The Net Discount Rate in Nova Scotia

by
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May 30, 2015

When I told a client that I had been invited to talk at the May 2015 APTLA Conference, he suggested that I explain what a net discount rate is. The net discount rate is also sometimes referenced as the "real" rate of return, both terms meaning a nominal investment yield, reduced by the inflation rate, or possibly a wage inflation rate. To provide a simple example, suppose that one can purchase a conservative long-term investment yielding 4% per annum (very optimistic in today's environment). Further, suppose that annual inflation is projected to be 2.5%.

Ignoring inflation for the moment, if one requires a payment of $1.00 at the end of the first year and the nominal rate of return is 4%, one needs 1/1.04 = $.9615 at the start of the year to provide a payment of $1.00 at the end of the year. This is called the present value. On the other hand, if inflation is expected to be 2.5% and one requires $1.025 at the end of the year, the present value is 1.025/1.04 = $.9856, which is approximately the same as using a net discount rate of 4.0% less 2.5% = 1.5%; namely, 1/1.015 = $.9852.

The concept of using a net discount rate began as a result of the Supreme Court of Canada trilogy in 1978 (*Arnold v. Teno*, *Andrews v. Grand & Toy Alberta Ltd.* and *Thornton v. Prince George School Board*). Thereafter several provinces mandated net discount rates to be used in pecuniary damages calculations; namely, Nova Scotia in 1980, Ontario in 1980, BC in 1981, New Brunswick in 1986, PEI in 1990, Quebec in 1991, and Manitoba in 1993. These mandated net discount rates assume that the plaintiff, in investing an award for future pecuniary damages, is not expected to invest in risky investments; rather it is assumed that a mixed portfolio of short-, medium- and long-term Government of Canada bonds would be the preferred investment choice.

Up to November 1, 2003, the mandated net discount rate in Nova Scotia was prescribed by Civil Procedure Rule No. 31.10 (from January 1, 2009, Rule 70.06); namely 2.5% per annum.

However, the net discount rate for motor vehicle accidents occurring on and after November 1, 2003 is now prescribed by the *Automobile Insurance Tort Recovery Limitation Regulations*. Specifically, the discount rate for calculating loss or damage from bodily injury or death is 3.5% per annum. The regulations further state that "effective January 1, 2005, the discount rate for each calendar year may be based on the difference between the rate set for Government of Canada bonds and the consumer price index for the previous twelve months".

Based on the preceding wording, for personal injury and fatality cases that I prepared in NS MVA actions up to September 2013, I calculated the average yield on long-term Government of Canada bonds over the previous twelve months, and the average of the Consumer Price Index over the same period. For almost every twelve month period

since January 2005, this resulted in a net discount rate of less than 3.5%, and for the last few years, substantially below 3.5%.

When the regulations were implemented, I understand that there was to have been an annual review of the net discount rate. To my knowledge, this has never been undertaken, and there is a recent court decision, *Brocke Estate v. Crowell* (September 2013), which has ruled that 3.5% per annum is to be used as the net discount rate until such review takes place. This decision has been attached as Appendix A.

In his decision, Justice Muise concluded that in his view, the express intent of the regulation is to set out a formula upon which the discount rate is to be based if the Governor in Council decides to set a new rate and that such a rate would be for a calendar year only, barring which, the 3.5% would continue to apply. It would allow the Governor in Council to prescribe a different rate for each year, based on the formula, if it is wished. Those reviews did not happen.

Justice Muise concluded that it may seem unfair to be stuck with a rate which does not reflect the economic situation today, and that present valuations are to address losses occurring well into the future. He also noted that taking the economic circumstances existing today, during a depressed economy, and projecting them over a 20 year time frame may well over-compensate a plaintiff in the long run.

I respectfully disagree with Justice Muise's last statement. The concept is that the plaintiff should not have to invest in riskier investments, such as equities. At present, it is impossible to find a conservative investment with a gross yield of 3.5% per annum, let alone a yield net of inflation at 3.5% per annum. Rates of return on Real Return Bonds are less than 0.5%. Moreover, inflation has been relatively stable over the past 20 years (namely, between 1.0% and 3.0% per annum). If a plaintiff invests in a portfolio of long-term bonds yielding say 2.0% gross per annum, and interest rates suddenly increase to say 5.0% per annum, in order to achieve the higher yield the plaintiff would have to sell the lower-yielding bonds at a significant loss.

I would also add that if a structured settlement is purchased for the plaintiff, these are very expensive. Based on a recent review of a proposed structure providing 2% future indexing of payments, I determined that insurance companies offering structured settlements are currently discounting using a net rate of close to 0%!

During the past few years, there has been growing concern in the actuarial evidence field that mandated rates in some Canadian jurisdictions have diverged materially from the discount rates that actuaries would use in the absence of mandated rates. The CIA has conducted a review of current mandated rates across Canada. In October 2013, the CIA wrote to The Honourable Justice Gerald Moir (see Appendix B), and in January 13, 2015, the CIA wrote to Mr. Douglas Murphy, NS Superintendent of Insurance, concerning a review of Section 4 of Automobile Insurance Tort Recovery Regulation 83/2000 (see Appendix C).

In the early 1980s when many of Canada's mandated discount rates were developed, both nominal rates of return and inflation rates were much higher than today. However, for almost 20 years now, inflation rates have been lower and relatively stable. In 1991, Canada became the second country in the world (after New Zealand) to adopt an inflation-targeting frame work for its central bank monetary policy. Since 1995, the Bank of Canada's goal has been to keep the CPI close to 2% and within the control range of 1% to 3%. For the most part, that has been achieved on a consistent basis. At the same time nominal rates of return on Government of Canada benchmark long-term bonds have decreased materially since the early 1980s. For example, the month-end yield for March 2015 was only 2.0% (rounded). Inflation over the previous twelve months averaged 1.9%, implying a real rate of return of only 0.1%.

A comparison of inflation rates with long-term bond yields (V122544) over past years is, as follows:

Year	Long-Bond Yield*	Inflation**	Difference
1981	15.5%	12.5%	3.0%
1986	8.9%	4.2%	4.7%
1991	9.0%	5.6%	3.4%
1996	5.7%	1.5%	4.2%
2001	4.1%	2.5%	1.6%
2006	4.1%	2.0%	2.1%
2007	4.2%	2.1%	2.1%
2008	3.5%	2.4%	1.1%
2009	4.1%	0.3%	3.8%
2010	3.5%	1.8%	1.7%
2011	2.5%	2.9%	-0.4%
2012	2.4%	1.5%	0.9%
2013	3.2%	0.9%	2.3%
2014	2.5%	2.0%	0.5%
2015 (to March)	2.0%	1.9%	0.1%

** As of December of each year.*
*** Average total CPI for each calendar year.*

As can be seen from the table above, with the exception of 2009 when inflation dropped dramatically during the depressed economic environment of that time, real rates of return have been consistently below 3.5% for the last fifteen years.

The mandated rate of 3.5% per annum for pecuniary damages arising from MVAs in NS results in the lowest damages in Canada, where mandated rates have been prescribed. The only provinces where mandated rates are not prescribed are Alberta and NL. In the table below, present values of $50,000 per annum payable to a male age 40 up to his

attainment of age 65 are compared (mortality decrement only per Statistics Canada 2009-2011 Life Table):

Province	Net Discount Rate	Present Value
NS (MVA)	3.5%	**$814,000**
Saskatchewan	3.0%	$857,000
Manitoba	3.0%	$857,000
NS (non-MVA)	2.5%	$904,000
NB (default)	2.5%	$904,000
PEI	2.5%	$904,000
NWT	2.5%	$904,000
Nunavut	2.5%	$904,000
Quebec	2.0%	$955,000
BC (from 2014)	1.5%	$1,009,000
Ont (from 2014)	0.3%/2.5%	$1,118,000

It seems incongruous that a differential of over $300,000 in damages exists between Nova Scotia and Ontario for exactly the same annual loss.

The CIA has recommended to the Superintendent of Insurance that a formula, with a regular periodic reset mechanism be implemented. The formula would be similar to the current section 4(2), but with more specificity, such as “the average of a certain yield measure over an n-month period ending two months prior to the application of the formula, divided by the average inflation rate over the same period”.

It was also recommended that a stepped rate formula be considered. A level mandated real discount rate, as exists today in most Canadian jurisdictions, assumes that the underlying rate of return with continue indefinitely. A stepped interest rate format implicitly assumes an eventual return to historical norms regardless of the then-current economic environment. This has the advantages that it reflects the current economic environment to some degree, but does not rely on it entirely, it incorporates a reversion to historical norms thus minimizing volatility from year to year, and can be structured to ensure that the mandated rates are determinable several months in advance of the effective date.

Ontario has a stepped rate formula, which is based on the average of Real Return Bonds for the period starting on March 1 and ending on August 31 in the year before the year that the trial begins, less ½ of 1%, and rounded to the nearest 1/10th percent, but not less than zero, reverting to 2.5% per annum after 15 years. It is my understanding that the reduction of ½ of 1% is to allow for investment management costs.

A Real Return Bond is one where both the principal amount invested and the interest payments rise with inflation. For example, consider an RRB issued at $1,000 with a fixed semi-annual coupon of 2%. Assuming no inflation, the bond would pay interest of $20 every six months. However, if the CPI were to rise by 1% in the six months after the bond is issued, the principal would be adjusted to $1,010 ($1,000 multiplied by 1.01), and the semi-annual interest payment would then increase to $20.20 (2% multiplied by $1,010). The semi-annual adjustments continue over the life of the bond. The end result is that when the bond matures, the principal returned is the inflation-adjusted equivalent of the amount originally invested.

The big disadvantage of RRBs is that the interest payments and the increase in principal are both taxed in the year they occur, even though the increase in principal will not be received by the investor until maturity. That is why investors are advised to hold RRBs inside a registered account. Proceeds of an award in a civil action could only be invested inside an RRSP to the extent that the recipient has sufficient RRSP contribution room.

Further, RRBs typically have long maturities, which make them volatile when interest rates rise or fall. The longest Canada RRB matures in 2044 and the shortest in 2021. Such long time horizons are fine for pension funds that have time to plan decades into the future, but retail investors circumstances can change a lot in that time. If they have to sell before maturity, they could be hit with a hefty capital loss if interest rates have risen.

Finally, RRBs are less liquid than regular bonds, and try to do too many things at once; namely providing a fixed income and inflation protection at the same time.

Personally, I favour a stepped rate formula for the first fifteen years based on nominal long bond yields, say the 12 month average for V122544 ending in October of the prior year, net of average inflation over the same period, reverting to the historical mean of 2.5% after 15 years. The October end date allows sufficient time for the rate to be known for the new year. I also do not believe that it is necessary to reduce the resulting net discount rate to allow for investment management costs. This could be separately calculated on a case-by-case basis, per the Supreme Court of Canada's decision in *Townsend v. Kroppmans*.

APPENDIX A

SUPREME COURT OF NOVA SCOTIA
Citation: ***Brocke Estate v Crowell***, 2013 NSSC 344

Date: 2013-10-22
Docket: Ken No. 310335
Registry: Kentville

Between:

Anna Gardner, *Administrator of the Estate of*
John Gary Joseph Brocke

Plaintiff

v.

Arthur Crowell *and* ***Gaye Crowell***

Defendants

Judge:	The Honourable Justice Pierre L. Muise
Heard:	September 10 and 11, 2013, in Kentville, Nova Scotia
Oral Decision:	September 11, 2013
Counsel:	**Brian Hebert**, Counsel for the Plaintiff
	Debbie Brown and **Franco Tarulli**, Counsel for the Defendants

By the Court:

[1] This is in the matter of Anna Gardner, as the Administrator of the Estate of John Brocke, versus Arthur and Gaye Crowell. It is a motion to determine the discount rate to be used, or, I should say, whether the prescribed 3.5% discount rate must be used.

[2] This motion is brought in the middle of a jury trial in relation to a fatal injury suffered in a motor vehicle accident. The actuarial report, submitted on behalf of the Plaintiff, used a discount rate of 0.8%, based on the difference between the average yield on long term Government of Canada bonds and the change in the Consumer Price Index ("CPI") from the end of 2011 to the end of 2012.

[3] Yesterday the Defendants objected to the use of that rate, following receipt of a revised actuarial report prepared after portions of that report, in its prior form, were excluded. The parties made some argument yesterday and the Defendants provided a brief late last evening. Some of the Plaintiff's supporting materials were received by e-mail at about 9:10 this morning. The brief and other supporting

materials were provided after the 9:30 a.m. start time but before 10:00 a.m., if I recall correctly.

[4] After review of those materials by the Defendants, and by the Court, there was some oral argument until shortly after 12:00 noon today. The issue in those arguments is the interpretation of s. 4(2) of the *Automobile Insurance Tort Recovery Limitation Regulations*, N.S. Reg. 182/2003, as amended.

[5] Section 4 of those regulations prescribes the discount rate for s. 113C of the *Insurance Act*, which states:

> 113C In an action for loss or damage from bodily injury or death arising directly or indirectly from the use or operation of an automobile, under any enactment or rule of law, an award against the owner, operator or occupants of an automobile, any person present at the incident and any person who is or may be vicariously liable with respect to any of them, shall not be calculated using a discount rate less than the amount prescribed by the Governor in Council by regulation. 2003 (2nd Sess.), c. 1, s. 12.

[6] And, just for the record, that *Insurance Act* is c. 231 of the 1989 Revised Statutes of Nova Scotia and the regulations in questions are made pursuant to that *Act*.

[7] Section 4, including subsections 1 and 2, state:

> **Discount rate for calculating loss or damage from bodily injury or death**

> 4 (1) For the purpose of Section 113C, the discount rate for calculating loss or damage from bodily injury or death is 3.5%.
>
> (2) Effective January 1, 2005, the discount rate for each calendar year may be based on the difference between the rate set for Government of Canada bonds and the consumer price index for the previous 12 months.

[8] Section 4(2) does not say "in a particular case" or simply "the discount rate may be based". It specifically refers to a discount rate for each calendar year. That, in my view, reflects an intention that such a rate, if it was set, would be set for each calendar year, rather than determined by the Courts on a case-by-case basis or each year in the first case to come before it.

[9] This view is supported by the Hansard Debates in the first session of the 59th Assembly of the Nova Scotia Legislature held October 27, 2003. At Page 1691, the Honourable Michel Samson commented:

> We did raise concerns with the discount rate. The government was moving it from 2.5 per cent to 3.5 per cent. We were very concerned about that. Government came back and indicated it was something based on the formula as it exists today, it should be 3.5 per cent. In return, they did agree that they would have an annual review of the discount rate so that if there were any changes to it, those changes would be made on a yearly basis.

[10] And, at Page 1709, the Honourable Danny Graham commented: "There is a commitment to review the discount rate in 12 months, and to be reviewed on a regular basis."

[11] They, in my view, both refer to an annual review by the Government and not by the Courts.

[12] This is the same view expressed by Michael Coyle in a 2004 paper entitled, "Recent Changes to Nova Scotia's Insurance Laws, A Practical Legal Analysis." At Page 15, he stated:

> Another sweetener given to the insurance industry came in the form of an increase in the "discount rate" that all court awards for personal injury are subject to and a big change in who decides how much that "discount rate" will be from now on. . . . Prior to these changes, the discount rate was set by the Judges of the Supreme Court in the *Civil Procedure Rules* at 2.5%. Now it is set by Cabinet and you will lose 3.5%. From now on it will be raised annually by Cabinet, based on the difference between the Government Bond Rate and the CPI.

[13] It is noteworthy that those comments were made outside of the confines of a particular court case and were simply an assessment, unattached to any representation of any client.

[14] These regulations are part of legislation that was aimed at reforming the approach to damages in motor vehicles accidents, so as to limit recovery and facilitate insurers lowering premiums. That, in my view, is highlighted by s. 113C of the *Insurance Act*, which provides that you can use a discount rate higher than the prescribed discount rate, but not a lower one. The regulation provisions dealing with the discount rate also carry on, or continue, the purpose of avoiding

the expense of proving the discount rate. An authority for that purpose is *Corkum v. Sawatsky*, 126 NSR (2d) 317, a 1993 case of our Court of Appeal.

[15] The Plaintiff argues that s. 113C of the *Insurance Act* refers to a rate prescribed by regulations, such that if s. 4(2) is not interpreted as a mandatory rate prescribed by way of a formula, it is outside the authority of the *Act* and therefore makes no sense because the Government does not need a regulation giving it authority to make a regulation.

[16] In my view, if it had been intended that the formula in s. 4(2) be mandatory and automatically kick in after January 1, 2005, it would have been easy to word the regulation to reflect that. In addition, these regulations were amended in 2010 and any unintended wording could have been addressed at that time.

[17] In my view, the express intention of the regulation is to set out a formula upon which the discount rate is to be based if the Governor in Council decides to set a new rate and that such a rate would be for a calendar year only, barring which, the 3.5% would continue to apply. It would allow the Governor in Council to prescribe a different rate for each year, based on the formula, if it is wished.

[18] The Hansard Debates suggest the Government committed itself to doing that every year to address concerns regarding changes that might be necessary if the

prescribed rate did not reflect the changes in the economic situation. Those reviews have not happened. That is something which may be addressed in the political arena. However, the Debates are clear that it was intended to be done through a review by the Government, not by the application of a formula in a particular court case. In my view, the wording of s. 4(2) is consistent with that intention.

[19] I need not decide whether or not s. 4(2) is outside the authority of s. 113C if it is merely a permissive review formula because there has been no review to be challenged.

[20] It may seem unfair to be stuck with a rate which does not reflect the economic situation today. However, present valuations are to address losses occurring well into the future. Taking the economic circumstances existing today, during a depressed economy, and projecting them over a 20 year span, may well overcompensate a plaintiff in the long run. Discretion in relation to resetting rates for each calendar year allows the Governor in Council to take that into account and to refrain from doing so, which would also be in keeping with its overall objective of limiting tort recovery.

[21] In my view, since no discount rate other than 3.5% has been passed by Order in Council, the prescribed discount rate is still 3.5%.

Muise, J.

APPENDIX B

Seeing Beyond Risk

Canadian Institute of Actuaries / Institut canadien des actuaires

Voir au-delà du risque

The Honourable Justice Gerald Moir
Chair, Bench Rules Committee
The Law Courts Building
1815 Upper Water Street
Halifax, NS B3J 1S7

October 4, 2013

Dear Mr. Justice Moir,

I am writing to you on behalf of the Canadian Institute of Actuaries (CIA) regarding our concern about the level of pecuniary damages being received by Nova Scotia residents involved as plaintiffs in personal injury litigation.

The purpose of this letter is three-fold:

- To inform you of an upcoming CIA-sponsored research project related to mandated discount rates in civil litigation;
- To provide an overview of some of the issues that led us to initiate the research project; and
- To identify an appropriate contact person within your government so that we may obtain input related to that project.

For your information, I have attached the following appendices:

A. An introduction to the CIA and a brief outline of the issue;
B. A table summarizing the mandated discount rates in all Canadian jurisdictions; and
C. Illustrative calculations of loss using the various mandated discount rates.

I would like to draw your attention to the fact that many federal and provincial statutes require certification by a Fellow of the Canadian Institute of Actuaries in respect of insurance and pension liabilities and also for the certification of a criminal rate of interest under the Criminal Code.

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After reviewing the attached material, please do not hesitate to contact me if you wish to discuss these issues in greater detail. In any event, we will be in touch with you in the near future to confirm the contact person within your government.

Yours sincerely,

Jacques Lafrance, FCIA
President

APPENDIX A

The Canadian Institute of Actuaries (CIA) is the national organization of the actuarial profession in Canada. The CIA holds the duty of the profession to the public *above* the needs of the profession and its individual members. We serve both the public interest and our members by:

- Establishing and maintaining professional guidance, quality education, validation of eligibility, and continuing professional development requirements;
- Conducting relevant research;
- Maintaining a code of conduct and a disciplinary process of the highest standard; and
- Making meaningful and timely contributions to public policy.

With regard to the issue at hand, our goals are to make a meaningful and timely contribution to public policy, and to provide relevant research in support of government decisions.

Actuaries' Contribution to the Civil Litigation Process

Actuaries apply their specialized knowledge in mathematics of finance, statistics, contingencies, and risk theory to problems faced by pension plans, government regulators, insurance companies and other financial institutions, social programs, and individuals.

Of specific relevance here, actuaries regularly play a key role in civil litigation by assisting counsel in the quantification of pecuniary damages. We assist the parties and the court by opining on the value of pecuniary losses resulting from matters such as bodily injury, death, or wrongful dismissal. We determine the present value of lost past and future earnings, lost pension and other benefits, lost valuable services, and the cost of future care. Actuaries are uniquely qualified to serve as expert witnesses because in these endeavours our standards of practice require us to act in an independent, unbiased, non-partisan manner.

In determining the lump-sum present value of losses, the actuary must make assumptions concerning expected mortality and disability patterns and future economic conditions, and sometimes also concerning future earnings levels and future pension accruals.

Professional standards of practice require that the actuary comply with any applicable laws and regulations. For this reason, the actuary will use legally-mandated assumptions where they exist. In the absence of mandated assumptions, the actuary will determine and use assumptions that are, in the opinion of the actuary, appropriate for the matter at hand.

Mandated Discount Rates for Nova Scotia

Section 4 (1) of Automobile Insurance Tort Recovery Limitation Regulation 83/2003 under the Insurance Act, enacted in 2003, requires use of the mandated discount rate assumption of 3.5% when determining the lump-sum present value of lost future earnings or other future damages in respect of injury or death related to a motor vehicle accident.

Section 4 (2) of the same regulation provides an alternate mandated discount rate that is based on Government of Canada bonds and the Consumer Price Index and is effective as of January 1, 2005. We understand that there is uncertainty in the legal community concerning the applicability and the proper interpretation of section 4 (2).

Rule 70.06 (1) of the Nova Scotia Civil Procedure Rules requires use of the mandated discount rate assumption of 2.5% when determining the lump-sum present value of lost future earnings or

other future damages in respect of injury or death *not* resulting from a motor vehicle accident. We understand that this rule was adopted in 1980 and has not changed since then, although its scope was altered by the enactment of the Automobile Insurance Tort Recovery Limitation Regulations.

The discount rate is a critical determinant of the present lump-sum value of future losses or costs. In the absence of mandated discount rates, the real rate of return would often be the most important assumption that an actuary would make in the context of an economic loss calculation.

There has been growing concern in the actuarial evidence field that mandated discount rates in Nova Scotia and elsewhere in Canada have diverged materially from the discount rates that actuaries would use in the absence of mandated rates. It is this concern that led the CIA's Committee on Actuarial Evidence to commission the research project outlined below.

Evolution of the Economic Environment Since 1980

The CIA, in the course of its regular activities, observes key economic factors and produces an annual Report on Canadian Economic Statistics for its members.

In the early 1980s when the current Nova Scotia mandated discount rates were being developed, both nominal rates of return and inflation rates were much higher than today.

However, for almost 20 years now, inflation rates have been relatively stable. Since 1995, the Bank of Canada's goal has been to keep the Consumer Price Index close to 2% and within the control range of 1% to 3%. For the most part, that has been achieved on a consistent basis.

Nominal rates of return have also decreased materially over this time period. For example, the Government of Canada benchmark long-term bond yield (series V122544) was only 2.4% in December 2012.

In recent years, there has been a general narrowing of the spread between nominal rates of return and inflation rates, and thus a decline in the real rate of return (which is typically defined as the difference between, or a ratio involving, the nominal rate of return and the inflation rate):

Year	Long-Term Government of Canada Bond Yield	Total CPI	Difference
1977	9.2%	8.0%	1.2%
1978	10.0%	8.9%	1.1%
1979	11.6%	9.3%	2.3%
1980	13.0%	10.0%	3.0%
1981	15.5%	12.5%	3.0%
1986	8.9%	4.1%	4.8%
1991	9.0%	5.6%	3.4%
1996	5.7%	1.5%	4.2%
2001	4.1%	2.5%	1.6%
2006	4.1%	2.0%	2.1%
2011	2.5%	2.9%	-0.4%
2012	2.4%	1.5%	0.9%

Although there has been a general trend to lower real rates of return in recent years, significant year-over-year fluctuations continue to occur and there is no consensus on future trends.

Observations

The determination as to whether or not the current mandated discount rates are appropriate in today's economic environment will be based on both a technical actuarial/economic analysis and on the relative importance of other considerations such as:

- Equity between the parties;
- Protection of the interests of possibly financially unsophisticated plaintiffs/victims;
- Control of insurance claim costs;
- Recognition (or not) of potential future "productivity" effects; and
- Recognition (or not) of investment management costs.

These considerations may be valid reasons for diverging from an unbiased estimate of future real returns—the "actuarially or economically correct" rate. Thus, the relative importance of these considerations may dictate mandated discount rates that are "too high" (to control the cost of claims and indirectly control insurance costs, for example) or "too low" (to bias settlements in favour of the financial security of the plaintiff, for example). We recognize that these "public policy" considerations may take precedence over any technical considerations. However, decision-makers would ideally identify the objectives behind the mandated rates and communicate them to stakeholders.

For a variety of reasons, identified objectives may not necessarily be best achieved by mandated discount rates that are fixed over long periods of time across a variety of economic conditions.

At any time, the financial impact of using mandated discount rates that are inconsistent with the current economic environment is significant. The impact of Nova Scotia's current regime is adverse for plaintiffs at present (except where the section 4 (2) discount rate is used), but also potentially for defendants at some future date. In our opinion, a review of the current regime would be in the public interest in order to ensure that the courts make pecuniary damage awards that are reflective of the government's overall objectives in this area and to clarify the mandated discount rates to use if the injury or death is the result of a motor vehicle accident. One goal of our research initiative is to provoke consideration of such a review in the Canadian jurisdictions that have not recently engaged in such an exercise.

Research Project

As mentioned earlier, the CIA's Committee on Actuarial Evidence is commissioning a public interest research project that will analyze a broad range of issues related to discount rates for civil litigation and explore questions such as those outlined in this letter. The goal is to research both economic and other considerations in order to proactively provide policymakers across Canada with relevant input. The request for research proposals has been released. We expect to select a researcher early in the fall and to conclude the project early in 2014.

For this project, the CIA and the researcher will solicit input from the various provincial and territorial governments and other interested parties. The input will assist the researcher in better understanding the considerations that are important when a government establishes or modifies mandated discount rates. This will help to guide the direction of the research.

We will follow up with you shortly in order to confirm the most appropriate contact person for this purpose. We will share the results of our research with you when it is complete.

Appendix B

Summary of Provincial and Territorial Legislation Pertaining to Discount Rates for Civil Litigation

Province	Mandated Rates as of 2013	Date of Most Recent Change	Reference / Background
Alberta	No mandated rate	n.a.	n.a.
British Columbia	Loss of earnings: 2.50% Future Care/Other Damages: 3.50%	1981	Law and Equity Act, R.S.B.C. 1996, c. 253, s. 56 Law and Equity Regulation, BC Reg. 352/81
Manitoba	3.00%	1993	Court of Queen's Bench Act, S.M. 1988-89, c. 4 (C.C.S.M. c. C280), s. 83(2) S.M. 1993, c. 19, s. 5.
New Brunswick	2.50%	1986	New Brunswick Rules of Court, N.B. Reg. 82-73, Rule 54.10(2)
Newfoundland and Labrador	No mandated rate	n.a.	n.a.

Province	Mandated Rates as of 2013	Date of Most Recent Change	Reference / Background
Nova Scotia	NOT a motor vehicle accident (non-MVA): 2.50% MVA: 3.50%. However the regulation provides that, effective January 1, 2005, the discount rate for each calendar year may be based on the difference between the rate set for Government of Canada bonds and the consumer price index for the previous 12 months.	Non-MVA: 1980 MVA: 2003 Note: Prior to November 2003, the mandated rate for MVAs was 2.50%.	Civil Procedure Rules r. 70.06(1) Insurance Act s.113C Automobile Insurance Tort Recovery Limitation Regulations O.I.C. 2003-457, N.S Reg. 182/2003, s. 113c.
Northwest Territories	2.50%	Could not confirm	Judicature Act, R.S.N.W.T. 1988, c. J-1, s. 57(1)
Nunavut	2.50%	1998	Judicature Act, SNWT (Nu) 1998, c 34 s 1, s. 56(1)

APPENDIX B

Province	Mandated Rates as of 2013	Date of Most Recent Change	Reference / Background
Ontario	For Trials Commencing After January 1 of: **Year** **Select (1)** **Ultimate (2)** 2000 3.00% 2.50% 2001 2.75% 2.50% 2002 2.50% 2.50% 2003 2.50% 2.50% 2004 2.25% 2.50% 2005 1.50% 2.50% 2006 1.00% 2.50% 2007 0.75% 2.50% 2008 0.75% 2.50% 2009 0.75% 2.50% 2010 1.25% 2.50% 2011 0.50% 2.50% 2012 0% 2.50% 2013 -0.50% 2.50% (1) Select Rate applies for the 15-year period from the start of the trial (2) Ultimate Rate applies thereafter	Annual review. Current rule was introduced in 1999. Between 1980 and 1999, the mandated rate was 2.5% for all periods. The formula to determine the select discount rate will change as of January 1, 2014.	Rules of Civil Procedure, R.R.O. 1990, Reg. 194 r. 53.09(1)(b) Ontario also mandates inflation rates for income tax gross-up calculations as follows: For Trials Commencing After January 1 of: **Year** **Select (1)** **Ultimate (2)** 2000 2.25% 2.75% 2001 3.00% 3.50% 2002 3.25% 3.25% 2003 3.00% 3.25% 2004 3.00% 2.75% 2005 3.50% 2.50% 2006 3.50% 2.00% 2007 3.75% 1.75% 2008 3.50% 1.75% 2009 3.25% 1.50% 2010 2.75% 1.25% 2011 3.25% 1.25% 2012 3.25% 1.00% 2013 3.00% 0.00% (1) Select Rate applies for the 15-year period from the start of the trial (2) Ultimate Rate applies thereafter

Province	Mandated Rates as of 2013	Date of Most Recent Change	Reference / Background
Prince Edward Island	2.50%	Not since 1994 PEI adopted Ontario Rules of Civil Procedure in 1990 but does not seem to have harmonized subsequent to Ontario's 1999 changes.	Prince Edward Island Rules of Civil Procedure, r. 53.09(1)
Québec	Loss of earnings: 2.00% Future Care (Goods): 3.25% Future Care (Services): 2.00%	Act: 1991 Regulation: 1997	Civil Code of Québec (S.Q., 1991, c. 64.) Regulation under article 1614 of the Civil Code respecting the discounting of damages for bodily injury, RRQ, c. CCQ, r. 1,
Saskatchewan	3.00%	Could not confirm	Saskatchewan Queen's Bench Rules, r. 9-21(1)(b)
Yukon	No mandated rate	n.a.	n.a.

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Appendix C

Illustration of the Effect of Mandated Discount Rates in Different Jurisdictions

Present value of a loss of $50,000 annually to age 65 to a male, age 40 at valuation, mortality decrement only (Statistics Canada 2007-09 Life Table).

Province	Mandated Rates as of 2013	Present Value
Alberta	No mandated rate	-
British Columbia	Loss of earnings: 2.50% Future Care/Other Damages: 3.50%	LOE: $902,000 FC: $813,000
Manitoba	3.00%	$856,000
New Brunswick	2.50%	$902,000
Newfoundland and Labrador	No mandated rate	-
Nova Scotia	Non-MVA: 2.50% MVA: 3.50% (Reg 4(1)) MVA: 0.37% (Reg 4(2) for 2012)	Non-MVA: $902,000 MVA(1): $813,000 MVA(2): $1,149,000
Northwest Territories	2.50%	$902,000
Nunavut	2.50%	$902,000
Ontario	-0.50% for 15 years, 2.50% thereafter	$1,210,000
Prince Edward Island	2.50%	$902,000
Québec	Loss of earnings: 2.00% Future Care (Goods): 3.25% Future Care (Services): 2.00%	LOE: $953,000 FC(G):$834,000 FC(S): $953,000
Saskatchewan	3.00%	$856,000
Yukon	No mandated rate	-

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Canadian Institute of Actuaries / Institut canadien des actuaires

January 13, 2015

Douglas H. Murphy
Superintendent of Insurance, Credit Unions, Trust and Loan Companies
Nova Scotia Department of Finance and Treasury Board
Financial Institutions Division
1723 Hollis Street, P.O. Box 187
Halifax, NS B3J 2N3

Dear Mr. Murphy,

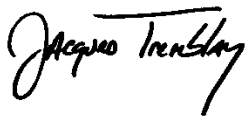
We understand that your office is in the process of conducting a review of section 4 of Automobile Insurance Tort Recovery Limitation Regulation 83/2003 under the Insurance Act. The Canadian Institute of Actuaries (CIA) has prepared a submission, which is attached, to assist you in that review.

Our key recommendations are as follows:

a. Introduce a formula-based approach and an automatic "periodic reset" of the mandated discount rates, similar to the current section 4(2) but more specific and less ambiguous about exactly how the discount rate is to be determined.
b. Adopt a stepped rate format to replace the level rate format of the current sections 4(1) and 4(2).
c. Carefully consider the structure and number of mandated rates. For example, is it best to mandate "real" discount rates as at present, or instead mandate a nominal discount rate and a separate inflation assumption? Is it best to mandate the same discount rate for all heads of damage as at present, or instead to mandate different discount rates for different heads of damage?

Thank you for taking the time to review our submission. If you have any questions, please do not hesitate to contact Chris Fievoli, the CIA's resident actuary, at 613-656-1927 or chris.fievoli@cia-ica.ca.

Yours truly,



Jacques Tremblay, CIA President
jacques.tremblay@cia-ica.ca

APPENDIX C

Submission of the Canadian Institute of Actuaries to the Government of Nova Scotia

Review of Prescribed Discount Rates for Civil Litigation Purposes (Injury or Death Related to a Motor Vehicle Accident)

Introduction

The Canadian Institute of Actuaries (CIA) is the national organization of the actuarial profession in Canada. As you know, actuaries apply their specialized knowledge in mathematics of finance, statistics, contingencies, and risk theory to the problems faced by pension plans, government regulators, insurance companies, and other financial institutions, social programs, and individuals. Of specific relevance here, actuaries play a key role in civil litigation cases by assisting counsel and the courts in the quantification of pecuniary damages.

Actuaries are uniquely qualified to serve as expert witnesses in such matters. They assist the parties and the court by determining the present value of lost past and future earnings, lost pension and other benefits, lost valuable services, and the cost of future care. In these endeavours, our Standards of Practice require us to act in an independent, unbiased, and non-partisan manner.

The CIA holds the duty of the profession to the public above the needs of the profession and its individual members. We serve both the public interest and our members by:

- Establishing and maintaining professional guidance, quality education, validation of eligibility, and continuing professional development requirements;
- Conducting research;
- Maintaining a code of conduct and a disciplinary process of the highest standard; and
- Making meaningful and timely contributions to public policy.

This submission stems from our desire to contribute to public policy discussions, and to provide relevant research in support of government decisions.

Terminology

To actuaries, “prescribed” has two possible meanings. Discount rates are *prescribed* by legislation. Other actuarial assumptions may be *prescribed* by the Standards of Practice of the CIA. To avoid confusion, actuaries generally refer to assumptions being *mandated* when prescribed by legislation and *prescribed* when prescribed by their professional standards of practice. We have adopted this convention in this submission, and therefore refer to mandated discount rates.

“Nominal” rates refer to the rates of return on investments.

“Real” rates refer to the difference between the investment rate of interest and the rate of increase in earnings and/or price inflation.

Actuaries’ Contribution to the Civil Litigation Process

In Canada, actuaries participate regularly in the civil litigation process, usually in the role of an expert who is retained to opine on the value of pecuniary losses resulting from bodily injury, death, or wrongful dismissal.

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In determining the lump-sum present value of losses, the actuary must make assumptions concerning expected mortality and disability patterns and future economic conditions, and sometimes also concerning future earnings levels and future pension accruals.

Professional standards of practice require that the actuary comply with any applicable laws and regulations. For this reason, the actuary will use legally mandated assumptions where they exist. In the absence of mandated assumptions, the actuary will determine and use assumptions that are appropriate for the matter at hand.

Mandated Discount Rates for Nova Scotia

As you know, section 4(1) of Automobile Insurance Tort Recovery Limitation Regulation 83/2003 under the Insurance Act, enacted in 2003, requires use of the mandated discount rate assumption of 3.5% when determining the lump-sum present value of lost future earnings or other future damages in respect of injury or death related to a motor vehicle accident. This mandated discount rate is generally interpreted by actuaries as a "real" discount rate, representing the difference between the investment rate of interest and the rate of general price inflation. However, this is not explicitly specified in the regulation.

Section 4(2) of the same regulation provides for an alternate mandated discount rate that is based on Government of Canada bonds and the Consumer Price Index (CPI), and is effective as of January 1, 2005. We understand that, prior to the 2013 Brocke Estate v. Crowell decision, there was uncertainty in the legal community concerning the applicability and the proper interpretation of section 4(2). Assuming that the formula refers to long-term nominal Government of Canada bonds and the total CPI, the resulting mandated rate for 2014 would be 1.94%.

In contrast to sections 4(1) and 4(2), rule 70.06(1) of the Nova Scotia Civil Procedure Rules requires use of a mandated discount rate of 2.5% when determining the lump-sum present value of lost future earnings or other future damages in respect of injury or death *not* resulting from a motor vehicle accident. We understand that this rule was adopted in 1980 and has not changed since then, although its scope was altered by the enactment of the Automobile Insurance Tort Recovery Limitation Regulations in 2003.

For purposes of comparison, a table summarizing the mandated discount rates in all of the Canadian jurisdictions is attached as appendix A to this submission. Appendices B and C then provide illustrative calculations of loss using the various mandated discount rates.

In the absence of mandated discount rates, the real rate of return would often be the most important assumption that an actuary would make in the context of an economic loss calculation. The discount rate is a critical determinant of the present lump-sum value of future losses or costs.

In the past few years, there has been growing concern in the actuarial evidence field that mandated discount rates in some Canadian jurisdictions have diverged materially from the discount rates that actuaries would use in the absence of mandated rates. Thus the review that you have initiated is timely.

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Evolution of the Economic Environment

The CIA, in the course of its regular activities, observes key economic factors and produces the annual Report on Canadian Economic Statistics.

In the early 1980s, when many of Canada's mandated discount rates were developed, both nominal rates of return and inflation rates were much higher than today:

Year	LT GOC Bond Yield[1]	Total CPI Increase	Difference
1977	9.2%	8.0%	1.2%
1978	10.0%	8.9%	1.1%
1979	11.6%	9.3%	2.3%
1980	13.0%	10.0%	3.0%
1981	15.5%	12.5%	3.0%

However, for almost 20 years now, inflation rates have been lower and relatively stable. In 1991, Canada became the second country in the world (after New Zealand) to adopt an inflation-targeting framework for its central bank monetary policy. The framework has been reviewed and renewed on a regular basis, most recently in 2011. The next review will occur in 2016. Since 1995, the Bank of Canada's goal has been to keep the CPI close to 2% and within the control range of 1% to 3%. For the most part, that has been achieved on a consistent basis.

Nominal rates of return have also decreased materially since the early 1980s. For example, the Government of Canada benchmark long-term bond yield (series V122544) was only 2.5% in November 2014.

[1] Bank of Canada benchmark yield for long-term Government of Canada bonds (series V122544) as of December of each year shown.

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In recent years, there has been a general narrowing of the spread between nominal rates of return and inflation rates, and thus a decline in the real rate of return (which is typically defined as the difference between, or a ratio involving, the nominal rate of return and the inflation rate):

Year	Long-Term Government of Canada Bond Yield[2]	Total CPI[3]	Difference
1977	9.2%	8.0%	1.2%
1978	10.0%	8.9%	1.1%
1979	11.6%	9.3%	2.3%
1980	13.0%	10.0%	3.0%
1981	15.5%	12.5%	3.0%
1982	11.9%	10.8%	1.1%
1983	12.3%	5.9%	6.4%
1984	12.0%	4.3%	7.7%
1985	10.0%	4.0%	6.0%
1986	8.9%	4.2%	4.7%
…	…	…	…
1991	9.0%	5.6%	3.4%
…	…	…	…
1996	5.7%	1.5%	4.2%
…	…	…	…
2001	4.1%	2.5%	1.6%
…	…	…	…
2006	4.1%	2.0%	2.1%
2007	4.2%	2.1%	2.1%
2008	3.5%	2.4%	1.1%
2009	4.1%	0.3%	3.8%
2010	3.5%	1.8%	1.7%
2011	2.5%	2.9%	-0.4%
2012	2.4%	1.5%	0.9%
2013	3.2%	0.9%	2.3%
2014	2.5%	2.0%	0.5%

Although there has been a general trend to lower real rates of return in recent years (the right-hand column of the table above), significant year-over-year fluctuations continue to occur.

Observations

The determination as to whether or not the current section 4(1) mandated discount rate is appropriate in today's economic environment, and whether or not a more specific version of

[2] Bank of Canada benchmark yield for long-term Government of Canada bonds (series V122544) as of December of each year shown (as of November 2014; December is not yet available).
[3] Average total CPI for each calendar year.

section 4(2) should be introduced, will be based on both a technical actuarial/economic analysis and on the relative importance of other considerations, such as:

- Equity between the parties;
- Protection of the interests of possibly financially unsophisticated plaintiffs/victims;
- Control of insurance claim costs;
- Recognition (or not) of potential future "productivity" effects; and
- Recognition (or not) of investment management costs.

Such considerations are valid reasons for diverging from an unbiased estimate of future real returns—the "actuarially or economically correct" rate. Thus, the relative importance of these considerations may dictate mandated discount rates that are "too high" (to control the cost of claims and indirectly control insurance costs, for example) or "too low" (to bias settlements in favour of the financial security of the plaintiff, for example). We recognize that these "public policy" considerations will necessarily take precedence over any technical considerations. However, decision-makers would ideally identify the objectives behind the mandated rates and communicate them to stakeholders. As we suggest in our first recommendation, identified objectives may not necessarily be best achieved by mandated discount rates that are fixed over long periods of time across a variety of economic conditions.

At any time, the financial impact of using mandated discount rates that are inconsistent with the current economic environment is significant. The impact of the discount rate of 3.5% that is mandated under section 4(1) is adverse for plaintiffs at present, but also potentially for defendants at some future date. We agree that a review of the current regime is in the public interest, to ensure that the courts make pecuniary damage awards that are reflective of the government's overall objectives in this area.

Recommendations

As mentioned earlier, the CIA holds the duty of the profession to the public above the needs of the profession and its individual members. We have chosen not to make a specific recommendation concerning the most appropriate mandated discount rate for pecuniary damages related to Nova Scotia motor vehicle accidents. However, we offer the following general recommendations which we hope you find helpful.

a. Formula and regular periodic reset mechanism

The economic environment can change rapidly. This was most recently demonstrated in 2008. In jurisdictions where civil litigation discount rates are explicitly specified in the legislation, the value of pecuniary damages based on the mandated rates may be materially higher or lower than the value based on actual real rates of return available at the time that a damage award is made.

The legislation could mandate a formula instead of a value. The format would be similar to the current section 4(2), but with more specificity. The formula might have a structure such as: "the average of a certain yield measure over an n-month period ending two months prior to application of the formula, divided by the average inflation rate over the same time period". The discount rate determined by the formula would apply for the period of time specified in the

legislation. At the end of that period, the formula would be used to determine the new mandated discount rate for the next period. The resulting discount rates would be automatically more responsive to evolving economic circumstances.

The frequency of reset should strike a reasonable balance between simplicity and responsiveness. The period of averaging in the formula should strike a reasonable balance between stability and responsiveness.

We recommend that you consider a mandated formula approach, and that the formula provide for changes to the mandated discount rate to occur on a regularly-scheduled basis.

b. Stepped rate format

Interest and inflation rates will change over time. A level mandated real discount rate, as exists today in most Canadian jurisdictions, assumes that the underlying real rate of return will continue indefinitely.

We recommend adoption of a stepped interest and inflation (if applicable) rate format structured as follows:

- The rate for the first n years after the valuation date would be formula-based as described above; and
- The rate beginning at the end of n years from the valuation date would be fixed by regulation.

This structure implicitly assumes an eventual return to historical norms regardless of the then-current economic environment.

In reality, yield rates change slowly over time as assets mature and are reinvested in the then-current environment. The step in discount rates at n years is a convenient simplification of a more complex, theoretically more accurate discount rate model. In actuarial practice, n is typically between 10 and 20 years depending on the circumstances of the calculation.

This approach has the following advantages:

- It reflects the current economic environment to some degree, but does not rely on it entirely;
- It incorporates a reversion to historical norms, thus minimizing volatility from year to year; and
- The formula can be structured to ensure that the mandated rates are determinable several months in advance of the effective date, allowing all stakeholders time to prepare for the change.

The Province of Ontario has established a regime that is structured in the above manner. A staff member at the Ministry of the Attorney General calculates the mandated rates each year in early September. Members of the CIA Committee on Actuarial Evidence independently calculate the same rates and confirm the ministry's calculation. The mandated rates are then posted to the ministry's website. The CIA would be pleased to offer the same support to Nova Scotia if a formula-based regime is adopted.

c. Carefully consider the structure and number of mandated rates

Most future streams of loss-related payments will increase over time. However, certain future streams of loss-related payments will remain constant. Examples include non-indexed pensions and long-term disability benefits. The present regime does not provide guidance in respect of this latter category.

Also, income tax gross-up calculations require use of separate nominal return and inflation assumptions.

Regarding loss-related payments expected to increase over time, some will increase in line with general price inflation but others may not. For example, some medical care costs might be expected to increase at a rate higher than general price inflation. Earnings may also increase at a higher-than-inflation rate due to improvements in labour productivity, but may increase at a lower-than-inflation rate in some sectors for a variety of reasons.

As noted earlier, as this review progresses, we suggest that you consider questions such as:

- Is it best to mandate “real” discount rates as at present, or instead mandate a nominal discount rate and a separate inflation assumption?
- Is it best to mandate the same discount rate for all heads of damage as at present, or instead to mandate different discount rates for different heads of damage?

Conclusion

We hope that you find this submission helpful. Please do not hesitate to contact us if you require clarification of any element of the submission.

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Appendix A

Summary of Provincial and Territorial Legislation Pertaining to Discount Rates for Civil Litigation

Province	Mandated Rates as of 2015	Date of Most Recent Change	Reference/Background
Alberta	No mandated rate	N/A	N/A
British Columbia	Loss of earnings: 1.5% Future care/other damages: 2.0%	2014 Note: Prior to April 30, 2014, the mandated rates were: Loss of earnings: 2.5% Future care/other damages: 3.5%	Law and Equity Act, R.S.B.C. 1996, c. 253, s. 56 Law and Equity Regulation, BC Reg. 352/81
Manitoba	3.0%	1993	Court of Queen's Bench Act, S.M. 1988-89, c. 4 (C.C.S.M. c. C280), s. 83(2) S.M. 1993, c. 19, s. 5
New Brunswick	2.5% is the *default* rate, but evidence can be led that another rate is more appropriate	2014 Note: Prior to October 1, 2014, 2.5% had been the *required* rate since 1986	New Brunswick Rules of Court, N.B. Reg. 82-73, Rule 54.10(2)
Newfoundland and Labrador	No mandated rate	N/A	N/A

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Province	Mandated Rates as of 2015	Date of Most Recent Change	Reference/Background
Nova Scotia	NOT a motor vehicle accident (non-MVA): 2.50% MVA: 3.50%. However, the regulation provides that, effective January 1, 2005, the discount rate for each calendar year *may* be based on the difference between the rate set for Government of Canada bonds and the Consumer Price Index for the previous 12 months	Non-MVA: 1980 MVA: 2003 Notes: Prior to November 2003, the mandated rate for MVAs was 2.50% The MVA mandated rate rule is currently under review	Civil Procedure Rules r. 70.06(1) Insurance Act s.113C Automobile Insurance Tort Recovery Limitation Regulations O.I.C. 2003-457, N.S Reg. 182/2003, s. 113c
Northwest Territories	2.50%	Could not confirm	Judicature Act, R.S.N.W.T. 1988, c. J-1, s. 57(1)
Nunavut	2.50%	1998	Judicature Act, SNWT (Nu) 1998, c 34 s 1, s. 57(1)

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<table>
<tr><th>Province</th><th>Mandated Rates as of 2015</th><th>Date of Most Recent Change</th><th>Reference/Background</th></tr>
<tr>
<td>Ontario</td>
<td>For trials commencing after January 1 of:
<table>
<tr><th>Year</th><th>Select (1)</th><th>Ultimate (2)</th></tr>
<tr><td>2000</td><td>3.00%</td><td>2.50%</td></tr>
<tr><td>2001</td><td>2.75%</td><td>2.50%</td></tr>
<tr><td>2002</td><td>2.50%</td><td>2.50%</td></tr>
<tr><td>2003</td><td>2.50%</td><td>2.50%</td></tr>
<tr><td>2004</td><td>2.25%</td><td>2.50%</td></tr>
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<tr><td>2007</td><td>0.75%</td><td>2.50%</td></tr>
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<tr><td>2010</td><td>1.25%</td><td>2.50%</td></tr>
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<tr><td>2012</td><td>0%</td><td>2.50%</td></tr>
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<tr><td>2014</td><td>0.30%</td><td>2.50%</td></tr>
<tr><td>2015</td><td>0.30%</td><td>2.50%</td></tr>
</table>
(1) Select Rate applies for the 15-year period from the start of the trial
(2) Ultimate Rate applies thereafter</td>
<td>Annual review

Current rule was introduced beginning with 2014 trials

From 2000 to 2013, a different rule for automatic annual reset was in place

Between 1980 and 1999, the mandated rate was 2.5% for all periods</td>
<td>Rules of Civil Procedure, R.R.O. 1990, Reg. 194 r. 53.09(1)(b)

Ontario also mandates inflation rates for income tax gross-up calculations as follows:

For trials commencing after January 1 of:
<table>
<tr><th>Year</th><th>Select (1)</th><th>Ultimate (2)</th></tr>
<tr><td>2000</td><td>2.25%</td><td>2.75%</td></tr>
<tr><td>2001</td><td>3.00%</td><td>3.50%</td></tr>
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<tr><td>2003</td><td>3.00%</td><td>3.25%</td></tr>
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<tr><td>2014</td><td>2.30%</td><td>0.10%</td></tr>
<tr><td>2015</td><td>2.40%</td><td>0.20%</td></tr>
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(1) Select Rate applies for the 15-year period from the start of the trial
(2) Ultimate Rate applies thereafter</td>
</tr>
</table>

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Province	Mandated Rates as of 2015	Date of Most Recent Change	Reference/Background
Prince Edward Island	2.50%	Not since 1994 PEI adopted the Ontario Rules of Civil Procedure in 1990 but does not seem to have harmonized subsequent to Ontario's 1999 changes	Prince Edward Island Rules of Civil Procedure, r. 53.09(1)
Québec	Loss of earnings: 2.00% Future care (goods): 3.25% Future care (services): 2.00%	Act: 1991 Regulation: 1997	Civil Code of Québec (S.Q., 1991, c. 64.) Regulation under article 1614 of the Civil Code respecting the discounting of damages for bodily injury, RRQ, c. CCQ, r. 1
Saskatchewan	3.00%	Could not confirm	Saskatchewan Queen's Bench Rules, r. 284B(1)(b)
Yukon	No mandated rate	N/A	N/A

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Appendix B

Illustration of the Effect of Different Mandated Discount Rates across Canada – Loss of Earnings

Present value of a loss of $50,000 annually until age 65, to a male, mortality decrement only (Statistics Canada 2009-11 Life Table)

	Discount Rate	Valuation age 12 Commencement age 25	Percentage of Current	Valuation age 40 Commencement age 40	Percentage of Current
Nova Scotia (non-MVA)	2.5%	$893,000	100%	$904,000	100%
Alberta	-	-	-	-	-
British Columbia					
• Previous	2.5%	$893,000	100%	$904,000	100%
• Current	1.5%	$1,200,000	134%	$1,009,000	112%
Manitoba	3.0%	$775,000	100%	$857,000	100%
New Brunswick (default)	2.5%	$893,000	100%	$904,000	100%
Newfoundland & Labrador	-	-	-	-	-
Nova Scotia (2014)					
• MVA Reg 4(1)	3.5%	$675,000	76%	$814,000	90%
• MVA Reg 4(2)	1.94%	$1,052,000	118%	$961,000	106%
Northwest Territories	2.5%	$893,000	100%	$904,000	100%
Nunavut	2.5%	$893,000	100%	$904,000	100%
Ontario					
• 2013 trials	-0.5% for 15 years, then 2.5% thereafter	$1,391,000	156%	$1,213,000	134%
• 2014 and 2015 trials	0.3% for 15 years, then 2.5% thereafter	$1,235,000	138%	$1,118,000	124%
Prince Edward Island	2.5%	$893,000	100%	$904,000	100%
Québec	2.0%	$1,033,000	116%	$955,000	106%
Saskatchewan	3.0%	$775,000	87%	$857,000	95%
Yukon	-	-	-	-	-

Appendix C

Illustration of the Effect of Different Mandated Discount Rates across Canada – Future Care Costs (Goods)

Present value of a loss of $20,000 annually for life, to a male, mortality decrement only (Statistics Canada 2009-11 Life Table)

	Discount Rate	Valuation age 12 Commencement age 12	Percentage of Current	Valuation age 40 Commencement age 40	Percentage of Current
Nova Scotia (non-MVA)	2.5%	$647,000	100%	$500,000	100%
Alberta	-	-	-	-	-
British Columbia					
• Previous	3.5%	$516,000	80%	$425,000	85%
• Current	2.0%	$735,000	114%	$547,000	109%
Manitoba	3.0%	$576,000	89%	$460,000	92%
New Brunswick (default)	2.5%	$647,000	100%	$500,000	100%
Newfoundland & Labrador	-	-	-	-	-
Nova Scotia (2014					
• MVA Reg 4(1)	3.5%	$516,000	80%	$425,000	85%
• MVA Reg 4(2)	1.94%	$747,000	115%	$553,000	111%
Northwest Territories	2.5%	$647,000	100%	$500,000	100%
Nunavut	2.5%	$647,000	100%	$500,000	100%
Ontario					
• 2013 trials	-0.5% for 15 years, then 2.5% thereafter	$931,000	144%	$702,000	140%
• 2014 and 2015 trials	0.3% for 15 years, then 2.5% thereafter	$843,000	130%	$639,000	128%
Prince Edward Island	2.5%	$647,000	100%	$500,000	100%
Québec	3.25%	$545,000	84%	$442,000	88%
Saskatchewan	3.0%	$576,000	89%	$460,000	92%
Yukon	-	-	-	-	-