743,689	39,021,507	16,722,182	941,012	5.6%	25,280,532	10,528,366	1,902,544	5,743,968	28,162,386	1.68	34,022,042	2,953,343	8.8%		17,277,302
2001	Canadian	42,630,164	32,199,206	10,430,958	338,830	3.2%	19,886,704	9,536,937	2,117,040	5,933,686			22,500,310	1,693,736			13,587,009
	Foreign	18,317,204	12,051,497	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
	Total	60,947,368	44,250,703	16,696,665	357,346	2.1%	28,438,565	11,875,498	2,559,782	7,351,110	30,403,171	1.82	34,239,649	2,605,988	7.6%		19,137,262
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
	Total	68,260,857	51,033,292	17,227,565	242,255	1.4%	31,969,085	14,261,297	2,979,595	8,150,028	35,100,759	2.04	38,566,677	2,011,333	5.5%		23,582,917
2003	Canadian	53,541,743	41,419,767	12,121,976	1,285,871	10.6%	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	15,469,311	7,559,270	912,973	12.1%	10,608,102	3,287,194	608,195	1,792,833			16,243,458	887,799			7,294,863
	Total	76,570,324	56,889,078	19,681,246	2,198,844	11.2%	35,396,029	16,215,182	3,067,088	8,756,371	39,787,752	2.02	47,003,819	2,660,354	6.2%		26,400,492
2004	Canadian	61,094,101	46,438,183	14,655,918	2,548,651	17.4%	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	16,171,023	8,674,319	1,535,399	17.7%	11,436,867	3,208,758	563,048	1,792,606			18,143,892	910,314			6,878,033
	Total	85,939,443	62,609,206	23,330,237	4,084,050	17.5%	39,574,127	16,997,918	2,698,770	8,964,267	44,909,008	1.92	54,403,660	2,812,192	5.5%		28,095,777
2005	Canadian	65,833,916	49,198,677	16,635,239	3,167,217	19.0%	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	18,680,100	9,084,870	875,820	9.6%	13,962,159	3,253,839	571,562	2,583,941			20,613,205	970,910			6,809,572
	Total	93,598,886	67,878,777	25,720,109	4,043,037	15.7%	44,320,026	17,432,974	2,762,514	10,233,435	48,757,051	1.90	61,894,599	3,378,553	5.8%		28,030,007
2006	Canadian	72,987,647	54,086,709	18,900,938	3,256,842	17.2%	33,780,433	15,238,556	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	21.6%	14,063,792	3,356,012	617,946	3,043,878			21,956,906	1,066,756			6,963,843
	Total	102,888,029	73,432,695	29,455,334	5,534,018	18.8%	47,844,225	18,594,568	2,875,308	10,966,276	52,597,209	1.79	69,002,770	3,892,817	5.9%		29,737,122
2007	Canadian	77,553,264	56,475,462	21,077,802	3,312,456	15.7%	35,208,293	16,348,644	2,301,996	7,823,888			51,010,539	3,101,108			23,896,598
	Foreign	30,670,091	19,591,170	11,078,921	1,636,569	14.8%	14,392,989	3,365,524	618,350	2,767,771			22,263,165	988,004			7,032,551
	Total	108,223,355	76,066,632	32,156,723	4,949,025	15.4%	49,601,282	19,714,168	2,920,346	10,591,659	55,803,445	1.74	73,273,704	4,089,112	5.7%		30,929,149

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 including alberta automobile insurance.
(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]

Projected Loss Cost Calculation- Third Party Liability Bodily Injury Coverage

Alberta Private Passenger (Excluding Farmers)

Post Morrow v. Zhang (2008) Court of Queen's Bench Decision

Using the Methodology, and Scenarios A and B, of the Alberta Automobile Insurance Rate Board's 2008 Actuarial Analysis as Reported in the July 25, 2008 Addendum

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11.A)	(11.B)	(12.A)	(12.B)	(13)
Year	Eamed Cars	Incurred Losses & ALAE	Reported Losses & ALAE per Car	LDF	ULAE	TOTAL Reform Adjustment	Collateral & Gross-to-Net Factor	Adjusted Ultimate Losses & LAE per Car	Past Trend to Oct. 1, 2007	Future Trend to Nov 1, 2009		Projected Ultimate Losses & LAE per Car		Weights
										Scenario A	Scenario B	Scenario A	Scenario B	
2003	1,713,607	\$ 556,491,473	\$ 324.75	1.0280	1.0930	1.000	0.953	\$ 347.89	0.795	0.903	1.013	\$ 249.75	\$ 280.17	7%
2004	1,745,115	\$ 446,242,113	\$ 255.71	1.0540	1.1030	1.383	0.953	\$ 392.02	0.839	0.903	1.013	\$ 297.00	\$ 333.18	13%
2005	1,822,800	\$ 320,453,259	\$ 175.80	1.1070	1.0974	1.587	0.953	\$ 323.21	0.886	0.903	1.013	\$ 258.59	\$ 290.09	20%
2006	1,944,642	\$ 315,912,253	\$ 162.45	1.1530	1.0865	1.587	0.953	\$ 307.99	0.935	0.903	1.013	\$ 260.03	\$ 291.71	40%
2007	2,054,665	\$ 264,656,761	\$ 128.81	1.2320	1.0888	1.587	0.953	\$ 261.48	0.987	0.903	1.013	\$ 233.05	\$ 261.44	20%

	Scenario A	Scenario B
Weighted Average:	\$ 258.43	\$ 289.92

Col. No.	Brief Description/ Source Information
(1)	Year Identifier
(2)	Number of Eamed Cars
(3)	From 25 July 2008 Addendum to Report for the Alberta Automobile Insurance Rate Board, Actuarial Analysis (original source IBC/ GISA)
(4)	= (3) / (2)
(5)	From 25 July 2008 Addendum to Report for the Alberta Automobile Insurance Rate Board, Actuarial Analysis (original source IBC/ GISA)
(6)	From 25 July 2008 Addendum to Report for the Alberta Automobile Insurance Rate Board, Actuarial Analysis (original source IBC/ GISA)
(7)	The inverse of the "Reform Adjustment" used in the 2008 Alberta Automobile Insurance Rate Board Actuarial Analysis (July 25, 2008 Addendum) - altered to reflect the <i>removal</i> of the three reforms.
(8)	Represents the savings from the Collateral and Gross-to-Net income changes. -From Exhibit 8.
(9)	= (4) x (5) x (6) x (7) x (8)
(10)	From 25 July 2008 Addendum to Report for the Alberta Automobile Insurance Rate Board, Actuarial Analysis (original source IBC/ GISA)
(11)	From 25 July 2008 Addendum to Report for the Alberta Automobile Insurance Rate Board, Actuarial Analysis (original source IBC/ GISA)
(12)	= (9) x (10) x (11)
(13)	From 25 July 2008 Addendum to Report for the Alberta Automobile Insurance Rate Board, Actuarial Analysis (original source IBC/ GISA)

Notes

The "Weighted Average" is found by multiplying the numbers in Column (12) by the corresponding weights in Column (13) and then summing over all five years.

Collateral & Gross-to-Net Income Reform Savings

Using the 13 December 2004 KPMG "Costing Analysis of 2004 Auto Reform" Report Methodology

(1)	(2)	(3)	(4)
	Pre Reform	Post Reform	Factor
BI out of Province	\$ 9.20	\$ 9.20	
BI In Province			
BI Non Minor Injury	\$ 237.22	\$ 215.63	
BI Injury Minor Injury	\$ 213.84	\$ 213.84	
Total BI	\$ 460.10	\$ 438.67	0.953

Col. No.	Description
(1)	BI (Bodily Injury) components as categorized in KPMG Report 1 "Costing Analysis of 2004 Auto Reform."
(2)	From KPMG Report 1 "Costing Analysis of 2004 Auto Reform."
(3)	From KPMG Report 1 "Costing Analysis of 2004 Auto Reform," with the exception that "BI Injury Minor Injury" has been left equal to "Pre Reform" number.
(4)	= Total BI from Column (3) divided by Total BI from Column (2).

Notes

The Factor of 0.953 implies that the savings from the "Collateral" and "Gross-to-Net Income" reform measures was approximately 4.7% (on the TPL-Bodily Injury component).

Indicated Average Premium for Third-Party-Liability Bodily Injury Coverage

Alberta Private Passenger (Excluding Farmers)

Using the Methodology of the Alberta Automobile Insurance Rate Board's 2008 Actuarial Analysis As Reported in the 25 July 2008 Addendum

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Projected Average Loss Cost	Present Value Discount Factor	Premium Delay Factor	Expense	Health Levy	Profit Provision	Indicated Average Premium
TPL-BI (with <i>Minor Injury Regulation</i>)	Scenario A:	\$ 162.97	0.892	1.0074	20.4%	6.3%	7.0%	\$ 220.78
	Scenario B:	\$ 182.97	0.892	1.0074	20.4%	5.9%	7.0%	\$ 246.43
TPL-BI (without <i>Minor Injury Regulation</i>):	Scenario A:	\$ 258.43	0.892	1.0074	20.4%	5.1%	7.0%	\$ 344.14
	Scenario B:	\$ 289.92	0.892	1.0074	20.4%	4.8%	7.0%	\$ 383.97

Difference:	Scenario A:	\$ 123.36
	Scenario B:	\$ 137.54

Column Number	Description
(1)	The first two rows represent the Alberta Automobile Insurance Rate Board's Indicated Average Premium prior to the <i>Morrow v. Zhang</i> Court of Queen's Bench decision. The latter two rows represent the Indicated Average Premium from Exhibit 7 which is post <i>Morrow v. Zhang</i> .
(2)	\$162.97 & \$182.97 taken directly from the 2007 Alberta Automobile Insurance Rate Board's Actuarial Analysis (25 July 2008 Addendum to Report). Other amounts from Exhibit 7 .
(3)	From 2008 Alberta Automobile Insurance Rate Board Actuarial Analysis (25 July 2008 Addendum to Report).
(4)	From 2008 Alberta Automobile Insurance Rate Board Actuarial Analysis (25 July 2008 Addendum to Report).
(5)	From 2008 Alberta Automobile Insurance Rate Board Actuarial Analysis (25 July 2008 Addendum to Report).
(6)	6.3% and 5.9% taken directly from 25 July 2008 Addendum, other amounts calculated such that total Health Levy approximates the target of \$85 million (with consideration of the fact that the levy is also on the property damage portion of basic coverage).
(7)	From 2008 Alberta Automobile Insurance Rate Board Actuarial Analysis (25 July 2008 Addendum to Report).
(8)	$= (2) \times (3) \times (4) / [1 - (5) - (6) - (7)]$

Notes

The difference represents the indicated average premium increase from the removal of the *Minor Injury Regulation*.

Present Value of Projected Loss Cost Calculation- Third-Party-Liability Bodily Injury Coverage

Alberta Private Passenger (Excluding Farmers)

Using the Methodology of the Alberta Automobile Insurance Rate Board's 2008 Actuarial Analysis As Reported in the 25 July 2008 Addendum

(1)		(2)	(3)	(4)
		Projected Average Loss Cost	Present Value Discount Factor	Indicated Average Premium
TPL-BI (with Minor Injury Regulation):	Scenario A:	\$ 162.97	0.892	\$ 145.37
	Scenario B:	\$ 182.97	0.892	\$ 163.21
TPL-BI (without Minor Injury Regulation):	Scenario A:	\$ 258.43	0.892	\$ 230.52
	Scenario B:	\$ 289.92	0.892	\$ 258.60

Difference:	Scenario A:	\$ 85.15
	Scenario B:	\$ 95.39

Column Number	Description
(1)	The first two rows represent the Alberta Automobile Insurance Rate Board's Indicated Average Premium prior to the Morrow v. Zhang Court of Queen's Bench decision. The latter two rows represent the Indicated Average Premium from Exhibit 7 which is post Morrow v. Zhang.
(2)	\$162.97 & \$182.97 taken directly from the 2007 Alberta Automobile Insurance Rate Board's Actuarial Analysis (25 July 2008 Addendum to Report). Other amounts from Exhibit 7.
(3)	From 2008 Alberta Automobile Insurance Rate Board Actuarial Analysis (25 July 2008 Addendum to Report).
(4)	= (2) x (3)

Notes:

The difference represents the present value cost from the removal of the *Minor Injury Regulation*.

**Alberta Automobile Insurance
Estimation of Return-on-Equity from Removal of Minor 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		(14) Investment Income \$(millions)			(17) Total Profit Pre-Tax		(19) Tax Rate		(21) Total Profit Post-Tax		(22) Year
					(7) %	(7) \$(millions)				(11) Capital	(11) Operations	(13) Equity	(14) Operations	(15) Total	(16) \$(millions)	(17) ROE	(18) Underwriting	(19) Investment	(20) \$(millions)	(21) ROE	
Scenario A: 2007	1,372	68.7%	22.9%	91.6%	8.4%	115	1.00	1,366	1.74	5.7%	5.7%	79	136	215	330	26.5%	31.0%	21.0%	249	20.0%	2007
Scenario B: 2007	1,387	69.5%	22.9%	92.4%	7.6%	105	1.00	1,381	1.74	5.7%	5.7%	79	138	217	322	25.9%	31.0%	21.0%	244	19.5%	2007

Brief Description of Each Column including Data Source

Col. No.	Description	Source
(1)	Year in which accidents occurred and to which premiums were charged.	
(2)	Premiums charged for specific Year for the coverage(s) as noted for Private Passenger Alberta automobile insurance excluding farmers. The numbers in this column are different than those reported in AU90-A (and Exhibit 2) because they include an additional amount equal to half of our estimated required increases (from Exhibit 9). We have done this because of the AIRB's decision to allow half of its estimated required premium increase. Given the similarity of our estimated required premium increase to the AIRB's, we have used half of our estimates.	This premiums in this exhibit have been altered from that found in the original data source: AU90-A.1987, 1988-2007.
(3)	Claims expressed as % of premiums in column (2). The value(s) in this column differ from that in Exhibit 2 because of the inclusion of an additional amount in the numerator equal to the respective amount (from Exhibit 7) multiplied by the number of earned vehicles.	This claims ratio in this exhibit is altered from that found from the original data source: AU90-A.1987, 1988-2007.
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2).	Cheng report for 1998. Used 1998 for years 1997,1996. Used IBC Expense Survey, as disclosed by AIRB in Oliver Wyman 30 May 2008 Report for Alberta. Used selection in AIRB Rate Level Adjustment report (effective November 1st of prior year) for years 2005-2007. The AIRB's selection for 2004 equalled the IBC Expense Survey number for that year of 24.4%.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.	Calculated
(6)	Equals premiums less claims and expenses as % of premiums.	Calculated
(7)	Equals premiums less claims and expenses.	Calculated
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to Alberta "All Coverages" automobile insurance.	OSFI P&C Data
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" Alberta automobile insurance risk.	Calculated
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.	Reserves have been estimated as a function of equity as per the Cheng Report. The ratio of reserves to equity is found from the OSFI data by taking the sum of unpaid claims and unearned premium reserve minus reinsurance unpaid claims (and adjustment expenses) minus reinsurance unearned premium reserve, all divided by the equity at year-end.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.	OSFI P&C Data
(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.	Calculated
(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).	Calculated
(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).	Calculated
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.	Canada Revenue Agency & Alberta Finance for years 2000 through 2007. Cheng Report for years 1998 & 1999. 1996 & 1997=1998. There were a series of decreases in the Alberta corporate tax rate that occurred on April 1st of 2001,2002,2003,2004 & 2006. A weighted average of the tax rates in place in those years was used.
(19)	See note for column (18).	Exhibit 5
(20)	Same as column (16) except after tax.	Calculated
(21)	Same as column (17) except after tax.	Calculated
(22)	Same as column (1).	Calculated

Alberta Automobile Insurance Estimation of Return-on-Equity from Removal of Minor Injury Regulation if Premiums 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		(14) 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	(15) Total	(16) \$(millions)	(16) ROE	(18) Underwriting	(18) Investment	(20) \$(millions)	(20) ROE		
Scenario A: 2007	2,240	72.2%	22.9%	95.1%	4.9%	109	1.00	2,231	1.74	5.7%	5.7%	128	223	351	460	22.6%	31.0%	21.0%	352	17.3%	2007	
Scenario B: 2007	2,254	72.7%	22.9%	95.6%	4.4%	99	1.00	2,245	1.74	5.7%	5.7%	129	224	353	452	22.1%	31.0%	21.0%	347	17.0%	2007	

Brief Description of Each Column including Data Source

Col. No.	Description	Source
(1)	Year in which accidents occurred and to which premiums were charged.	
(2)	Premiums charged for specific Year for the coverage(s) as noted for Private Passenger Alberta automobile insurance excluding farmers. The numbers in this column are different than those reported in AU90-A (and Exhibit 2) because they include an additional amount equal to half of our estimated required increases (from Exhibit 9). We have done this because of the AIRB's decision to allow half of its estimated required premium increase. Given the similarity of our estimated required premium increase to the AIRB's, we have used half of our estimates.	This premiums in this exhibit have been altered from that found in the original data source: AU90-A.1987, 1988-2007.
(3)	Claims expressed as % of premiums in column (2). The value(s) in this column differ from that in Exhibit 2 because of the inclusion of an additional amount in the numerator equal to the respective amount (from Exhibit 7) multiplied by the number of earned vehicles.	This claims ratio in this exhibit is altered from that found from the original data source: AU90-A.1987, 1988-2007.
(4)	Insurer expenses (administrative, commissions, etc.) expressed as % of premiums in column (2).	Cheng report for 1998. Used 1998 for years 1997,1996. Used IBC Expense Survey, as disclosed by AIRB in Oliver Wyman 30 May 2008 Report for Alberta. Used selection in AIRB Rate Level Adjustment report (effective November 1st of prior year) for years 2005-2007. The AIRB's selection for 2004 equalled the IBC Expense Survey number for that year of 24.4%.
(5)	The combined ratio is the sum of the claims ratio and the expense ratio.	Calculated
(6)	Equals premiums less claims and expenses as % of premiums.	Calculated
(7)	Equals premiums less claims and expenses.	Calculated
(8)	This represents the Canadian "all lines ratio" of premiums to equity. It is used to allocate equity to Alberta "All Coverages" automobile insurance.	OSFI P&C Data
(9)	This uses column (8) to impute the equity employed by insurers to support the "All Coverages" Alberta automobile insurance risk.	Calculated
(10)	This is used to determine the premiums (less expenses) that are earmarked for claims but not yet paid hence available for investment.	Reserves have been estimated as a function of equity as per the Cheng Report. The ratio of reserves to equity is found from the OSFI data by taking the sum of unpaid claims and unearned premium reserve minus reinsurance unpaid claims (and adjustment expenses) minus reinsurance unearned premium reserve, all divided by the equity at year-end.
(11)	Columns (11) and (12) present the actual investment return achieved by the Canadian industry for each year.	OSFI P&C Data
(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.	Calculated
(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).	Calculated
(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).	Calculated
(18)	Columns (18) and (19) present the corporate tax rates for the two major operations of an insurance company.	Canada Revenue Agency & Alberta Finance for years 2000 through 2007. Cheng Report for years 1998 & 1999. 1996 & 1997=1998. There were a series of decreases in the Alberta corporate tax rate that occurred on April 1st of 2001,2002,2003,2004 & 2006. A weighted average of the tax rates in place in those years was used.
(19)	See note for column (18).	Exhibit 5
(20)	Same as column (16) except after tax.	Calculated
(21)	Same as column (17) except after tax.	Calculated
(22)	Same as column (1).	Calculated