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AVOIDING THE GARDEN PATH OF MATHEMATICS WITH THE BAROMETER OF FAIRNESS:
AN ANALYSIS OF DISCOUNT RATES IN CANADIAN CASE LAW, AND LESSONS FOR BUSINESS VALUATOR EXPERTS

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"Uncertainty is the only certainty there is, and knowing how to live with insecurity is the only security."

–John Allen Paulos, Professor of Mathematics

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I. Introduction

Commercial litigation dealing with damages for future losses often requires business valuators to give expert evidence on loss quantification and discount rates. These experts face the difficult task of assigning something certain, a number, to something uncertain, the future. This oxymoronic task of predicting the unpredictable is the conundrum of discount rates, and although it may seem illogical, it is the state of Canadian law that a party may be compensated for as yet unrealized losses.

So, litigants, lawyers, experts and judges must all learn how to live and thrive with the certainty of the uncertain. For those involved in an action dealing with future losses damages, it may be difficult to accept the inherent uncertainty of their quantification when the application of one discount rate over another could mean the "difference between a multi-million dollar recovery and no recovery at all."[1]

This uneasiness with uncertainty and with the seemingly haphazard canon of case law on the subject has led to the penning of many articles by business valuators or experts in the field. They attempt to give judges and lawyers the tools to better tackle the mysterious topic of discount rates.[2] Canadian provincial legislatures have also attempted to remedy discount rate inconsistency and uncertainty by prescribing in their own civil procedure rules rates to be applied in all cases.[3]

This paper, however, takes a bit of a different approach. Our purpose here is twofold:

1. to provide an overview of discount rates in Canadian case law with a particular focus on commercial cases. Our principal finding is this: **discount rates regarding damages quantification appear to be largely governed by judicial discretion.** Judges often eschew the mathematical precision that expert witnesses espouse, and instead rely on "fairness" as their quantifying barometer for navigating the uncertainty of future losses. It is "fairness"- or what a given judge perceives as fairness - that rules the day in the discount rate realm.

2. to offer more practical considerations for business valuators acting as experts, especially on how to approach crafting expert reports and testimony in light of our "fairness" finding above. In our view, **experts should approach their evidence keeping in mind that judges (a) are not seeking mathematical precision but, rather, fairness and (b) will perform a final analysis of the facts to determine the discount rate using their own discretion.**

II. Scope of Discussion

Discount rates have different meanings and applications depending on the class of litigation they are used in or the type of damage being quantified.

In this paper we will focus on discount rates being used to establish the *present value of a future loss*. Generally, the case law we cite will be from the commercial litigation world, dealing with loss of future profits. However, discount rates figure extensively in other types of litigation, personal injury in particular, so we also cite non-commercial cases setting out principles that apply generally.

III. Why have a discount rate at all?

The object of common law compensatory damages is to put the party complaining of a breach or wrong in the position they would have been in had the "wrong not been done" or "if [their] rights had been observed".[4]

With claims for loss of future profits, however, the position that the party would have been in is patently uncertain. Even the most assured future is subject to contingencies, positive and negative. Yet, the courts have been clear: while lost future profits or value are often hard to quantify, they should nevertheless be awarded if proven.[5]

At the same time, the uncertainty and contingencies entail the potential unfairness of a defendant having to pay for losses that a plaintiff may not actually suffer. Out of fairness to both parties, then, discount rates allow the court to strike a balance between fair compensation to the plaintiff and sparing the defendant from overpaying.[6]

IV. What is in a discount rate?

Discount rates achieve that balance via the "present value" analysis. This comprises two separate elements: (1) a discount of the lump sum award for the time value of money, and (2) a discount for the risk that all or part of the estimated profits or increase in value may not be realized. As our Supreme Court has said:

> The value of money decreases with the passage of time. A dollar today is worth more than the same dollar tomorrow. Three factors account for the depreciation of the value of money: (i) opportunity cost (ii) risk, and (iii) inflation[7].

Accounting for these three factors underlies the challenge in determining discount rates.

I. Discounting for the time value of money

Where a court estimates that a defendant has caused the plaintiff to lose $100 of future profits, the plaintiff is likely not entitled to compensation from the defendant for the full $100. Rather, the court will award a discounted lower amount to account for the time value of money.

Why? When awarding a monetary award for future loss of profits, account must be taken of the principle that a dollar today is worth more than a dollar tomorrow. This is the case because a dollar acquired today has the potential to turn a profit as it may, at the very least, "be invested at interest to yield more than a dollar a year from now".[8] The court's aim in accounting for the time value of money is to ensure the award granted is a "sufficient sum to replace the lost income out of blended payments of interest and capital leaving nothing at the end (a self-extinguishing fund).[9]

1   Robert Lloyd, "Discounting Lost Profits in Business Litigation: What Every Lawyer and Judge Needs To Know" (2007) 9:1 Transactions: The Tennessee Journal of Business Law 9 at 10.

2   See for example: Scott R Gordon, Howard A Gorman and Gunnar Benediktsson, "May You Litigate in Interesting Times: Specific Performance, Mitigation, and Valuation Issues in a Rising (or Falling) Market", 2018 56-2 Alberta Law; Review 367, 2018 CanLIIDocs 259, http://www.canlii.org/t/2cvx; Robert Lloyd, "Discounting Lost Profits in Business Litigation: What Every Lawyer and Judge Needs To Know" (2007) 9:1 Transactions: The Tennessee Journal of Business Law 9; and Farley Cohen and Prem Lobo, " Business value as a measure of loss in litigation contexts: Reflecting business "reality" over hypothetical "fantasy" (2011) The Advocates' Journal http://www.cohenhamiltonsteger.com/docs/default-source/default-document-library/class-action-defense-quarterly-5_4.pdf?sfvrsn=2

3   See: for example, the *Ontario the Rules of Civil Procedure*, R.R.O. 1990, Reg. 194, r. 53.09; for Quebec the Civil Code of Quebec, LRQ, c C-1991, Article 1614; for British Columbia, *British Columbia Law and Equity Act*, RSBC 1996, c 253, Section 56; for Saskatchewan, *The Queen's Bench Rules*, Rule 284(1)(b); for Manitoba, *Court of Queen's Bench Act*, CCSM, c C280, Section 83(2); for New Brunswick, *Rules of Court*, NB Reg 82-73, Rule 54.10(2); for Nova Scotia, *Civil Procedure Rules*, NS Reg 370/2008, Rule 31.10(2); and for Prince Edward Island, *Supreme Court Rules of Civil Procedure*, Rule 53.09(1).

4   S.M. Waddams, *Law of Damages* (Toronto: Thomson Reuters Canada Limited, 2018) (loose-leaf updated 2018, release 27) ch 5 at 5.10; *Townsend v. Kroppmanns*, 2004 SCC 10 (CanLII), [2004] 1 S.C.R. 315, at para. 5

5   See: *Lister (Ronald Elwyn) Ltd. v. Dunlop Canada Ltd.*, 1982 CarswellOnt 727, [1982] 1 S.C.R. 726, 135 D.L.R. (3d) 1; *Barnes (William R.) Co. Ltd. v. MacKenzie (1974)*, 1974 CarswellOnt 269, 44 D.L.R. (3d) 9, 2 O.R. (2d) 659 (C.A.); D.J. Lowe (1980) *Ltd. v. Nova Scotia (Attorney General) (1993)*, 1993 CarswellNS 152, 121 N.S.R. (2d) 361, 9 C.L.R. (2d) 181 (S.C.); *Ticketnet Corp. v. Air Canada (1997)*, 1997 CarswellOnt 4273, 154 D.L.R. (4th) 271, 105 O.A.C. 87 (C.A); *Roe, McNeill & Co. v. McNeill*, 1998 CarswellBC 324, [1998] 7 W.W.R. 175 (B.C.C.A.); *Cadbury Schweppes Inc. v. FBI Foods Ltd.*, 1999 CarswellBC 77, [1999]

6   *Townsend v. Kroppmanns*, [2004] 1 SCR 315, 2004 SCC 10 (CanLII) at para. 5

7   *Bank of America Canada v. Mutual Trust Co.*, [2002] 2 S.C.R. 601, 2002 SCC 43 (CanLII) at para. 21.

8   Lloyd, *supra* note 1, at 12.

9   Waddams, *supra* note 4, ch 9 3.990.

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Imagine that an oil spill contaminated a lake known for its commercial fishing. As a result of the contamination to the fish, the licensed commercial fishing companies lost the ability to fish. The valuator's exercise would be to estimate what damages one or more of the companies sustained as a result of losing the ability to fish.

Let's assume the average profit made on the fish was $10 per pound, and each company sold approximately 1000 pounds per week. Assuming that environmental experts projected the contamination preventing commercial fishing to have a 10-year lifespan, simply multiplying the $10,000 lost per week ($10 x 1000) by the number of weeks (52 x 10) would not yield a fair valuation. Why? Because all of those fish weren't lost in a single day. Rather, the challenge would be to calculate the loss over time.

Generally speaking, discount rates look at rates of return, expressed in percentages. They represent an "investor's reward for making an investment".[10] To determine the best rate of return, business valuators often look to capital market rates.[11]

II. Discounting for risk and uncertainty: The risk premium

Courts accept that awards for future losses should be discounted for the risk that such predictions carry uncertainty. Discounting an award for the unpredictable elements of the future is common to all cases where damages for future losses are awarded.

In the landmark case of *Andrews v. Grand & Toy Alberta Ltd.*[12], Justice Dickson (as he then was), speaking for the unanimous Supreme Court of Canada, described the practice of discounting future loss amounts for the uncertainties of future risks as accounting for "contingencies and hazards of life".

This element of the discount rate will be referred to as the "risk premium".

Returning to our contaminated lake example: in order to determine the risk premium, and properly value the damage sustained by the loss of the fishing rights, the valuator would need to assess a number of risk factors. These would include, but are not limited to, not knowing with any degree of certainty how long the damage will continue, fluctuations in supply from year to year, fluctuations in prices, and uncertainty with respect to future wages and other expenses.

The challenge for a Court is to determine at the date of trial how to present value the loss resulting from the inability to fish. As we recommend below, the prudent valuator will assess and enumerate the risk factors leading to the conclusion of an appropriate discount rate by clearly setting out the various risk factors in their report. Doing so will give the judge who seeks to find a fair level of compensation an easier way of determining a fair result for the aggrieved party.

There is a body of law known as "loss of chance" cases: a party has lost the chance to pursue a commercial opportunity (including the opportunity to sue). While they differ from discount rate cases, loss of chance cases bear helpful similarities. After establishing the value of the plaintiff's lost chance (opportunity), the court must discount it by the likelihood, or perhaps more appropriately the improbability, of the plaintiff actually realizing the benefit that could have resulted from the lost opportunity.[13] Loss of chance cases include situations where:

> a contract is breached so that a party is deprived of an "opportunity" to obtain a benefit that was speculative at the time the contract was entered into, the party has suffered a "loss of chance" or "loss of opportunity." Had the contract been completed, the wronged party may or may not have obtained the

> benefit sought, but since the party has been deprived of the chance to obtain the benefit, that party may seek damages for the value of the lost opportunity.[14]

In *Folland v. Reardon*[15], the Ontario Court of Appeal set out four criteria for recovery on the basis loss of a chance. The plaintiff must show that:

1. on the balance of probabilities, but for the defendant's wrongful conduct, the plaintiff had a chance to obtain a benefit or avoid a loss;

2. the chance lost was sufficiently real and significant to rise above mere speculation;

3. the outcome, that is, whether the plaintiff would have avoided the loss or made the gain, depended on someone or something other than the plaintiff himself or herself; and

4. the lost chance had some practical, i.e. non-nominal, value.

To illustrate, in *Southcott Estates Inc. v. Toronto Catholic District School Board*[16], the defendant school board, breached an agreement of purchase and sale to sell a parcel of land to the plaintiff land developer. As a result, the plaintiff lost the chance to develop the property. Since a severance of the property would have been needed and other development issues would have required resolution, the trial judge found that there was a 60% chance of completing the transaction with a completed severance. The lost profit calculation of damages was reduced by 40%.

These cases in which the benefit is only a chance or possibility rather than a certainty typically see awards discounted at such high rates as 50% or even higher.[17]

As mentioned, there are helpful elements in loss of chance cases that help grasp the elements of their discount rate kin. However, the similarities only go so far. The two are and must remain distinct creatures.

III. How is the risk premium determined?

The Alberta Court of Appeal has described the risk premium in commercial breach of contract cases as a way to account for the "various vicissitudes of the marketplace, the major ones being competition and swings in business cycles".[18]

A first consideration for determining the risk premium is the kind of evidence available. Where, for example, a business has been operating steadily and there is evidence that the market for the business will not change significantly, experts may rely on past profits to project future ones.[19] This is not considered a "risky" estimate. The risk premium added into the discount rate will likely be lower here, assuming that there is a history of profits.

In contrast, a business without recorded profits yet, but with future potential (one thinks of today's tech start-ups) will attract a much higher risk premium. Without the evidence of past profits there is more uncertainty about the predicted profits' realization.[20]

10 Tyler L. Farmer and Neil J. Beaton, "Lost Profits Versus Lost Business Value" in Nancy J. Fannon, Jonathan M. Dunitz, eds, *The Comprehensive Guide to Lost Profits and Other Commercial Damages, 3rd* ed (Business Valuation Resources, 2014) at 344.

11 *Ibid*, page 345.

12 [1978] 2 SCR 229, 1978 CanLII 1 (SCC).

13 *Eastwalsh Homes Ltd. v. Anatal Developments Ltd.*, 1993 CarswellOnt 587, 12 OR (3d) 675 at para 38; *Trillium Motor World Ltd. v General Motors of Canada Limited*, 2015 ONSC 3824 at para 605.

14 *IFP Technologies (Canada) v Encana Midstream and Marketing*, 2014 ABQB 470 at para 273.

15 2005), 74 O.R. (3d) 688 at par. 73 (C.A.).

16 [2009] O.J. No. 428, reversed on other grounds 296 O.A.C. 4, 2012 SCC 51.

17 See for example: in *Strategic Acquisition Corp v Multus Investment Corporation*, 2016 ABQB (a discount of 50% was applied); *IFP Technologies (Canada) Inc. v EnCana Midstream and Marketing*, 2017 ABCA 157 (a discount of 100% was applied).

18 *Plaza Deli, supra* note 13, at para 23.

19 See for example: *Spartek Systems Inc v Brown*, 2014 ABQB 526.

20 See for example: *Husky Injection Molding Systems Ltd. v. Schad*, 2016 ONSC 2297; *Rougemount Capital Inc. v. Computer Associates International Inc.*, 2014 ONSC 7070.

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That said, a lack of evidence of past profits does not necessarily mean that a high-risk premium should or will be applied. Where the court can determine, based on a factual analysis of the circumstances, that the business was likely to succeed, the risk premium may be reduced.

The Ontario Court of Appeal's decision in *Ticketnet Corp. v. Air Canada*,[21] is an example of this and demonstrates how detailed the court's analysis can be. Writing for the Court, Justice Laskin summarized the facts as follows[22]:

> In December 1985, the appellant, Air Canada, and the respondent and cross-appellant, Ticketnet Corporation, entered into a written agreement called the Software Development Agreement. The agreement required Air Canada to develop software to be used by Ticketnet for entertainment and sports event ticketing, and for box office management. In return, Air Canada was to receive $2 million for developing the software, a royalty of five cents per ticket sold, and the proprietary rights to any travel related applications of the software. Both parties believed that the Ticketnet software was superior to existing technology and they forecast that the software would produce significant revenue, both in Canada and the United States.
>
> On August 1, 1986, when the software was functional and nearly completed, Air Canada wrote to Ticketnet claiming that Ticketnet was in fundamental breach of its obligations and that Air Canada was no longer bound by its agreement with Ticketnet. Air Canada then locked Ticketnet out of the project site, precluded Ticketnet from gaining access to its own main frame computer at the site, and claimed the Ticketnet software for itself. On December 9, 1986, Ticketnet accepted what it considered was Air Canada's repudiation of the agreement. On the same date, Ticketnet commenced this action for damages for breach of the agreement. An interim injunction granted in April 1987 and an interlocutory injunction granted in August 1987 restrained either party from developing the software until trial. By the time of trial, the software was outdated and it has never been marketed.
>
> The trial took place over five months and included fifty days of evidence and five days of argument. On February 10, 1993, Farley J. delivered lengthy reasons in which he held that, by its letter of August 1, 1986, Air Canada had repudiated the agreement without justification. Because Ticketnet accepted the repudiation on December 9, 1986, Air Canada was liable for damages for breach of contract. The trial judge awarded Ticketnet general damages of $11,510,000 for loss of profits or loss of business opportunity to market the software. He also awarded $10,000 in punitive damages to censure the conduct of Air Canada and ordered Air Canada to return the software to Ticketnet. Air Canada appeals liability, the award of general damages, and the order requiring it to return the software. Ticketnet cross-appeals on damages. For the reasons that follow, I would reduce the damages to $10,160,000. I would otherwise dismiss the appeal and I would dismiss the cross-appeal.

The trial judge, Justice Farley, considered eleven different market, investment, and business-related factors to assess the likelihood of Ticketnet's software being a success and the business actually realizing a profit:[23]

1. The Ticketnet concept appeared to have found a hole in the ticketing market that was being ignored by the competition. It would also have fulfilled a box office management demand. Therefore, "there was a window of opportunity."

2. The concept had been warmly received at the Box Office Management International Conference held in New York in January 1986.

3. Ticketnet's business plans had been prepared over several years and reviewed by experienced organizations such as Air Canada and American.

4. The software was nearly completed.

5. Both Air Canada and American, which each had financial resources and significant good will in the business world, had invested in the concept. Each had experience and expertise in computer software and networks.

6. Air Canada was interested in the travel applications of the software and would not likely have willingly abandoned the concept. American had previously expressed an interest in acquiring Ticketmaster or Ticketron and an acquisition of either, together with a link up with the Ticketnet technology, would have made it an exceptionally strong player in the field.

7. Apart from Ticketmaster and Ticketron, competition was small and either local or regional. The market would likely have welcomed another competitor backed by a major corporation. The two major ticketing organizations, Ticketmaster and Ticketron, were not present in every market. Ticketnet, supported by either Air Canada or American, would have been able to attack a number of markets in Canada and the United States.

8. Ticketron was "somewhat suspect" because its parent, Control Data Corporation, had suffered significant losses in the mid-1980s.

9. If Ticketnet had administration, marketing or other problems, American could likely have filled the gaps.

10. The consuming market appeared unconcerned with the level of ticketing surcharges and, moreover, the proposed Ticketnet charges were not out-of-line with those used in the ticketing industry.

11. A strong product with a strong backer would likely have allowed Ticketnet a significant penetration rate by taking business away from competitors and obtaining new business from the computerized sector. The cost of entry would have been minimal because even the smallest venue would have been charged on a pay as you go basis.

Based on this analysis, Justice Farley determined that the Ticketnet software would have been successful and set the discount rate at 35% for Canadian market and 40% for the American market.[24] The Court of Appeal upheld the decision (disagreeing with Justice Farley only on the U.S. dollar exchange rate).

Other cases have seen even higher discount rates than the ones in Ticketnet, rising to 80% where the business had yet to get the product or business off the ground and the evidence of success was much less persuasive than in Ticketnet.[25]

IV. What is wrong with the prescribed discount rates in Rules of Civil Procedure?

Various provinces have tried to standardize discount rates in their rules of civil procedure.[26] In Ontario, Rule 53.09 of the Rules of Civil Procedure[27] provides for a prescribed discount rate in two tiers. For the first tier, a period of 15 years, the prescribed rate is the real rate of return as reduced by 1 percent (to take into account economic and risk factors) and rounded to the nearest ¼ percent. For the second tier, for any period beyond 15 years, the prescribed rate is 2.5 percent.[28]

21 1997 CanLII 1471 (ON CA) [*Ticknet*].
22 *Ibid*, at paras 1 – 3.
23 *Ticketnet, supra* note 21, at para 69.

24 *Ticknet, supra* note 21, at para 68.
25 See *Husky Injection Molding Systems Ltd. v. Schad*, 2016 ONSC 2297.
26 See note 3 for full list of provinces with prescribed discount rates.
27 Rules of Civil Procedure, R.R.O. 1990, O REG 194.
28 Garry Watson, Derek McKay, and Michael McGowan, Ontario Civil Procedure (Toronto: Thomson Reuters Canada Limited, 1993) (loose-leaf updated 2019, release 3) Rule 53. For a more detail discussion of prescribed discount rates in Canada, see *Submission of the Canadian Institute of Actuaries to the Civil Rules Subcommittee for the Quadrennial Review of Rules 53.09 and 53.10 per s. 66(4) of the Courts of Justice Act*, November 2018 http://www.cia-ica.ca/docs/default-source/2019/219003e.pdf

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The reason for legislating prescribed discount rates is twofold. First, a prescribed rate allegedly avoids disparities between damage awards in cases with similar facts. Second, a prescribed discount rate should help to regulate the cost of litigation by limiting the need for costly expert evidence.[29]

While courts have accepted that the language of Rule 53.09 makes the application of the prescribed discount mandatory, courts also recognize that it can only apply where no other factors (such as contingencies, increase in salary, costs of home care) need to be considered.[30] As a result, one is hard-pressed to find cases where the prescribed discount rate of 2.5 is applied as is to future loss awards.

We should underscore that Rule 53.09 and other provincial rules are largely intended for loss of income, cost-of-care, personal injury-type cases. They primarily reflect that the lump-sum award should be invested in a safe, risk-free investment in order to provide for the future loss of income and costs of care. They are not appropriate for commercial litigation or lost profits cases, where the discount rate is meant to reflect the uncertainty of the estimate of future losses, not the rate of return that the plaintiff can earn on the lump sum award.

V. What is the Court's attitude towards discount rates?

i.   *No one can predict the future*

Reasonably enough, courts' attitudes towards discount rates are informed by the truism that no one can predict the future with absolute precision. The late Justice R. E. Holland made this exact point in *International Corona Resources Ltd. v. LAC Minerals Ltd.*:[31]

> While the experts gave reasoned views as to what he or she thought about future gold prices, exchange rates and inflation, it was clear to me that no one could predict the future with any certainty or even on a balance of probabilities.

Statements in various court decisions dealing with discount rates seem almost disdainful of expert evidence that purports to offer precision in their predictions. As the British Columbia Court of Appeal said in *Killeen v. Kline*:[32]

> the task of the appellate court is clearly made less perplexing if the cloak of mathematics does not seem to give an air of scientific accuracy to a decision that is fundamentally one of judicial assessment, not of calculation.

This sentiment, i.e. that the final decision is one of judicial discretion, is echoed in other decisions. Although the complexity of determining future profits and discount rates invites assistance from professional business valuators as experts, assistance does not equate with reliance:

> The final assessment [should not be] shackled to the evidence of these professionals alone. To rest judgment upon what experts put before the court without careful analysis of what they conclude may mislead [the judge].[33]

In the British Columbia case of Sacks and Seelig v CMHC[34], the perils of relying too heavily on expert evidence was articulated in this way:

> Literally days of expert evidence were heard at trial. As is often the case, the evidence of experts takes on a world of its own with, in this case, accountants testifying with mathematical certainty as to the correctness of their opinions about events that have never occurred.

> The danger that this poses is that it tends to tempt the trier of fact down the garden path of mathematical analysis. In so doing, it poses the risk that the trier of fact will fall into error by applying the mathematical formulae proffered by the experts.[35]

If the court cannot rely solely on expert evidence, what can it rely on? What beacon can it follow to stray from an expert's mathematics to a more judicious or judicially acceptable discount rate?

ii.   *Avoid the allure of false precision with fairness.*

Where precision is not attainable in predicting the future, the courts look to fairness as the best goal and guiding principle:

> at the end of the litigation day, the only question is whether the final award is fair[…][36]

A good example of fairness over precision is the principle that a person may be compensated for loss of chance. In a loss of chance decision that has equal application to cases involving discount rates, Lord Evershed stated:

> In my judgment, assuming that the plaintiff has established negligence, what the court has to do in such a case as the present is to determine what the plaintiff has lost by that negligence. The question is: Has the plaintiff lost some right of value, some chose in action of reality and substance? In such a case it may be that its value is not easy to determine, but it is the duty of the court to determine that value as best it can.[37]

In cases having to do with loss of an opportunity to pursue a lawsuit, precision in predicting the future cannot be achieved because "[m]ost lawsuits are neither clear winners, nor clear losers."[38] However, fairness deems the lost opportunity to simply bring or defend against a claim is something the plaintiff should nevertheless be compensated for.[39]

iii.   *How do judges determine the final discount rate?*

While discount rates at first glance appear to be applied in ways that defy categorization, there appear to be three tried-and-true ways of determining judges' post-expert evidence discount rates.

First, many judges will choose a discount rate that is an average of two opposing proposed discount rates. They will often suggest that this is a "reasonable" or "fair" determination based on their own analysis of the facts.[40]

Second, a judge will use one expert's discount rate as a starting point and slightly adjust the rate up or down to fit within the judge's own analysis of the facts.[41]

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29   See *Giannone v. Weinberg (C.A.)*, 1989 CanLII 4046 (ON CA) which outlines the reasons for prescribed discount rates.

30   See for example: *McDermid et al. v. The Queen in right of Ontario et al.*, 1985 CanLII 1968 (ON SC), 53 O.R. (2d) 495; *Martin v. Listowel Memorial Hospital,* [2000] CarswellOnt 3839, 51 OR (3d) 384.

31   1986 CarswellOnt 146, [1986] O.J. No. 2372, 25 D.L.R. (4th) 504 [*Lac Minerals*].

32   1982 CanLII 418 (BC CA), [1982] 3 W.W.R. 289 at para 28.

33   *Plaza Deli, supra* note 13 at para 24.

34   2002 BCSC 97 [*Sack and Seelig*].

35   *Ibid*, at paras 47-48.

36   *Plaza Deli, supra* note 13 at para 25. See also *Kelzer v. Hanna,* 1978 CanLII 28 (SCC), [1978] 2 S.C.R. 342

37   *Kitchen v. Royal Air Forces Association*, [1958] 2 All E.R. 241, [1958] 1 W.L.R. 563 (C.A.)

38   *Kitchen v. Royal Air Forces Association*, [1958] 2 All E.R. 241, [1958] 1 W.L.R. 563 (C.A.)

39   *Ibid*, at para 77.

40   See for example: *Sacks and Seelig, supra* note 34, at para 64 (experts provided evidence for discount rates of 10% and 15% and the court chose to apply a 12% discount rate); *Bhasin (Bhasin & Associates) v. Hrynew*, 2011 ABQB 637 at para 446 (the judge applied a discount rate of 20 percent as a middle ground between the suggested 15% and 24%).

41   See for example: *Ticketnet, supra* note 21, at para 67; *Stephen Moffett Ltd. v. Her Majesty the Queen in right of the Province of New Brunswick as represented by the Minister of Transportation*, 2005 NBCA 3.

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Third, discount rates are sometimes adjusted or chosen by a judge to achieve a specific final amount the judge deems to be fair.[42] While this ends-determines- means approach may smack of logical fragility, it can be justified by the focus on fairness. Where a discount rate does not achieve a "fair" result, a court can find that it should be adjusted.

VI. Practical Considerations

If our analysis is correct, i.e. that judges approach the application of discount rates as more of a fairness tool than a mathematical truth, how can business valuators acting as experts in future loss of profits cases present their evidence most effectively?

First and foremost, to be effective, the business valuator should strive to give her/his evidence both orally and in writing in a clear, concise manner, simplifying the analysis to the maximum extent possible. Charts (discussed below), power point presentations, listing positive risk factors (those that decrease risk) and negative risk factors (those that increase risk) and indicating the order of importance, are all practical considerations that the expert business valuator should consider.

    i.   *Provide a guide, not answers.*

Experts faced with the difficult task of presenting evidence on the complex and often mystifying topic of discount rates would do well to remember the words of Justice Kirkpatrick in *Sacks and Seelig v. CMHC*:

> *Expert opinion evidence of the loss of business opportunity can be complex and difficult to understand. Once understood, however, it must be remembered that it is but one person's qualified opinion of an estimated loss. The use one puts to that evidence is merely as a potential guide to the assessment of the loss.[43]*

Experts may be more successful when their evidence is structured so as to provide an easy to follow, comprehensive guide to determining future losses. This does not mean that the expert should not come to a conclusion on a discount rate. Rather, they should be sure to follow the high school math teacher's old adage: "show your work".

Framing evidence as a "guide" for judge may look different depending on the expert and the material. One way to do so could be to list of all the factors contributing to the risk premium and indicating if they act to increase or decrease the overall discount rate. Explanations of how and why each factor is weighted should be included as well.

Additionally, experts may want to consider creating a chart outlining the factors included in discount rates (i.e. the various rates of returns, the inflation considerations, risk factors, etc.) for each proposed discount rate, track the discretionary treatment of each of these factors that resulted in the final discount rate. Such a chart could include discount rates that the expert does not suggest in order to point out the deficiencies. This will allow a judge to understand why one discount rate is 15% and another is 20%, why one is better than another, and use the evidence provided as a guide to determine their own discount rate.[44]

    ii.   *Lay out the facts and frame them carefully.*

Experts may want to consider spending considerable time laying out the facts of the case with particular attention to framing those facts as either increasing or decreasing the uncertainty of the projected future profits. As discussed, the court already engages in this analysis on its own, so experts should seek to frame the facts from their perspective as persuasively as possible.

Experts may want to also engage the language of "fairness" (the courts' preferred term) or "reasonableness" (valuators' preferred term) rather than "accuracy" in order to help frame their discussion and analysis. At the other end, though, experts must take care to neither do nor say anything that may compromise, or be seen to compromise, their impartiality. Bias is the expert's kiss of death. One must never cross the line from professional opinion evidence into argument and advocacy.[45]

VII. Conclusion

Living with and leaning into the uncertainty of the future in the quantification of damages for future loss mean accepting that no formulae and no mathematics will offer the "correct" answer to the question of what the appropriate discount rate is, in the circumstances.

However, by understanding that the goal is fairness rather than accuracy, experts may approach and set out their evidence in such a way as to not advertise dubious certainties of "accuracy" or "precision", and instead guide judges to a favourable result. Uncertainty can be a powerful tool that allows for the malleability fairness often demands.

If uncertainty is the only certainty, litigants, lawyers, experts and judges should do more than learn to live that reality in commercial litigation dealing with future losses. They should take up uncertainty and learn to wield it as a force for good.

42   See for example: *House v. Baird, 2017 ONCA 885* (trial judge chose not to apply an expert's discount rate and shift the discount rate because it would result in the addition of millions to the award and the judge felt it was not appropriate to do so (at paras 77-79); *Cosolo v Geo. A. Kelson Limited,* 2017 ONSC 4150.

43   *Sacks and Seelig, supra* note 35 at para 51.

44   For an example chart detailing risk factors and how they affect a discount rate see, Neal Mizrahi, Natalie Quinn, and Sheri Herblum, "Cannabis: Valuation Approaches in an Evolving Market" *FTI Consulting White Paper* (March 2019) https://www.fticonsulting.com/-/media/Files/us-files/insights/white-papers/cannabis-valuation-approaches-evolving-market.pdf. This paper discusses discount rates for the valuation of cannabis businesses, as opposed to discount rates for the quantification of losses. Still, it is a good example of the kind of chart we are recommending.

45   *Bruff-Murphy v. Gunawardena*, 2017 ONCA 502 (advocacy in an expert's evidence may lead to its exclusion); *Thompson v. Helgeson*, 2017 BCSC 927 (advocacy in an expert's evidence may reduce the weight given to the evidence).

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