



Response to Three Persons' Opinions

by Herbert "Hal" Rosenthal, CPA, CFE, CVA

When examined by way of a counter-rebuttal, the three persons' rebuttal ("Response to One Man's Opinion") of this author's article entitled, "A New Look at Expected Cash Flows and Present Value Discounts" (hereafter referred to as the "Article"), serves as a catalyst in the production of a higher level of information and understanding in the field of economic damages assessment. An opposing expert's opinion, such as that represented by the three person's rebuttal, is deemed valid and meritorious only to the extent it sur-

vives scrutiny. This article is presented for the benefit of those engaged in, or interested in, the field of economic damages assessment and valuation as it relates thereto.

Background

The Article was prepared so as to share certain of the author's litigation experience and to support FASB's then—current activities in connection with clarification of Concept Statement No. 7. As stated in the Article, "The focus of this article is Con 7 in the context of economic damages."

While the Article dealt with Con 7, it was believed that persons skilled in valuation theory and methodology, especially as associated with economic damages assessment, will recognize that the Expected Cash Flow Approach as described in the Article is *a method of modeling and discounting future damages through income stream analysis*. And, moreover, that the method is virtually identical in substance, and substantially equivalent in form, with modeling and discounting methodology supported by leading authorities in the field.

So as to insure conformity with the goals and intent of FASB, and to obtain a related peer review, the author consulted with a recognized expert with the understanding that the expert's opinions are personal as opposed to representing an official position of the Board.



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As to peer review otherwise, prior to publication the Article was evaluated by AICPA technical editors.

Conceptual Issue

Contrary to the prevailing theme of the three persons' response, the fact that a particular technique or methodology has been accepted in the scientific community, including having been peer reviewed, is not by itself controlling. It does not replace, or substitute for, the need of the expert's technique or theory to be able to be "reasonably assessed for reliability" in the matter at hand. The assessment for reliability includes analysis of the *resulting conclusions produced by the application* of the technique or methodology and is not limited to the technique or methodology itself.

"There are very few things which we know which are not capable of being reduced to mathematical reasoning, and when they cannot, it's a sign that our knowledge of them is very small and confused..." (John Arbuthnot, "Of the Laws of Chance," 1692).

John Arbuthnot lived from 1667 to 1735. As a mathematician he translated Huygens' tract on probability in 1692. That was the first work on probability published in English.

With Arbuthnot's words in mind, an effective and accepted method to ascertain the reasonableness and reliability of the resulting conclusions of the techniques and methodologies coveted by the three persons' rebuttal is to convert the risk factors used in the associated calculations into the derivative actual dollar

amounts and time periods. The derivative form of the conversion represents a present value income stream analysis model of future damages, for which the opining expert must take full responsibility both in whole and in part.

Things equal to the same thing are equal to each other. It is hard to fathom why someone would oppose a methodology (modeling and discounting future damages through income stream analysis) and, instead, support a methodology that theoretically produces the same result (a model). The practical difference between the two approaches in the litigation arena is that an expert who developed a model is more likely to be able to reasonably support the contentions so developed and included within the model than an expert who failed even to prepare a model or is unable to account for the components of the model that is the derivative of his or her calculation.

As will be shown, the "preferred (valuation) approaches" included in the Conclusions section of the three persons' opinion are among the most vulnerable to impeachment.

Also, the following untrue statement is included in the three persons' Conclusions: "...the only approach to discount lost value recognized in the Federal Judicial Center's Reference Manual on Scientific Evidence, 2nd ed. is Capital Asset Pricing Model (CAPM). See page 303 in the Reference Guide on Estimation of Economic Losses in Damages Awards."

One of the two authors of the Federal Judicial Center's Reference Manual on Scientific Evidence, 2nd ed. is Professor Robert E. Hall of the

Hoover Institution, Stanford University. Inasmuch as the language on page 303 does not say that CAPM is the "only" approach but rather that it is a "common approach," Professor Hall was asked if it was his intent that the language on page 303 be accepted as quoted in the three persons' Conclusion. He responded, in writing, "Seems to me that p. 303 speaks for itself." And, indeed it does.

It should also be noted that while page 303 refers to the use of CAPM to "calculate the risk-adjusted discount rate," it does not address whether it was used in connection with larger companies or small to medium sized companies. (See below, *Use the Capital Asset Pricing Model (CAPM), really?*)

Valuation Approach Versus Economic Damages Approach*

Damages studies do not focus on valuation approaches. In a civil suit the trier of fact focuses on three elements of proof:

1. That a violation of a legal right has occurred
2. That this violation caused damages to occur
3. That the amount of damages has been estimated with reasonable accuracy

The key question to address in estimating the amount of damages is: Do the assumptions and methods used accurately portray the full extent of the changes caused by the violation...? The business valuation methods by which these changes are reduced to a present value of damages...are part of—but not the principal focus of—the examination.

Business valuation approaches include all the methods available to

* All of the language included in this section represents exact quotes (emphasis supplied) taken from "Use and Abuse of Business Valuation Concepts," co-authored by one of the three persons. That writing is included as Chapter 14 in the *Handbook of Advanced Business Valuation*, Robert F. Reilly and Robert P. Schweih, Eds., published by McGraw-Hill in 1999, and in the overall is in conflict with certain main themes and much of the content of the three persons' response.

benchmark the financial statements to present or fair market value. On the other hand, damages approaches include the methods used to demonstrate the fact *and* the amount of the injury.

There are three basic categories of damages approaches:

1. The before and after approach
2. The yardstick approach
3. The economic modeling approach

The damages estimate's *limitation* on future performance contrasts with a business valuation projection of future performance in perpetuity. Justifying the projection of damages in perpetuity...*requires proof* that the plaintiff's business has been destroyed.

Business valuations focus more on the methods used to benchmark the adjusted financial statements to market value than on the adjustments themselves. In contrast, in a damages calculation, the business valuation methods are only a part. Damages analysis focuses on how much of the *income statement* or statement of position should be included in damages. Business valuation comes second.

Damages are usually suffered during a distinct period of time, so the damage analysis does not usually rely on the perpetuity assumption that is typically part of a valuation analysis.

Damages experts need not consider more than one approach or method and need not limit their examination to data that were available prior to the valuation date.

There is very little case law or statutory authority as to what is an acceptable method or approach to calculate economic damages. The method or approach used by the damages expert is generally considered by the courts to be a question that is *unique* to the fact situation of the case in question. The courts

Illustrative Worksheet							
<u>Yr</u>	<u>Expected</u>	<u>Present Value @ 44.34%</u>	<u>Yr</u>	<u>Start</u>	<u>Reduction</u>	<u>Expected</u>	<u>Present Value @ 10%</u>
1	\$ 1,000	\$ 693	1	\$ 1,000	\$ 500	\$ 500	\$ 455
2	\$ 1,000	\$ 480	2	\$ 1,000	\$ 500	\$ 500	\$ 413
3	\$ 1,000	\$ 333	3	\$ 1,000	\$ 500	\$ 500	\$ 376
4	\$ 1,000	\$ 230	4	\$ 1,000	\$ 500	\$ 500	\$ 342
5	\$ 1,000	\$ 160	5	\$ 1,000	\$ 500	\$ 500	\$ 310
		<u>\$ 1,895</u>					<u>\$ 1,895</u>

are reluctant to generalize rules as to how to compute economic damages because there are so many unique factual situations that make it nearly impossible to arrive at rules that will always work.

“Modeling and discounting future damages: income stream analysis gives a better picture of what a plaintiff really may have lost” (result of Internet search of Robert L. Dunn from find-articles.com).

Reference is made to “Modeling and Discounting Future Damages” by Robert L. Dunn and Everett P. Harry, appearing in the January 2002 *Journal of Accountancy*. The statement, “Income stream analysis gives a better picture of what a plaintiff really may have lost” appears atop the article name and below the heading, “Litigation Services.”

Exhibit 4 of the article shows a Sample Subjective Risk Calculation wherein said risks are addressed in the model by comparing the 10 percent base discount rate with the aggregate discount rate of 44.34 percent, the latter of which includes both the subjective risks segment and the base rate segment.

The exhibit assumes a \$1,000 per year, projected cash flow for a five-year period, and a present value amount of \$1,895.39 is produced by both methods. It shows that in

order for that to be so, a \$500 per year reduction in annual expected cash flow is mathematically determined to be implicit in the combined discount rate of 44.34 percent (assuming 10 percent represents the “base rate”), which \$500 per year reduction was included in the calculation of present value at the 10 percent discount rate.

An illustrative worksheet is shown above:

These are the steps that produce the conversion: (1) calculate the PV of a \$1,000/year PMT, for a 5-year term, at a 44.34 percent PV discount rate (= \$1,895.39), (2) calculate the PMT, using a 10 percent PV discount rate, and a PV of \$1,895.39 (= \$500), (3) prove the result by calculating the PV of a \$500/year PMT, for a 5-year term, at 10 percent PV discount rate (= \$1,895.39).

Since the calculated payment (PMT, per step 2) conforms to the adjusted net cash flow, the pre-adjusted \$1,000 annual starting out figure had to have been reduced by \$500 (on account of the subjective risks). The model will reflect that adjustment.

Using larger dollar amounts as might be encountered in the real world; if the starting-out amount of expected cash flow were \$2,000,000 instead of \$1,000, the economics damages expert using the 44.34 percent

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rate would be responsible to account for and support the basis of a \$1,000,000 annual reduction in expected cash flow.

Explanation and support possibilities include, but may not be limited to, the following: (1) adjustment of the quantity of units sold, (2) adjustment of the unit selling price, (3) adjustment of the cost of sales percentage, (4) adjustment of the amount of fixed costs and (5) adjustment of semi-variable costs.

The assumption that the \$1,000,000 adjustment applies solely to the bottom line and that it is not in any way the result of any mix of the effect of the five, above-listed adjustment possibilities is, unconventional, to say the least. In a litigation setting, it stands to reason that the \$1,000,000 annual adjustment applicable to the category of subjective risks must be accounted for (by the user of the 44.34 percent discount rate) with reasonable specificity and certainty within the model of which it is inherently a part.

The authors, Dunn and Harry, include advice on how to “model” the present value. As will be shown, the advice is substantially identical in concept and in its particulars (including, but not limited to the worksheet in Table 2 of the Article, containing the column headed, “Expected”), with this writer’s description and detail of the expected cash flow approach included in the Article, which description is appropriate to repeat here:

The “expected cash flow approach”;

- A. Risk factors that cause variation to projected cash flows should be separately considered.
- B. The probability of different cash flows due to applicable unsys-

tematic or subjective risk factors should be applied in arriving at the expected cash flow or income stream.

- C. The expected cash flows should then be adjusted for the systematic risk inherent in them. According to Shannon P. Pratt, et al. in *Valuing a Business—The Analysis and Appraisal of Closely Held Companies*, systematic risk is, “The uncertainty of future returns due to sensitivity of the return on the subject investment to movements in the return for the *investment market as a whole*. (Emphasis added).
- D. The **resultant** net cash flow or income stream, determined as a result of steps a, b and c, should then be subject to the “safe investment rate”¹ to arrive at the present value amount.

Note: Special consideration must be given to item c (above)

Notionally, for purposes of income stream analysis the category of subjective risk can be viewed as those internal and external risks applicable to the income statement of the subject entity. This can be borne out simply by looking at the body of subjective risks included in “Modeling and Discounting Future Damages.”

The “risk free” rate is used to determine a sum of money, which will, if deposited in a secure account earning interest at a safe investment rate, exactly equal the funds needed to be paid out to the damaged party over the appropriate time period so that the plaintiff will neither have suffered a loss nor garnished a profit. In other words, the plaintiff is to be made whole.

A problem may occur when the discount rate for the category other than subjective risk includes item c

and the safe investment rate. Such inclusion appears to be a common practice in the methodologies advocated by the three persons whether included in an aggregate discount rate or within a “base rate.”

In the case of economic damages assessments that are based upon the expected cash flow or income stream related to loss of income over a distinct period of time—such as a three year period as may occur in a breach of contract matter where mitigation is considered—as opposed to (for example) valuation of a business entity, item c (above) may not be accepted as an appropriate factor for inclusion (for the purpose of making the plaintiff whole) in the discount rate.

Inspection of the systematic risk definition included at item c, in relation to the matter at hand as described in the immediately preceding paragraph, discloses that a “subject *investment*” is not what is being considered and that “movements in the return for the investment market as a whole” are of questionable applicability in terms of making the plaintiff whole. Systematic risk components include the following: general equity risk premium, beta coefficient for the subject industry to modify the general equity risk premium and the company size premium.

To the extent that item c is not applicable, but was embraced within a discount rate used to determine damages, **the mathematically derived dollar value of that factor represents a damages calculation error** in the form of an understatement.

Moreover, the error is compounded in that the inclusion of the unwarranted component within an aggregate discount rate has the dual effect

1. Hal Rosenthal. “The Present Value Calculation: A Sleeping Tiger” *Florida CPA Today*. December 1999. 10-14.

Exhibit A	Discount Rate Components					Rate Category Assignment		
		%	Allocate Growth	Sub-total	Divide by 1.04 Time Adj.	Risk free	Systematic	Un-systematic
<i>Note: Subject to rounding.</i>								
Risk free rate	5.6	0.31	(1.2)	4.4	4.2	4.20		
Equity risk premium (refelected systematic risk)	7.8	0.43	(1.7)	6.1	5.9	5.9		
Impact of "size effect" on risk	4.6	0.25	(1.0)	3.6	3.5	3.5		
Industry risk premium	-0.8	(0.04)	0.2	(0.6)	(0.6)	(0.6)		
Specific company risk per appraiser's judgment	1.0	0.05	(0.2)	0.8	0.8	0.8		
	18.2	<u>1.00</u>						
Less: long-term sustainable growth	-4.0	4.0						
	<u>14.2</u>			<u>14.2</u>				
Divide by time adjustment of 1.04	<u>13.7</u>				<u>13.7</u>	4.2	8.7	0.8

of altering the mathematical dollar value of the remaining components, thereby creating a second element of error in the damages calculation.

Exhibit A represents an Excel spreadsheet format that may be used as a tool to calculate the respective dollar values of risk factors included within an aggregate discount rate. Exhibit B represents a test of validity of the Exhibit A results.

“How to ‘model’ the present value,” (from *Modeling and Discounting Future Damages* by Robert L. Dunn and Everett P. Harry, appearing in the January 2002 *Journal of Accountancy*)

The following comments are extracted verbatim from the section entitled, How to “model” the present value. They are listed here to demonstrate their cogent similarity with, if not direct support of, this writer’s representative worksheet and related recommendations included in the Article. Numbering was added.

1. Obtain or prepare a spreadsheet model of the plaintiff-envisioned “success” outcome, which reflects the lost sales revenue, saved expenses and lost net profits.
2. The data should be arranged by interim time segment (by year, for example) across the damages period.
3. Identify the risks the plaintiff likely will attain lower-than-

Exhibit B							Present Value
Yr	Expected	@ 13.7%	Yr	Start	Reduction	Expected	@ 4.2%
1	\$ 1,000	\$ 880	1	\$ 1,000	\$ 219	\$ 781	\$ 750
2	\$ 1,000	\$ 774	2	\$ 1,000	\$ 219	\$ 781	\$ 719
3	\$ 1,000	\$ 680	3	\$ 1,000	\$ 219	\$ 781	\$ 690
4	\$ 1,000	\$ 598	4	\$ 1,000	\$ 219	\$ 781	\$ 663
5	\$ 1,000	\$ 526	5	\$ 1,000	\$ 219	\$ 781	\$ 636
		<u>\$ 3,458</u>					<u>\$ 3,458</u>

- hoped-for results.
4. For example, could the future economic returns be less than projected because unit sales would be lower, unit prices would be lower or variable expenses would be higher?
 5. Adjust the spreadsheet model for those identified risks with the objective of generating a stream of undiscounted lost profits that reasonably approximates the most likely or “expected” (in a probability sense) but-for outcome.
 6. Calculate the present value for the risk-adjusted lost profits stream by using an appropriate risk-abated discount rate.
 7. Prepare a suitable courtroom exhibit (not necessarily a spreadsheet) to display the information.
 8. If the expert believes the damages model represents the lost income stream with a high degree of certainty, he or she may

elect to use only a safe rate for discounting.

But a discount rate greater than the risk-free level may be appropriate if the facts warrant it. For example, the weighted average cost of capital can be used **if** it is consistent with the risk-adjusted model and will likely make the plaintiff economically whole over time. (Emphasis added).

“In pursuit of clarity” (again, from *Modeling and Discounting Future Damages* by Robert L. Dunn and Everett P. Harry, appearing in the January 2002 *Journal of Accountancy*).

This author apologizes for including so much content derived from a single source. His only excuse is that it is hard to resist picking up the gold that lies on the ground at one’s feet. The following quote, representing the two-paragraph conclusion of Robert L. Dunn and Everett P. Harry, helps to make this writer’s case.

“Although opposing experts typically present damages scenarios as impartial and based upon the expert’s experience or market derived data, they’re likely to be related to other companies’ data, may not be comparable and, usually, are not defined for plaintiff’s risks. Therefore, damages assessments that address risk through model adjustments and sensitivity analysis (evaluation of changing input factors), and minimize risk considerations in the discount rate can better serve the court.

Using a risk-adjusted model helps jurors identify, understand and resolve uncertainty about what the prospective income stream would have been but for the wrongdoing (if liability is proved). An appropriate present value is more easily determined, and the need for discount rate modifications in the damages award is minimized if not eliminated. Judicial decisions in business litigation are beginning to reflect a trend toward risk-abated discount rates. The approach described here is consistent with this trend.”

Given the observably high degree of homogeneity between the representations of this author as contained in the Article, and that of the above-included rendering provided by Robert L. Dunn and Everett P. Harry, the three persons’ opinions—were they valid—may be construed to mean that Dunn and Harry’s representations also “have not been generally accepted in the scientific community,” and that the work product resulting from application of their methodology shall be considered “subjective” (as in, “lacking in reality or substance”).

Is a model by any other name not a model?

In Lost Profits Analysis, Prepared for the FICPA Valuation and

Litigation Services Conference, January 16, 2004, by Thomas E. Hilton, MS, CPA/ABV, CVA, Mr. Hilton listed what he considers the “Elements of lost profits damages” and details the specificity with which those elements should be separately addressed, as applicable to the major line items contained in the income statement that is the source of the expected cash flow or income stream.

Such elements include, but are not limited to, the following: “Lost Revenue,” “Volume and (selling) Price,” “Costs,” (including “Fixed,” “Variable,” “Direct,” “Indirect” and “Incidental”). (Emphasis supplied). Mr. Hilton’s advice appears to be in clear conformity with the modeling and discounting future damages through income stream analysis approach. By comparison, unit and/or dollar values for the aforementioned individual elements of economic damages assessment applicable to the subject company are generally not specifically addressed in the “preferred approaches” advocated by the three persons.

Use the Capital Asset Pricing Model (CAPM), really?

In addition to the points discussed above bearing on the degree of wisdom of using CAPM in economic damages assessment, here are some cogent thoughts of Gary R. Trugman, CPA/ABV, MCBA, ASA, MVS, included in *How To Develop Discount Rates*, also presented at the FICPA Valuation and Litigation Services Conference, January 16, 2004.

“The capital asset pricing model (CAPM) is a method of determining a discount rate that is commonly used in the appraisal of *larger* companies. It has little, if any, applicability to small and medium-sized businesses, but no discussion about discount

rates would be complete without mentioning its existence. If the appraiser uses the CAPM to develop a discount rate to be used in the valuation of a smaller business, the appraiser has probably lost his or her mind...” “Remember, (CAPM) was developed for use in portfolio analysis and not business valuation.”

It is said that the vast majority of lawsuits in the U.S. involve small to medium size companies. That statement stands to reason in that companies of such size certainly constitute the greater number of business entities in the U.S. Since CAPM appears contraindicated for use even to value such companies, by what logic can CAPM be thought to be a preferred method for use in determining economic damages of the very same companies?

And further, in the event CAPM is used for economic damages assessments involving such entities, are we to assume that the user thereof is free of accountability for the results produced through the application of the method, primarily because lots of folks use it and therefore it must be right?

Will the real *Daubert* please stand up?

The following question was asked in the fall of 2000 of Judge Alex Kozinski, of the U.S. Court of Appeals Ninth Circuit, Pasadena, who was one of the judges to hear *Daubert v. Merrell Dow Pharmaceuticals, Inc.*: “Is the gatekeeper role extended to allow the court discretion to exclude an expert’s analysis that arrives at an unreasonable conclusion even though the expert may have applied widely used theories and methodologies?”

Judge Kozinski replied, in part, “A problem can arise when you explain your methodology—which may be quite standard and uncontroversial—

but...can't explain how you reached a conclusion based upon it. In such a situation your entire testimony may be challenged and thrown out."

One of the *four* factors applied by the *Daubert* court to determine the reliability of a particular expert's scientific theory or technique is Testing: Can the theory or technique be tested? In the case of small to medium sized companies in particular, the modeling and discounting damages method serves as an effective testing device.

The following quotes represent extracts taken from an article by Robert F. Reilly, CPA, ASA, CFA, "*Guidelines For Guarding Against Daubert Challenges To Expert Testimony*," CPA Expert, Summer 1999: From the section therein, "Complying with *Daubert* Guidelines";

"Apply the relevant professional standards."

In addition to standards related to valuation, economic damages assessment activities performed by CPAs come under the purview of Rule 201, General Standards, which include, among others, Due Professional Care and Sufficient Relevant Data. It is questionable if a CPA can claim to have exercised due professional care (which includes "critical analysis of all work performed") if the CPA failed to test conclusions derived from the application of the theory or methodology used to determine the damages amount, or erroneously cited a reference in support of a material conclusion. It is further questionable if a CPA can claim to have obtained sufficient relevant data if the CPA failed to examine the subject company specifics (including the body of subjective risks as they apply to the subject company) at least to the extent required for the preparation of a basic model of that company's expected cash flows.

"Know the relevant professional literature"

In the instant matter, this might include the relevant literature contained in this article, especially such literature that has been previously published by the expert and which contradicts the expert's current opinions (contained in, for example, "Response to One Man's Opinion").

"Use generally accepted analytical methods"

There seems no doubt that modeling and discounting future damages constitutes a generally accepted analytical method, especially in connection with economic damages and valuation of small and medium sized businesses. Yet, the three persons do not support its use and instead recommend the use of methods, which, under various circumstances encountered in the litigation arena, are of questionable applicability.

"Disclose all significant analytical assumptions and variables"

"Generally, the CPA should identify, quantify (if possible), and justify the most important analytical assumptions and variables." As developed in this writing, the assumptions and variables are not limited to the theory, process or methodology itself, but include the assumptions derived from and implicit in the theory, process or methodology used to determine the amount of economic damages.

"Test the analysis"

"...the CPA should assess the overall reasonableness of the *indicated results*." (Emphasis supplied). "If the CPA is not convinced of the reasonableness of the analysis, it is likely the trier of fact will not be convinced of the reasonableness of his or her testimony." Again, the modeling and discounting damages method serves as an effective testing device.

"One Man's Opinion"

Virtually all of the significant achievements in the arts and sciences throughout history emanated from one man's, or one woman's, opinion. Were it not for the fact that this author's opinions expressed in the Article are shared by a number of highly respected individuals, he would be pleased to accept as a major compliment the allegation that the opinions are his alone.

However, it is quite obvious that the assertion was disingenuous and intended to cause readers to believe, without proof, that no one other than this writer holds the same opinions. So as not to be perceived as guilty of the same flaw, please know that the use of the term, "Three Persons' Opinion," was not similarly intended.

Rather, it was intended tongue-in-cheek and as a respectful reminder to all that whenever one man's, or one woman's, opinion manifests itself, it should be treated differently than did the three persons. Valuation is a "soft" science, in addition to being a relatively new "science," that is in the throws of evolution and change. Accordingly, such opinions should be valued, and not discouraged, for the greater benefit of society as a whole and for the CPA profession in particular. VE

Additional Resources

1. The original document "A New Look at Expected Cash Flows and Present Value Discounts" is available online at www.askhal.com/newlook.html
2. Book—*Winning with Expert Witnesses in Commercial Litigation* by Robert L. Dunn