# DISCOUNT RATES AND LOST PROFITS... WHERE'S THE RISK?

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Consider the following two scenarios:

1. A property owner enters into a 10-year lease agreement, but prior to the lessee occupying the space, the market crashes. Consequently, the lessee breaches the agreement in favor of a more economical arrangement.

2. A start-up company enters into its first major licensing arrangement with an automobile manufacturer. However, soon thereafter, the automobile manufacturer terminates the arrangement before making any of the scheduled payments.

If you're in the shoes of the non-breaching party in these circumstances or a host of other potential scenarios, you've possibly sustained lost profits. However, expectations of lost profits often contain

uncertainties, including the probability that they may not arise until future periods. As a result, a CPA engaged to compute those lost profits will need to consider an appropriate discount rate to bring those damages amounts to present value. This article focuses on the development of a discount rate and how it relates to the calculation of lost profits.[1]

## OBJECTIVES OF A LOST PROFITS CALCULATION

When undertaking a lost profits calculation, the CPA should discount future profits at a rate that fairly compensates the plaintiff. Because the goal is to make the plaintiff whole, the plaintiff should receive an amount at the date of judgment that can be invested over the period of future loss and yield the plaintiff the amount of lost profits.

What does this objective necessitate? One common method to compute damages is the three column approach. This analysis compares the actual scenario with the "but-for" scenario and the difference is the damages quantification of the damages. If any portion of the damages occurs in the future, a discount rate, at a minimum, should be applied to take into consideration the time value of money. However, the bigger challenge for the CPA expert is to address the risk that the damages could have been realized in the "but-for" scenario and determine whether this risk is reflected in the discount rate selected. Accordingly, the CPA expert must consider whether or not:[2]

- the damages analysis incorporates sufficiently conservative assumptions. If so, the discount rate should reflect only the time value of money;
- the damages model leaves a residual amount of risk that should be addressed via a relatively higher discount rate; or

- the model should be left unadjusted with all risk considerations included in the discount rate.

All three of the approaches involve applying a reality check to the plaintiff's "hoped for" income stream. In other words, the CPA expert should analyze the achievability of the plaintiff's projections and challenge any speculative components or assumptions. Once the "hoped for" income stream has been adjusted, the expert will apply a discount rate consistent with the level of risk determined to be remaining in the projected cash flows.

The advantage of reducing risk in the damages model is transparency. Supporters argue that, whereas the CPA expert understands the resulting volatility that alternative discount rates may stimulate, a judge or jury is less likely to be in the same position. Supporters of the third theory argue that the correct method is to project the "hoped for" income stream and then account for risk by applying a risk adjusted discount rate. This method may be more frequently associated with business valuation purposes, where an entity's weighted average cost of capital or its cost of equity may be applied.

Ultimately, the appropriateness of a discount rate will depend on the theory that the user subscribes to, and it may vary given the particular circumstances of a matter. In practice, the low end of the range of discount rates may reflect the rate of return on a Treasury bond, which may be applied to a secure income stream in a breach of contract case with a counterparty of high credit standing. On the other end of the rate spectrum, an equity rate of return may be appropriate for an income stream that has greater risk, such as the projected future income of a new business.

## GUIDANCE FROM THE COURTS

Available case law provides evidence that courts will accept a broad range of applied discounts. For example, in *Schonfeld v. Hilliard*, 62 F.Supp 2d 1062 (S.D.N.Y. 1999), which involved a loss of $100,000 per year for a 10-year contract, the court accepted an 8% discount rate, the rate of the 10-year U.S. Treasury bond. Thus, the cash flow stream was assumed to be virtually risk free, and the discount rate reflected only the time value of money. In contrast, in another breach of contract case, *Fairmont Supply Company v. Hooks Industrial, Inc.*, No. 01-03-01129-CV (Tex. App. 1 Dist [Houston] 2005), the court accepted the range of 33% presented by the defendant's expert, and 36% presented by the plaintiff's expert. Assuming that in each case the same $100,000 10-year cash flow stream received at year end was at stake, the first court would have awarded approximately $671,000 (using an 8% discount rate), whereas the second court would have only awarded approximately $285,000 (using a 33% discount rate)—a significant difference to say the least.

A consequence of these two competing methods is that comparability between the two approaches is inherently complex. Using the discount rates accepted in each case would necessitate reducing the cash flow stream in the first case to approximately $42,500 to achieve results comparable to those in the second case. In other words, a 10-year cash flow loss of $42,500 per year discounted to present value at a constant rate of 8% would yield the same damages of approximately $285,000. Accordingly, a worthwhile consideration is whether a jury would understand that the application of a discount rate in the mid-30s (instead of 8%) essentially produces the same

1  For a more detailed description of the elements of a lost profits analysis, the reader is encouraged to study other texts that have been written on the subject (for example, AICPA Practice Aid No. 06-4, *Calculating Lost Profits*). For information about obtaining this publication, go online to www.cpa2biz.com or call 888-777-7077.

2  These approaches are more extensively summarized in "Modeling and Discounting Future Damages," by Robert Dunn and Everett Harry, *Journal of Accountancy*, January 2002.

result as reducing the annual cash flows well in excess of 50%.

Interest rates fluctuate over time relative to broader economic conditions. As a result, a practitioner may apply different absolute discount rates even in similar circumstances. For example, if the 10-year U.S. Treasury rate of return were employed as a discount rate in March 2009, the discount rate applied would have been only 2.8% and consequently the award would have been approximately $862,000.

The appropriateness of a discount rate is rarely talked about in court decisions. When it is, the discussion usually involves little more than identifying the rate that the court accepted. In the following pages, we explore a few cases in which discount rates came under discussion. The cases are representative of the available decisions directly addressing the discount rates selected by the testifying experts. Although no legal precedent has been established to define the appropriateness of specific discount rates given certain circumstances, the important lesson we observe is the reliance the courts place on the credible judgments of experts.

### ENERGY CAPITAL V. UNITED STATES
In *Energy Capital v. United States*, 302 F.3d 1314 (Fed. Cir. 2002), Energy sought to recover damages for breach of contract. Energy had negotiated an agreement, the Affordable Housing Energy Loan Program (AHELP), with the U.S. Department of Housing and Urban Development (HUD) to eliminate regulatory barriers to financing energy improvements in HUD properties. HUD promised to provide security for AHELP loans. However, HUD terminated the AHELP agreement approximately five months after it had been signed. In those five months, Energy had not completed the process of originating any loans, but the AHELP agreement did not have a termination for convenience clause.

Energy's expert calculated damages using a discounted cash flow approach. The expert employed a 10.5% discount rate based upon the average dividend yield for mortgage real estate investments trusts (REITs) of 8.5% plus 2% to account for the debt and profit components of the AHELP arrangement. The expert asserted this rate as a proxy because a mortgage REIT was a potential market participant for AHELP loans. The court concurred. The buildup of this discount rate, in this fashion, cited specific and reliable information, which increased the justification for its usage.

The court rejected the discount rate of 25% offered by the government's expert. Although the court did not specify the opposing expert's basis for opining on the appropriateness of this rate, the rate would appear to be the product of a weighted average cost of capital for Energy, or another similar computation. In this instance, the court's acceptance of the lower discount rate because the damages arose from a breach of the contract by the government appears to be a typical arrangement of lower risk. In addition, when determining the discrete cash flow loss of the AHELP agreement, Energy's damages should not be burdened by a discount rate potentially reflective of the aggregate cost of capital associated with its business. Thus, the term and risk of the arrangement are more consistent with the factors considered by Energy's expert.

### BURGER KING CORP. V. BARNES
In *Burger King Corp. v. Barnes*, 1 F. Supp.2d 1367 (S.D. Fla 1998), the dispute concerned the breach of a franchise agreement entered into between Burger King Corporation, as franchisor, and Zuri Barnes, as franchisee. The court found that Barnes' abandonment of the franchise agreement constituted a material breach of contract.

Barnes had agreed to pay Burger King a royalty of 3.5% of monthly gross sales. At the time of the breach, 17.5 years remained in the 20-year franchise agreement. The projected lost royalty income to Burger King for the remaining term of the agreement was reduced to present value at a discount rate of 9%.

The court did not provide a rationale for selecting this rate. However, at that time, average yields on U.S. Treasury securities with 10- to 30-year maturities were in the 5% range and the prime rate was generally 8.5%. Therefore, the court appears to have acknowledged that, despite the time remaining in the agreement, the Burger King franchise warranted a level of risk approximately commensurate with the prime rate at the time, a standard lending rate by banks to creditworthy customers.

### OLSON V. NEIMAN
In *Olson v. Nieman*, 579 N.W.2d 299 (Iowa 1998), Olson alleged misappropriation of his ideas by Nieman. Olson had developed an idea for breakaway hazard lights, which would activate flashing lights on a trailer if it disengaged from the transporting vehicle.

The plaintiff's expert developed four models to calculate damages, using a reasonable royalty measure of damages and a market approach. The expert presented, and the court accepted, a discount rate of 19.4%. He testified that the normal rate of return for publicly held corporations was 14.4%. He added an additional 5% to reflect the market risk of the device.

In this case, the opinion provided specific insight into the construction of the applied discount rate. Specifically, the construction of the accepted discount rate resembles a cost of equity analysis, using a buildup method adjusted for the risks associated with a relevant product market (see paragraph 114 of AICPA Practice Aid 06-4, *Calculating Lost Profits* for a discussion of this methodology). Compared with the

Burger King case, this higher discount rate was likely appropriate to address the greater degree of risk associated with a development stage company as opposed to a franchisee of an entity with a historical track record (note that both awards occurred in 1998, thereby facilitating comparability of applicable market rates of interest).

## OTHER DISCOUNT RATE GUIDANCE

The Office of Management and Budget (OMB) provides another perspective on discount rates. Since 1992, OMB Circular No. A-94, "Discount Rates for Cost Effectiveness Analysis of Federal Programs," has required an estimation of the economic cost of all proposed government regulations to be discounted at a rate of 7% because "that rate approximates the marginal pretax rate of return on an average investment in the private sector in recent years." The OMB adopted this definitional rate in part to promote comparability among proposed regulations; this rate may not be appropriate in other circumstances. The OMB also requires all submitted proposals to use other discount rates for purposes of illustrating sensitivities. CPAs can appreciate this requirement because of the implications for damages calculations caused by the discount rate as described herein.

## OTHER ISSUES CPAS CONFRONT IN DEFINING DISCOUNT RATES

Discount rates are also affected by the expert's decision to employ an ex-post or ex-ante approach to computing damages. As described in paragraphs 106–109 of AICPA Practice Aid 06-4, this selection entails the expert's decision whether to factor events subsequent to the purported damages date into the computation. If the expert adopts an *ex-ante* approach, then all profits are future profits and the damages amounts are discounted to present value as of the damages date.

However, if the expert adopts an *ex-post* approach, then he or she considers information available between the damages date and the time of the preparation of the damages computation, and only damages after the date of judgment are discounted to present value.

In a situation in which one expert employs an ex-ante approach and the other an ex-post approach, the discount rates applied may differ because of point-in-time prevailing economic conditions, differing durations of the period being discounted, and even events that occurred after the alleged damages date. For example, assume a hypothetical damages case involving the same 10-year stream of $100,000 cash flows received at the end of each year (note that cash flow as opposed to net income is the appropriate measure to consider). Further assume that the damages date was December 31, 2003, and the date of judgment was December 31, 2008. In this case, if the cash flows were discounted at a risk-free rate, an ex-ante approach might apply a discount rate of 4.3% (reflecting the then-current 10-year Treasury note), whereas an ex-post approach might apply a discount rate of 1.5% (reflecting the then-current 5-year Treasury

note). Although the same reference instrument was used for selecting the discount rate and the only difference was the term, the expert should be aware of the significant implications these approaches may have on a discount rate and consequently the damages computation. In particular, the prejudgment interest rates will take on increased relevance.

Another fact to consider is that, generally, an award of lost profits is taxable to the plaintiff. Therefore, lost profits calculations are usually prepared on a pretax basis. Because the goal is to make the plaintiff whole, the expert needs to consider the effect of taxes on the damages award. As a result, the appropriate discount rate to apply to pretax cash flows is the after-tax rate. If using an after-tax cash flow, the expert can apply an after-tax discount rate and then will need to gross up the after-tax amount for taxes that will need to be paid. The following table compares an after-tax discount rate applied to a pretax cash flow versus an after-tax cash flow.

*Assumptions:*
Pretax cash flow—$10,000
Pretax discount rate—20%
After-tax discount rate—13%
Tax rate—35%

| Pretax cash flow | $10,000 | |
|---|---|---|
| / (1 + after tax discount rate) | (1 +13%) = $ 8,850 | Taxable damages award |

| Pretax cash flow | $10,000 | |
|---|---|---|
| x (1 – tax rate) | (1–35%) = $ 6,500 | *(after tax cash flow)* |
| / (1 + after-tax discount rate) | (1+13%) = $ 5,752 | |
| / (1 – tax rate) | (1–35%) = $ 8,850 | Taxable damages award |

The following example illustrates how applying a pretax discount rate to a pretax cash flow results in an incorrect answer.

| Pretax cash flow | $10,000 |
|---|---|
| / (1 + pretax discount rate) | (1+20%) = $8,333 |

Paragraphs 130–133 of AICPA Practice Aid 06-4 provide additional information about the implications of taxes on discount rates.

## CPAS ARE UNIQUELY QUALIFIED TO DETERMINE DISCOUNT RATES

A uniform methodology for determining discount rates has not been established. However, CPAs have a unique combination of education and business experience that provides a basis for developing discount rates. The resources available to CPAs, including the detailed guidance provided in AICPA Practice Aids and other publications, enhance the reliability of information and methodologies employed. CPAs should use this background to ensure that the specific circumstances of a matter are adequately reflected in a damages computation, including in the discount rate. For these reasons, we believe that strong evidence suggests that the courts should accept CPA experts because they bring reasonable judgments and knowledge to perform these calculations, including determination of an appropriate discount rate. ▲▼

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