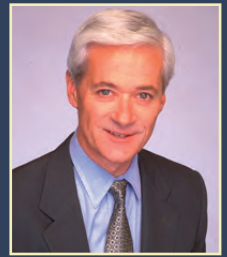


DUNN ON DAMAGES

THE ECONOMIC DAMAGES REPORT FOR LITIGATORS AND EXPERTS



ROBERT L. DUNN

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Please enjoy the following article, reprinted from
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A DISCOUNT RATE SYMPOSIUM— CONCLUDED

FUTURE DAMAGES— BEFORE- AND AFTER-TAX DISCOUNT RATES



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OVERVIEW

Damages experts typically understand the basic principles for valuing a stream of future cash flows, including the function of discount rates. Yet, some experts offer generalized rules about the relationship between the before-tax discount rate (BTDR) and the after-tax discount rate (ATDR) when applied to the lost before-tax cash flow (BTCF) or after-tax cash flow (ATCF). Many of these explanations are incomplete or misguided, especially for business damages subject to taxation. My research, experience and analyses reveal that many experts rely upon inappropriate assumptions and employ computational techniques that may misstate the computed damages.

The objective of this article is to explore and illustrate the characteristics of before-tax and after-tax discount rates when applied to a business's lost future before-tax or after-tax cash flow. The discussion focuses upon future business damages, but the concepts may apply and be adapted for past losses or individual damages (e.g., personal injury, wrongful termination).

CONCEPTUAL ISSUES FOR EXPERTS

Although skilled in the general topic of discounting future economic benefits to a present value, a damages expert may encounter theoretical and technical challenges in determining business damages for lost future economic cash flows. The expert may encounter many questions related to computing the damages, and some answers may materially affect the computed economic loss.

- Assuming a constant tax rate (TR), can the expert analyze either the BTCF or ATCF and, then, discount at either the BTDR or the ATDR, as long as any necessary gross up for taxes on the damages award is performed?

- If the expert's research produces factual support for an ATDR but not for a BTDR, can the BTDR be computed reliably as the $ATDR/(1 - TR)$?
- If the after-tax damages are invested, will the invested principal and subsequent investment earnings be sufficient to replace the lost future ATCF and make the plaintiff economically whole?
- Is the extent of the damages period (i.e., perpetuity or discrete) important to selecting from alternative methodologies?

These issues and more are addressed in this article.

TERMS USED IN THIS ARTICLE

Certain terms and related abbreviations are used in this article and are defined to reflect the simplified assumptions and premises used for this article's examples and illustrations.

- Before-tax cash flow—pre-tax dollars for a business subject to earnings taxation
- After-tax cash flow—BTCF less business taxes on earnings
- Before-tax discount rate—the rate of return relating the business after-tax present value (PV) and the BTCF
- After-tax discount rate—the rate of return relating the business after-tax PV and the ATCF
- Tax rate—the percentage factor applied to the business's taxable income and pre-tax damages award
- Growth rate (G)—the periodically compounded rate of growth for projected cash flows
- Business—an entity subject to earnings taxation
- Investor—an individual or an entity with an interest in a business's ATCF
- Before-tax damages—the amount including business taxes to be paid on the damages award

- After-tax damages—the amount excluding any business taxes on the damages award—the investor's damages for a business's lost ATCF without considering any individual tax liabilities related to the award
- Perpetuity damages—business cash flow disruption from a known beginning date to an indeterminate or "open"¹ end date
- Discrete damages period—business cash flow interruption for a temporary or "closed"² period of time, which is followed by a resumption of projected business operations without the legal wrong

LIMITING PREMISES AND ASSUMPTIONS

Several simplified, limiting premises and assumptions are adopted for the purpose of exploring and explaining the fundamental characteristics and behavior of damages determined using the BTCF, ATCF, BTDR and/or ATDR, which may not be appropriate for computation of economic losses for an actual client engagement. For purposes of this article, the following are presumed.

- BTCF and business taxable income are the same.
- The only difference between BTCF and ATCF is business taxes.
- The tax rate is constant over time, whether applied to a damages award or the business's periodic BTCF. The constant tax rate ignores any differences between average tax rates and incremental or marginal rates.
- For a closed damages period, there is no continuing business impairment thereafter.
- Any growth rate is constant over time.

"WHO'S YOUR PLAINTIFF?"

An expert may be engaged to determine lost business value or lost profits for a

Continued on next page

business. The expert may become so absorbed in analyzing and discounting the projected “but for” and “actual” (i.e., impaired) company cash flows that the expert overlooks the exact nature of the plaintiff. The expert may be performing the assignment as requested and described by the engaging attorney without study of the legal filings. While the issue seems rudimentary, the expert needs to appropriately identify the status of the plaintiff.

- If the plaintiff is a taxpaying business, then the damages award should be sufficient to cover the taxes on the damages award and yield an after-tax damages amount equal to the present value of the lost ATCF.
- If the plaintiff is an investor, then the computed damages should reflect the present value of the business’s lost ATCF. In this instance, the expert normally is not concerned about the taxes, if any, applicable to the investor’s damages award.

SCHOLARLY GUIDANCE IS LIMITED

Books, articles, professional society publications, and case law collectively teem with discussion and analysis of methods to compute damages for business lost profits, including the broad topics of business taxes, the process of discounting future amounts to a present value, and the selection of a discount rate.

Some of these writings briefly address the influence of business taxes on damages, whether considered in the cash flow or the discount rate; however, the guidance usually is generalized, conclusory and not supported with meaningful numerical examples or illustrative tables and graphs. For example, the *Litigation Services Handbook—The Role of the Financial Expert*, fourth edition, was published in 2007.³ Although the tome exceeds 1,100 pages, only two paragraphs⁴ in the entire book touch on the subjects of this article and, then, do not develop and fully explore the topics.

I searched the Internet (e.g., using Google Scholar) and reviewed my personal library of reference materials. I located only a few writings addressing the computation of damages using BTCF v. ATCF and the BTDR v. ATDR that contain more extended discussions and

numerical examples. The results of my research are presented in the inset titled “Selected References.”

While the selected references are quite helpful overall, a few observations and cautions are warranted:

- Not all of the cited publications are readily available and easy to obtain. At least *Shefftz 1995* and *Lonergan 2009* may be located using Google Scholar.
- The numerical examples appearing in the writings all address closed damages periods and, further, do not explain and illustrate that certain approaches appropriate for perpetuity damages may not produce correct results for discrete damages.
- A few of the references primarily focus upon factors causing divergence between accounting income, taxable income and cash flow, especially when those factors are not constant over time. Examples of such factors include sunk costs, capital expenditures, working capital requirements, depreciation, interest and extraordinary expenditures. This article does not address these potential complications.
- The cited authors do not agree upon all issues. For example, the author of one cited article states that the BTDR is the ATDR/(1-TR) but *Shefftz 1995* and *Lonergan 2009* disagree.
- *AICPA Practice Aid 2012* essentially repeats the *AICPA Practice Aid 2006* cursory coverage of the topic (i.e., less than one printed page), which includes a simple, one-period numerical example. *AICPA Practice Aid 2012* states “...the damages computations often use an after-tax discount rate. This is because a damages award may be invested and income taxes will be incurred on related earnings.” The *Practice Aid* example, however, does not present the required investment rate of return to make the plaintiff economically whole, which is done in *Dilbeck 1995*, or explain that the necessary rate of return on investment of the after-tax damages may differ from the BTDR used to compute the damages.
- One selected reference specifically states that discounting BTCF at the BTDR results in “plaintiff’s taxable damages award” but the method is “incorrect” by producing a different

result than two alternative “correct” methods. In fact, applying the BTDR to BTCF results in after-tax damages and not taxable damages. Because after-tax damages require a gross up for taxes to compute before-tax damages, the author understates the degree of the observed error, which is more egregious than suggested by the subject article.

CONSENSUS FROM THE SELECTED REFERENCES

Although the selected references may be incomplete in certain aspects and contain some discrepancies, the authors’ consensus view for determining damages under similar, simplified premises as outlined above follows.

- **Method 1**—the first and preferred method is to determine ATCF by deducting the taxes from the BTCF, discount the ATCF at the ATDR and, then, gross up the PV for business taxes, if the plaintiff is a business.
- **Method 2**—the second method is to discount the BTCF at the ATDR, which produces the before-tax damages, assuming the plaintiff is a business.

Some of the cited authors caution against using the second method outlined above because, in short, the actual relationship between the BTCF, business taxable income, and the ATCF is not driven solely by an assumed constant TR. As a practical matter, however, experts often work with BTCF given the availability of information or the cost required to produce more accurate ATCF figures than needed for a reasonably certain estimate of damages. Of course, the expert should exercise judgment and develop a credible basis for deciding to use BTCF instead of ATCF.

COMMON VARIABLES FOR ILLUSTRATIONS

Numerical examples are presented in the remainder of this article to explain and illustrate concepts. For ease of comparison and to avoid unnecessary repetition, common variables are used:

- Lost BTCF—\$100,000 for the first time period
- TR—constant 40 percent for both be-

Continued on next page

fore-tax business damages and lost BTCF

- Lost ATCF — \$60,000 for the first time period
- Timing of receipt/payment—end of each period
- Growth rate—either 0 percent or 5 percent per period after the first period, as specified by example
- ATDR — 12 percent

PERPETUITY DAMAGES

Plaintiff's business damages may reflect permanent impairment to the BTCF and ATCF. If so, the capitalization of cash flow method for business valuation provides a shortcut measure of the economic loss. Presuming no projected cash flow growth, the taxable damages are computed as either of the following:

- Period 1 ATCF/(ATDR - G), then grossed-up for taxes at (1 - TR) = $(\$60,000 / (12\% - 0\%)) / 60\% = \$833,333$
- Period 1 BTCF/(ATDR - G) = $\$100,000 / (12\% - 0) = \$833,333$

For both approaches above, the after-tax damages are \$500,000 (i.e., \$833,333 less

40 percent taxes). With the easy to use power of Excel, a simple model is quickly constructed to prove the validity of the alternative approaches above. Specifically, the computed cumulative after-tax PV of the damages for either method will closely approach \$500,000 given a sufficiently large number of periods (e.g., hundreds) in the model.

The permanent lost business value assuming cash flows grow at 5 percent per period can also be determined using the business valuation capitalization of cash flows methods as follows:

- Period 1 ATCF/(ATDR - G), then grossed-up for taxes at (1 - TR) = $(\$60,000 / (12\% - 5\%)) / 60\% = \$1,428,571$
- Period 1 BTCF/(ATDR - G) = $\$100,000 / (12\% - 5) = \$1,428,571$

For both approaches above, the after-tax damages are about \$857,143 (i.e., \$1,428,571 less 40 percent taxes). Clearly, the periodically compounded 5 percent growth in cash flow adds considerably to the computed lost business value, which also can be proven through a period-ex-

tended Excel model.

It is instructive to consider the future nominal dollars produced by modeling the input variables used for the above illustrations that include a 5 percent growth rate, particularly the relationship between each period's projected BTCF, taxes, ATCF, and the respective beginning of period-indicated business value. **Table 1** below presents the first few years of a perpetuity model in nominal dollars. For each period, the BTDR is the sum of the periodic 5 percent growth of the imputed business value plus the percentages of that value related to tax payments and ATCF. Likewise, the ATDR is the sum of the 5 percent growth of the imputed business value plus only the ATCF as a percentage of the beginning of period indicated business value. These observations provide some clarity for the deduction of the growth rate in the mathematical divisors for the capitalization of cash flow formulae.

RELATIONSHIP OF THE BTDR TO THE ATDR

The illustrations for computing perpetuity damages use the ATDR, whether ap-
Continued on next page

TABLE 1
PERPETUITY MODEL IN NOMINAL DOLLARS
Period 1 BCTF \$100,000; 5% Growth Rate; 40% TR; 16²/₃% BTDR; and 12% ATDR

Period	Capitalized Earnings BV Beginning of Period	Total Return @ BTDR	Total Projected ATCF	Taxes	Projected BTCF	End of Period BV
	A	B	C	D	E	F
1	\$ 857,143	\$ 142,857	\$ 60,000	\$ 40,000	\$ 100,000	\$ 900,000
2	900,000	150,000	63,000	42,000	105,000	945,000
3	945,000	157,500	66,150	44,100	110,250	992,250
4	992,250	165,375	69,458	46,305	115,763	1,041,863
5	1,041,863	173,644	72,930	48,620	121,551	1,093,956
↓ ∞	ATCF/(ATDR - G) or C/(12%-5%) Includes 5% per period BV growth	BV * BTDR or A * 16 ² / ₃ % B/A = 16 ² / ₃ %	BV * (ATDR-G) or A * 7% C/A = 7%	BTCF * TR or E * 40% D/A = 4 ² / ₃ %	BV * (BTDR-G) or A * 11 ² / ₃ % E/A = 11 ² / ₃ %	A + B - E (F-A)/A = 5%

plied to BTCF or ATCF. Some experts believe BTCF should be discounted at the BTDR. Conceptually, applying the BTDR to BTCF or the ATDR to ATCF will produce the same after-tax damages amount, given the simplifying assumptions adopted for this article. In practice, little factual data is commonly available about the pertinent BTDR and an expert may err in attempting to estimate the BTDR from a known ATDR.

... rates of return on equity investments are only observable on an after company tax basis ... the capital asset pricing model (CAPM), from which discount rates are derived, is based on stock market return of shares, which returns are calculated after company tax ... *Loneragan 2009*, page 42.

Pre tax discount rates are often (but incorrectly) calculated by grossing up the after tax discount rate an oversimplification and only holds under limited circumstances No practical reliable method to calculate a pre tax discount rate ... simply not possible to empirically verify pre tax rates of return for equities or similar assets. *Loneragan 2009*, page 43.

A significant point of dispute in a recent engagement involved plaintiff's (i.e., in-

vestor's) expert computing the BTDR as the industry weighted average cost of capital grossed-up for the industry 35 percent average TR. Unless the projected growth rate is 0 percent, the algorithm of $BTDR = ATDR / (1 - TR)$ is not theoretically correct. For a cash flow projection including growth, the appropriate formula follows:

$$BTDR = ((ATDR - G) / (1 - TR)) + G$$

For example, if $G = 0\%$, the BTDR is computed as 20% or $((12\% - 0\%) / (1 - 60\%)) + 0\%$, which simplifies to 12%/60%. Assuming a 5 percent growth rate, however, the formula produces a BTDR of 16 $\frac{2}{3}$ percent as shown below.

$$BTDR = ((12\% - 5\%) / (1 - 40\%)) + 5\% = (7\% / 60\%) + 5\% = 16\frac{2}{3}\%$$

I demonstrated the accuracy of the appropriate relationship between the BTDR and ATDR by running multiple Excel models and comparing the results. I varied the ATDR, TR and G and obtained results consistent with BTDRs computed using the above formula. I also determined the differences between the results computed using the proper algorithm and $BTDR = ATDR / (1 - TR)$. The differences consistently result from the $BTDR = ATDR / (1 - TR)$ approach

subjecting the growth factor imbedded in the ATDR to the $(1 - TR)$ adjustment, although the growth factor is constant in both the BTDR and ATDR. **Table 2** below presents some of the results from my models to calculate the BTDR from a given ATDR, but is limited to the series of models for which the growth rate was assumed to be 5 percent. Between 0 percent and 100 percent for the TR, the incorrect formula overstates the BTDR, which would understate damages. **Table 3** on the next page presents the results of computing the correct and incorrect ATDRs from a given BTDR when G is 5 percent and for example TRs. Presuming an expert would ever have a need to convert a BTDR to an ATDR, the table shows that the incorrect formula understates the BTDR for TRs between 0 percent and 100 percent, which would overstate damages.

DISCRETE DAMAGES PERIOD

A claim for business lost profits often relates to a discrete or "closed" time period and presumes that any adverse impact to the business either ends at the conclusion of the damages period or does not meet the legal requirements for recovery. **Table 4** on page 11 presents the computation of business damages for a 5-year period of alleged loss assuming a 5 per-

Continued on next page

TABLE 2
DETERMINING THE BTDR FROM A SPECIFIED ATDR
Comparison of the often assumed relationship and the correct computation

Incorrect Formula **BTDR = ATDR / (1-TR)**
Correct Formula **BTDR = ((ATDR - G) / (1-TR)) + G**

Growth Rate	Tax Rate	Specified ATDR	BTDR by Correct Formula	BTDR by Incorrect Formula	Difference	(G/(1-TR))-G (Difference Explained)
A	B	C	D	E	E-D	(A/(1-B))-A
5%	0%	10.00%	10.00%	10.00%	0.00%	0.00%
5%	25%	10.00%	11.67%	13.33%	1.67%	1.67%
5%	40%	10.00%	13.33%	16.67%	3.33%	3.33%
5%	50%	10.00%	15.00%	20.00%	5.00%	5.00%
5%	60%	10.00%	17.50%	25.00%	7.50%	7.50%
5%	75%	10.00%	25.00%	40.00%	15.00%	15.00%
5%	100%	10.00%	n/a	n/a	n/a	n/a

cent growth rate. The illustration applies the ATDR to the ATCF and, then, grosses up the result for the business taxes. The before-tax damages are \$394,005 and the after-tax damages are \$236,403.

An expert considering whether to use the BTCF v. ATCF and the BTDR v. ATDR should recognize that there are four possible combinations of these variables, although the expert would intuit that the BTDR and ATCF pairing is conceptually inconsistent. **Table 5** on page 12 uses the variables applied for Table 3 and shows the present values based upon the four possible combinations of cash flows and discount rates. As appropriate, I adjusted initial results for business taxes on the damages award. Further, I corrected the scenario of applying the BTDR to the ATCF because taxes are effectively deducted twice—by the BTDR and for the ATCF. After adjustments and the described double-counting correction, I reconciled the results of using the BTDR on either BTCF or ATCF. Likewise, I reconciled the results of using the ATDR on either BTCF or ATCF. Regardless, the results obtained from use of the BTDR differed from the results obtained from use of the ATDR. In the next section, I explained why use of the BTDR for discrete periods produces incorrect damages amounts for TRs greater than 0 percent

but less than 100 percent and for growth rates less than the ATDR.

DISCRETE DAMAGES PERIODS—BTDR-CAUSED MISSTATEMENTS

For perpetuity damages, applying the BTDR to BTCF or the ATDR to ATCF ultimately yields equivalent results for constant TRs; however, these approaches produce different results for discrete damages periods unless the TR = 0 percent. For litigation claims, given my experience, the BTDR exceeds the ATDR and both figures are positive amounts.⁵ Thus, for example, discounting the BTCF at the BTDR for Period 1 removes relatively more dollars than discounting the ATCF at the ATDR for Period 1, assuming the TR is greater than 0 percent, since the ATCF was reduced by the TR while the BTCF was not. Over time, the difference between the two cumulative PVs will diminish, but perpetuity is required before it is eliminated. **Graph 1** on page 13 contrasts the cumulative PVs of after-tax damages over fifty years assuming a 5 percent growth rate when the PVs are alternatively calculated by applying the ATDR to ATCF compared to applying the BTDR to BTCF. On the graph, the after-tax damages error that results from using the BTDR and BTCF is reflected by the degree by which the BTDR—BTCF curve

exceeds the ATDR—ATCF curve. Expressed as a percentage of the after-tax cumulative damages determined using the ATDR and ATCF, the cumulative differences for this single example are highlighted below.⁶

- Through Period 1—60.0%
- Through Period 5—48.5%
- Through Period 10—37.0%
- Through Period 20—21.2%
- Through Period 30—11.9%
- Through Period 40—6.6%
- Through Period 50—3.6%

The foregoing percentage differences are specific for the model input variables used in this article and are not general rules. No differences would exist if the TR = 0 percent and the exercise would be meaningless if the TR = 100 percent. Within the range of the TR exceeding 0 percent but less than 100 percent, the differences tend to grow as the TR increases towards 100 percent. Likewise, the differences increase as G increases, subject to G being less than the ATDR. For example, if G was equal to or greater than the ATDR, the capitalization of cash flow formula of ATCF/(ATDR-G) would produce either a meaningless result or a negative business value.

Continued on next page

TABLE 3
DETERMINING THE ATDR FROM A SPECIFIED BTDR
Comparison of the often assumed relationship and the correct computation

Growth Rate	Tax Rate	Specified BTDR	Incorrect Formula	ATDR = BTDR*(1-TR)	Difference	-TR * G (Difference Explained)
			Correct Formula	ATDR = ((BTDR-G)*(1-TR))+G		
A	B	C	ATDR by Correct Formula	ATDR by Incorrect Formula	E-D	-A * B
D	E	F	G	H	I	J
5%	0%	20.00%	20.00%	20.00%	0.00%	0.00%
5%	25%	20.00%	16.25%	15.00%	-1.25%	-1.25%
5%	40%	20.00%	14.00%	12.00%	-2.00%	-2.00%
5%	50%	20.00%	12.50%	10.00%	-2.50%	-2.50%
5%	60%	20.00%	11.00%	8.00%	-3.00%	-3.00%
5%	75%	20.00%	8.75%	5.00%	-3.75%	-3.75%
5%	100%	20.00%	n/a	n/a	n/a	n/a

TAXES ON REINVESTMENT OF THE AFTER-TAX DAMAGES AWARD

An objective of a damages award is to make the plaintiff economically whole. The plaintiff is presumed to invest the after-tax damages and earn sufficient investment returns to replace the lost ATCF.⁷ The investment earnings, however, are assumed to be subject to the TR, so the after-tax award amount must be sufficient to cover both the projected, periodic cash withdrawals equal to the ATCF plus the taxes due by period on the investment earnings. The goal is met by discounting at the ATDR; however, the reinvestment rate of return is determined as the ATDR/(1-TR). Thus, the reinvestment rate of return may be a different rate than the BTDR related to modeling and discounting the lost cash flows. The identified reinvestment rate of return is consistent with investing the after-tax damages in an interest-bearing investment that is a "no growth" financial vehicle with respect to initial principal deposit. Table 6 on page 13 demonstrates the described concept. It begins Period 1 with the hypothetical investment of \$236,403, the after-tax dam-

ages presented on Tables 4 and 5 for a five-year period of loss. Table 6 shows the periodic investment earnings, periodic taxes on these earnings and the withdrawal of the ATCF according to Table 4. Table 6 demonstrates that determining damages using the ATDR and investing the after-tax damages at the related no-growth BTDR makes the plaintiff economically whole. Specifically, the remaining investment balance at the end of Period 5 is \$0.

CONCLUSION

This article explores and exemplifies the concepts and characteristics of before-tax and after-tax discount rates when applied to a business's lost future before-tax or after-tax cash flow, particularly in the context of computing litigation damages. For purposes of illustration, the article is based upon simplified premises and common model input variables. Regardless, the foregoing discussion and examples illustrate the potential pitfalls if an expert presumes certain rule of thumb relationships among BTDR v. ATDR and BTCF v. ATCF.

The explanations and illustrations at times may seem relatively technical,

but the article addresses what should be comparatively elementary and foundational knowledge for damages experts. Hopefully, a future article in *Dunn on Damages* will continue the exploration of the BTDR v. ATDR and BTCF v. ATCF and address more advanced issues and questions that go beyond the simplified assumptions used for this article.⁸

Tables and calculations continued on pages 12-15

¹ "Computing Lost Profits in Business Interruption Litigation: A General Model," Stanley Stephenson, David A. Macpherson and Gauri Prakash-Canjels, *Journal of Business Valuation and Economic Loss Analysis*, Manuscript 118, Issue 1, published 1-1-2012, page 2.

² *Ibid*, page 1.

³ The book editors are Roman L. Weil, Peter B. Frank, Christian W. Hughes and Michael J. Wagner. The publisher is John Wiley & Sons, Inc.

⁴ The brief discussions appear in Chapter 3—"The Economics in Accounting for Litigation" by Elizabeth A. Evans, page 3-12 and Chapter 9—"Prejudgment Interest" by Michael S. Knoll and Jeffrey M. Colón, pages 9-11 to 9-12.

⁵ Theoretically, rates of return could be negative or the ATDR could exceed the BTDR assuming continuing, aggregate tax refunds/credits instead of payments.

Endnotes and Resource List continued on page 21

**TABLE 4
ILLUSTRATION OF DETERMINING TAXABLE DAMAGES
5-YEAR DISCRETE DAMAGES PERIOD WITH 5% GROWTH RATE**

Description	End of Year					Total
	1	2	3	4	5	
Model in Nominal Dollars						
BTCF with 5% Growth	\$ 100,000	\$ 105,000	\$ 110,250	\$ 115,763	\$ 121,551	\$ 552,563
40% Taxes	(40,000)	(42,000)	(44,100)	(46,305)	(48,620)	(221,025)
ATCF	\$ 60,000	\$ 63,000	\$ 66,150	\$ 69,458	\$ 72,930	\$ 331,538
Damages Determined with ATCF & ATDR						
PV of ATCF at 12% ATDR	\$ 53,571	\$ 50,223	\$ 47,084	\$ 44,141	\$ 41,383	\$ 236,403
Gross up for 40% Taxes	35,714	33,482	31,390	29,428	27,588	157,602
Taxable Damages	\$ 89,286	\$ 83,705	\$ 78,474	\$ 73,569	\$ 68,971	\$ 394,005
Damages Determined with BTCF & ATDR						
PV of BTCF at 12% ATDR--						
Taxable Damages	\$ 89,286	\$ 83,705	\$ 78,474	\$ 73,569	\$ 68,971	\$ 394,005

TABLE 5
ALTERNATIVE DAMAGES PRESENT VALUES
DETERMINED USING BTCF v. ATCF AND BTDR v. ATDR

<i>Period 1 BTCF</i>	\$100,000	<i>Tax Rate</i>	40%
<i>Growth Rate</i>	5%	<i>ATDR</i>	12%
<i>Number of Periods</i>	5	<i>BTDR</i>	16.67%

		Future Stream of Year-End Cash Flows			
		BTCF		ATCF	
Discount Rate	BTDR	PV with taxes removed by DR	\$351,009	PV with taxes removed from CF and by DR	\$210,605
		Gross up for taxes	<u>234,006</u>	Tax gross up to correct removal of taxes twice	<u>140,403</u>
		Taxable damages	<u>\$585,014</u>	PV with taxes removed once	\$351,009
				Gross up for taxes	<u>234,006</u>
				Taxable damages	<u>\$585,014</u>
	ATDR	Taxable damages	<u>\$394,005</u>	PV excluding taxes	\$236,403
				Gross up for taxes	<u>157,602</u>
				Taxable damages	<u>\$394,005</u>

TABLE 5 CALCULATIONS

BASIC SCENARIOS OF BTCF v. ATCF AND BTDR v. ATDR

<i>Earnings growth rate</i>	0%
<i>Tax rate</i>	40%
<i>Growth rate</i>	5%
<i>BTDR</i>	16.67%
<i>After-tax discount rate</i>	12%

Description	1	2	3	4	5	Total
BTCF (received end of year)	\$ 100,000.00	\$ 105,000.00	\$ 110,250.00	\$ 115,762.50	\$ 121,550.63	\$ 552,563.13
Taxes	<u>(40,000.00)</u>	<u>(42,000.00)</u>	<u>(44,100.00)</u>	<u>(46,305.00)</u>	<u>(48,620.25)</u>	<u>(221,025.25)</u>
ATCF	<u>\$ 60,000.00</u>	<u>\$ 63,000.00</u>	<u>\$ 66,150.00</u>	<u>\$ 69,457.50</u>	<u>\$ 72,930.38</u>	<u>\$ 331,537.88</u>
PV of BTCF @ BTDR	<u>\$ 85,714.29</u>	<u>\$ 77,142.86</u>	<u>\$ 69,428.57</u>	<u>\$ 62,485.71</u>	<u>\$ 56,237.14</u>	<u>\$ 351,008.57</u>
PV of BTCF @ ATDR	<u>\$ 89,285.71</u>	<u>\$ 83,705.36</u>	<u>\$ 78,473.77</u>	<u>\$ 73,569.16</u>	<u>\$ 68,971.09</u>	<u>\$ 394,005.09</u>
PV of ATCF @ BTDR	<u>\$ 51,428.57</u>	<u>\$ 46,285.71</u>	<u>\$ 41,657.14</u>	<u>\$ 37,491.43</u>	<u>\$ 33,742.29</u>	<u>\$ 210,605.14</u>
PV of ATCF @ ATDR	<u>\$ 53,571.43</u>	<u>\$ 50,223.21</u>	<u>\$ 47,084.26</u>	<u>\$ 44,141.50</u>	<u>\$ 41,382.65</u>	<u>\$ 236,403.06</u>

Continued on next page

TABLE 6
ILLUSTRATION OF MAKING THE PLAINTIFF ECONOMICALLY WHOLE
IF AFTER-TAX DAMAGES ARE INVESTED AT THE NO-GROWTH BTDR

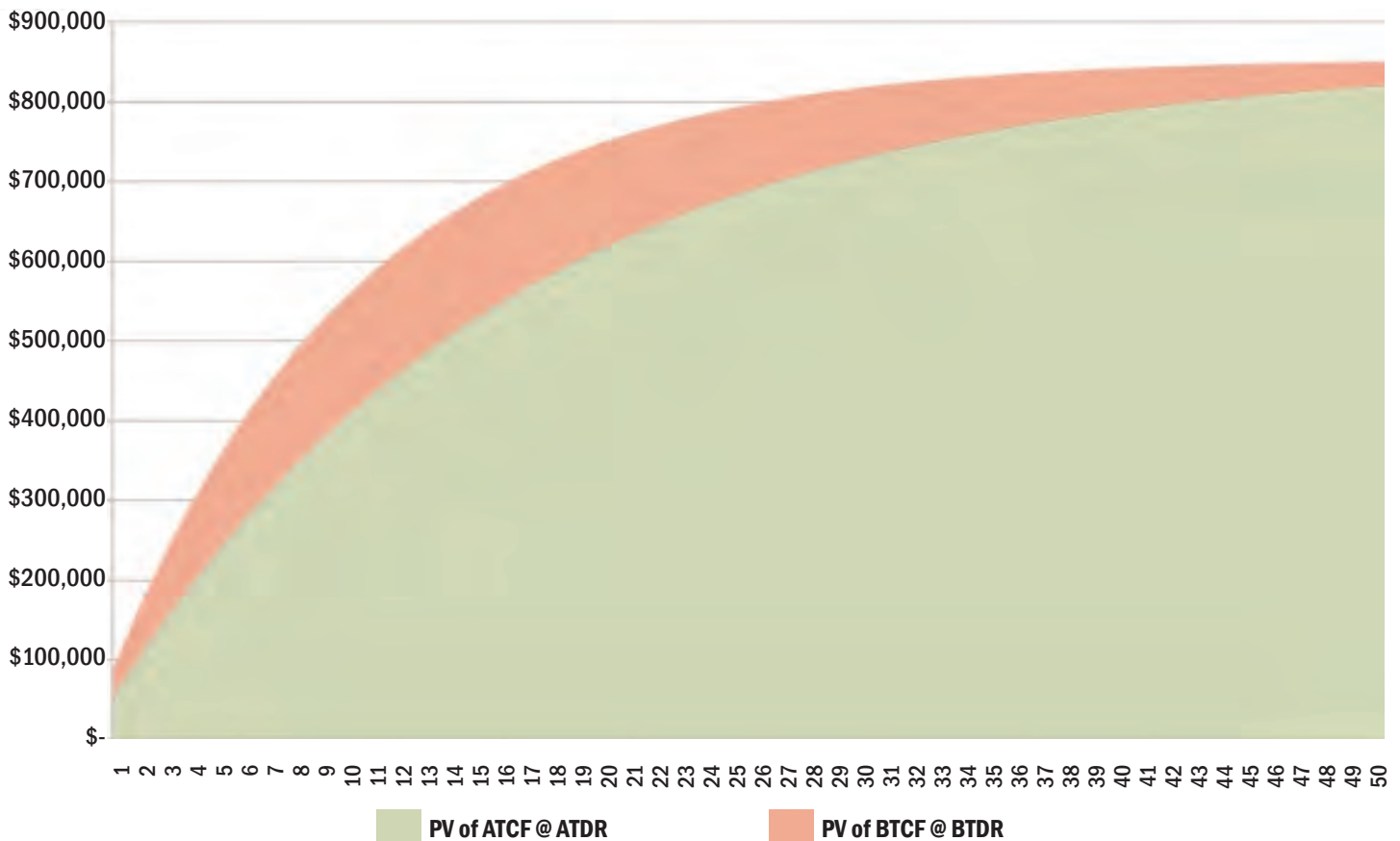
BTDR 16.67%
ATDR 12.00%
Tax Rate 40%
Required Reinvestment Rate 20% = $ATDR / (1 - TR)$, since $G = 0\%$

Description	End of Year				
	1	2	3	4	5
Beginning Balance (See Note)	\$ 236,403	\$ 204,771	\$ 166,344	\$ 120,155	\$ 65,116
Period Endings at Required Reinvestment Rate	47,281	40,954	33,269	24,031	13,023
Taxes on Period Earnings	(18,912)	(16,382)	(13,308)	(9,612)	(5,209)
ATCF Withdrawal	(60,000)	(63,000)	(66,150)	(69,458)	(72,930)
Ending Balance	\$ 204,771	\$ 166,344	\$ 120,155	\$ 65,116	\$ -

Note: This beginning investment balance is the after-tax damages amount determined by applying the ATDR to ATCF, as shown on Tables 4 and 5.

GRAPH 1

PRE-TAX DAMAGES CUMULATIVE PRESENT VALUES
BTCF AT BTDR v. ATCF AT ATDR
Period 1 BTCF \$100,000; 5% Growth Rate; 40% TR; 16²/₃% BTDR and 12% ATDR



Continued on next page

ANALYSIS OF BV PRINCIPLE THAT PV OF BTCF @ BTDR
IS EQUIVALENT TO PV OF ATCF @ ATDR
PROOF THAT EQUALITY EXISTS ONLY IN PERPETUITY

G = 5.00% ATDR = 12.00%
TR = 40.00% BTDR = 16.67%

Period	PV of BTCF @ BTDR			PV of ATCF @ ATDR			Difference		
	Pre-Tax Net Income	40% Taxes	After-Tax Net Income	By Period	Cum. Total A	By Period	Cum. After Tax B	ERROR = (A-B)/B	Cum. After Tax
1	\$ 100,000.00	\$ (40,000.00)	\$ 60,000.00	\$ 85,714.29	\$ 85,714.29	\$ 53,571.43	\$ 53,571.43	60.00%	\$ 32,142.86
2	105,000.00	(42,000.00)	63,000.00	77,142.86	162,857.14	50,223.21	103,794.64	56.90%	59,062.50
3	110,250.00	(44,100.00)	66,150.00	69,428.57	232,285.71	47,084.26	150,878.91	53.96%	81,406.81
4	115,762.50	(46,305.00)	69,457.50	62,485.71	294,771.43	44,141.50	195,020.40	51.15%	99,751.03
5	121,550.63	(48,620.25)	72,930.38	56,237.14	351,008.57	41,382.65	236,403.06	48.48%	114,605.51
6	127,628.16	(51,051.26)	76,576.89	50,613.43	401,622.00	38,796.24	275,199.29	45.94%	126,422.71
7	134,009.56	(53,603.83)	80,405.74	45,552.09	447,174.09	36,371.47	311,570.77	43.52%	135,603.32
8	140,710.04	(56,284.02)	84,426.03	40,996.88	488,170.96	34,098.26	345,669.02	41.22%	142,501.94
9	147,745.54	(59,098.22)	88,647.33	36,897.19	525,068.15	31,967.11	377,636.14	39.04%	147,432.02
10	155,132.82	(62,053.13)	93,079.69	33,207.47	558,275.62	29,969.17	407,605.31	36.96%	150,670.32
11	162,889.46	(65,155.79)	97,733.68	29,886.72	588,162.35	28,096.10	435,701.40	34.99%	152,460.94
12	171,033.94	(68,413.57)	102,620.36	26,898.05	615,060.40	26,340.09	462,041.49	33.12%	153,018.90
13	179,585.63	(71,834.25)	107,751.38	24,208.25	639,268.64	24,693.84	486,735.33	31.34%	152,533.31
14	188,564.91	(75,425.97)	113,138.95	21,787.42	661,056.06	23,150.47	509,885.80	29.65%	151,170.26
15	197,993.16	(79,197.26)	118,795.90	19,608.68	680,664.74	21,703.57	531,589.37	28.04%	149,075.38
16	207,892.82	(83,157.13)	124,735.69	17,647.81	698,312.56	20,347.09	551,936.46	26.52%	146,376.10
17	218,287.46	(87,314.98)	130,972.48	15,883.03	714,195.59	19,075.40	571,011.86	25.08%	143,183.73
18	229,201.83	(91,680.73)	137,521.10	14,294.73	728,490.31	17,883.19	588,895.05	23.70%	139,595.27
19	240,661.92	(96,264.77)	144,397.15	12,865.25	741,355.57	16,765.49	605,660.53	22.40%	135,695.03
20	252,695.02	(101,078.01)	151,617.01	11,578.73	752,934.30	15,717.65	621,378.18	21.17%	131,556.12
21	265,329.77	(106,131.91)	159,197.86	10,420.86	763,355.15	14,735.29	636,113.47	20.00%	127,241.68
22	278,596.26	(111,438.50)	167,157.76	9,378.77	772,733.92	13,814.34	649,927.81	18.90%	122,806.11
23	292,526.07	(117,010.43)	175,515.64	8,440.89	781,174.82	12,950.94	662,878.75	17.85%	118,296.07
24	307,152.38	(122,860.95)	184,291.43	7,596.80	788,771.62	12,141.51	675,020.26	16.85%	113,751.36
25	322,509.99	(129,004.00)	193,506.00	6,837.12	795,608.74	11,382.66	686,402.92	15.91%	109,205.83
26	338,635.49	(135,454.20)	203,181.30	6,153.41	801,762.16	10,671.25	697,074.16	15.02%	104,687.99
27	355,567.27	(142,226.91)	213,340.36	5,538.07	807,300.23	10,004.29	707,078.46	14.17%	100,221.77
28	373,345.63	(149,338.25)	224,007.38	4,984.26	812,284.49	9,379.02	716,457.48	13.38%	95,827.01
29	392,012.91	(156,805.17)	235,207.75	4,485.84	816,770.33	8,792.84	725,250.32	12.62%	91,520.01
30	411,613.56	(164,645.42)	246,968.14	4,037.25	820,807.58	8,243.28	733,493.60	11.90%	87,313.98
31	432,194.24	(172,877.70)	259,316.54	3,633.53	824,441.11	7,728.08	741,221.68	11.23%	83,219.43
32	453,803.95	(181,521.58)	272,282.37	3,270.18	827,711.28	7,245.07	748,466.75	10.59%	79,244.53
33	476,494.15	(190,597.66)	285,896.49	2,943.16	830,654.44	6,792.26	755,259.01	9.98%	75,395.43
34	500,318.85	(200,127.54)	300,191.31	2,648.84	833,303.28	6,367.74	761,626.75	9.41%	71,676.63
35	525,334.80	(210,133.92)	315,200.88	2,383.96	835,687.24	5,969.76	767,596.51	8.87%	68,090.73
36	551,601.54	(220,640.61)	330,960.92	2,145.56	837,832.80	5,596.65	773,193.15	8.36%	64,639.65
37	579,181.61	(231,672.65)	347,508.97	1,931.01	839,763.81	5,246.86	778,440.01	7.88%	61,323.79
38	608,140.69	(243,256.28)	364,884.42	1,737.91	841,501.71	4,918.93	783,358.94	7.42%	58,142.77
39	638,547.73	(255,419.09)	383,128.64	1,564.11	843,065.83	4,611.49	787,970.43	6.99%	55,095.39
40	670,475.12	(268,190.05)	402,285.07	1,407.70	844,473.53	4,323.28	792,293.71	6.59%	52,179.82
41	703,998.87	(281,599.55)	422,399.32	1,266.93	845,740.46	4,053.07	796,346.78	6.20%	49,393.68
42	739,198.81	(295,679.53)	443,519.29	1,140.24	846,880.70	3,799.75	800,146.54	5.84%	46,734.16
43	776,158.76	(310,463.50)	465,695.25	1,026.22	847,906.92	3,562.27	803,708.81	5.50%	44,198.11
44	814,966.69	(325,986.68)	488,980.02	923.59	848,830.51	3,339.63	807,048.43	5.18%	41,782.08
45	855,715.03	(342,286.01)	513,429.02	831.23	849,661.75	3,130.90	810,179.34	4.87%	39,482.41
46	898,500.78	(359,400.31)	539,100.47	748.11	850,409.86	2,935.22	813,114.56	4.59%	37,295.30
47	943,425.82	(377,370.33)	566,055.49	673.30	851,083.16	2,751.77	815,866.33	4.32%	35,216.83

Period	PV of BTFC @ BTDR					PV of ATCF @ ATDR		Difference	
	Pre-Tax Net Income	40% Taxes	After-Tax Net Income	By Period	Cum. Total	By Period	Cum. After Tax	ERROR = (A-B)/B	Cum. After Tax
48	990,597.11	(396,238.84)	594,358.27	605.97	851,689.13	2,579.78	818,446.11	4.06%	33,243.02
49	1,040,126.96	(416,050.79)	624,076.18	545.37	852,234.50	2,418.55	820,864.66	3.82%	31,369.84
50	1,092,133.31	(436,853.33)	655,279.99	490.84	852,725.34	2,267.39	823,132.04	3.60%	29,593.29
51	1,146,739.98	(458,695.99)	688,043.99	441.75	853,167.09	2,125.68	825,257.72	3.38%	27,909.37
52	1,204,076.98	(481,630.79)	722,446.19	397.58	853,564.66	1,992.82	827,250.54	3.18%	26,314.12
53	1,264,280.83	(505,712.33)	758,568.50	357.82	853,922.48	1,868.27	829,118.81	2.99%	24,803.67
54	1,327,494.87	(530,997.95)	796,496.92	322.04	854,244.52	1,751.50	830,870.31	2.81%	23,374.21
55	1,393,869.61	(557,547.84)	836,321.77	289.83	854,534.35	1,642.03	832,512.35	2.65%	22,022.01
56	1,463,563.09	(585,425.24)	878,137.85	260.85	854,795.21	1,539.41	834,051.75	2.49%	20,743.45
57	1,536,741.25	(614,696.50)	922,044.75	243.77	855,029.97	1,443.19	835,494.95	2.34%	19,535.02
58	1,613,578.31	(645,431.32)	968,146.99	211.29	855,241.26	1,352.99	836,847.94	2.20%	18,393.32
59	1,694,257.22	(677,702.89)	1,016,554.33	190.16	855,431.42	1,268.43	838,116.37	2.07%	17,315.04
60	1,778,970.09	(711,588.03)	1,067,382.05	171.14	855,602.56	1,189.16	839,305.53	1.94%	16,297.03
61	1,867,918.59	(747,167.44)	1,120,751.15	154.03	855,756.59	1,114.83	840,420.36	1.82%	15,336.23
62	1,961,314.52	(784,525.81)	1,176,788.71	138.63	855,895.22	1,045.16	841,465.52	1.71%	14,429.70
63	2,059,380.24	(823,752.10)	1,235,628.15	124.76	856,019.98	979.83	842,445.35	1.61%	13,574.63
64	2,162,349.26	(864,939.70)	1,297,409.55	112.29	856,132.27	918.59	843,363.95	1.51%	12,768.32
65	2,270,466.72	(908,186.69)	1,362,280.03	101.06	856,233.33	861.18	844,225.13	1.42%	12,008.20
66	2,383,990.06	(953,596.02)	1,430,394.03	90.95	856,324.28	807.36	845,032.49	1.34%	11,291.80
67	2,503,189.56	(1,001,275.82)	1,501,913.74	81.86	856,406.14	756.90	845,789.38	1.26%	10,616.75
68	2,628,349.04	(1,051,339.61)	1,577,009.42	73.67	856,479.81	709.59	846,498.98	1.18%	9,980.83
69	2,759,766.49	(1,103,906.60)	1,655,859.89	66.30	856,546.12	665.24	847,164.22	1.11%	9,381.90
70	2,897,754.81	(1,159,101.93)	1,738,652.89	59.67	856,605.79	623.66	847,787.88	1.04%	8,817.91
71	3,042,642.55	(1,217,057.02)	1,825,585.53	53.71	856,659.50	584.69	848,372.57	0.98%	8,286.93
72	3,194,774.68	(1,277,909.87)	1,916,864.81	48.34	856,707.83	548.14	848,920.71	0.92%	7,787.12
73	3,354,513.42	(1,341,805.37)	2,012,708.05	43.50	856,751.33	513.88	849,434.60	0.86%	7,316.74
74	3,522,239.09	(1,408,895.63)	2,113,343.45	39.15	856,790.49	481.77	849,916.36	0.81%	6,874.12
75	3,698,351.04	(1,479,340.42)	2,219,010.62	35.24	856,825.72	451.66	850,368.02	0.76%	6,457.71
76	3,883,268.59	(1,553,307.44)	2,329,961.16	31.71	856,857.44	423.43	850,791.45	0.71%	6,065.99
77	4,077,432.02	(1,630,972.81)	2,446,459.21	28.54	856,885.98	396.96	851,188.41	0.67%	5,697.57
78	4,281,303.62	(1,712,521.45)	2,568,782.17	25.69	856,911.67	372.15	851,560.56	0.63%	5,351.10
79	4,495,368.80	(1,798,147.52)	2,697,221.28	23.12	856,934.79	348.89	851,909.46	0.59%	5,025.33
80	4,720,137.24	(1,888,054.90)	2,832,082.35	20.81	856,955.59	327.09	852,236.54	0.55%	4,719.05
81	4,956,144.11	(1,982,457.64)	2,973,686.46	18.73	856,974.32	306.64	852,543.19	0.52%	4,431.13
82	5,203,951.31	(2,081,580.52)	3,122,370.79	16.85	856,991.17	287.48	852,830.67	0.49%	4,160.51
83	5,464,148.88	(2,185,659.55)	3,278,489.33	15.17	857,006.34	269.51	853,100.18	0.46%	3,906.16
84	5,737,356.32	(2,294,942.53)	3,442,413.79	13.65	857,019.99	252.67	853,352.85	0.43%	3,667.15
85	6,024,224.14	(2,409,689.66)	3,614,534.48	12.29	857,032.28	236.88	853,589.72	0.40%	3,442.56
86	6,325,435.34	(2,530,174.14)	3,795,261.21	11.06	857,043.34	222.07	853,811.79	0.38%	3,231.54
87	6,641,707.11	(2,656,682.84)	3,985,024.27	9.95	857,053.29	208.19	854,019.98	0.36%	3,033.30
88	6,973,792.47	(2,789,516.99)	4,184,275.48	8.96	857,062.25	195.18	854,215.16	0.33%	2,847.08
89	7,322,482.09	(2,928,992.84)	4,393,489.25	8.06	857,070.31	182.98	854,398.14	0.31%	2,672.16
90	7,688,606.20	(3,075,422.48)	4,613,183.72	7.25	857,077.56	171.54	854,569.69	0.29%	2,507.87
91	8,073,036.50	(3,229,214.60)	4,843,821.90	6.53	857,084.09	160.82	854,730.51	0.28%	2,353.58
92	8,476,688.33	(3,390,675.33)	5,086,013.00	5.88	857,089.97	150.77	854,881.28	0.26%	2,208.68
93	8,900,522.75	(3,560,209.10)	5,340,313.65	5.29	857,095.26	141.35	855,022.63	0.24%	2,072.62
94	9,345,548.88	(3,738,219.55)	5,607,329.33	4.76	857,100.02	132.51	855,155.15	0.23%	1,944.87
95	9,812,826.22	(3,925,130.53)	5,887,695.80	4.28	857,104.30	124.23	855,279.38	0.21%	1,824.92
96	10,303,467.64	(4,121,387.06)	6,182,080.59	3.86	857,108.16	116.47	855,395.85	0.20%	1,712.31
97	10,818,641.03	(4,327,456.41)	6,491,184.62	3.47	857,111.63	109.19	855,505.03	0.19%	1,606.59
98	11,359,573.08	(4,543,829.23)	6,815,743.85	3.12	857,114.75	102.36	855,607.40	0.18%	1,507.35
99	11,927,551.73	(4,771,020.69)	7,156,531.04	2.81	857,117.56	95.97	855,703.36	0.17%	1,414.20
100	12,523,929.32	(5,009,571.73)	7,514,357.59	2.53	857,120.09	89.97	855,793.33	0.16%	1,326.76

Endnotes and reference list can be found on page 21

- ⁶ Alternatively, the internal rate of return for the BTCF v. the pre-tax damages amount through any future period can be computed and would exceed the BTDR for discrete damages periods.
- ⁷ For the purpose of this article, this working premise is accepted. Some experts, however, disagree with this viewpoint and argue that a plaintiff is free to reinvest the after-tax damages award at rates of return and subject to risk levels that may be the same or different from the lost business opportunity.
- ⁸ For example, how does an expert model damages using an industry after-tax WACC, which represents industry average tax rates, interest expenses, capital investments, working capital needs and annual depreciation, when comparable components affecting the plaintiff's projected periodic cash flows diverge materially from the industry norms?

SELECTED REFERENCES FOR DAMAGES MEASUREMENT USING BTCF v. ATCF and BTDR v. ATDR

"The Time Value of Money" by Harold Dilbeck, Ch. 38 in *Litigation Services Handbook: The Role of the Accountant as Expert*, 2nd ed., eds. Roman L. Weil, et al., 1995.

"Tax Effects of Discount Rates in Taxable Damage Awards" by Greg Hallman and Michael J. Wagner, *CPA Expert*, AICPA, Winter 1999.

"Taxation Considerations in Economic Damages Calculations" by Jonathan S. Shefftz, *Litigation Economics Review*, Volume 6, Number 2: 45-49, Summer 2004.

Practice Aid 06-4 – *Calculating Lost Profits*, "Chapter 14: Taxes and Damages," Para. 131, American Institute of Certified Public Accountants (AICPA), 2006, p. 43.

"Pre and Post Tax Discount Rates and Cash Flows – A Technical Note" by Wayne Lonergan, *Journal of Applied Research in Accounting and Finance*, Vol.4, Issue 1, 2009, pp. 41-47.

Practice Aid – *Discount Rates, Risk, and Uncertainty in Economic Damages*, Chapter 6, subsection titled "An After-tax Discount Rate," AICPA, 2012.
