



1984

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Recommended Citation

Waldrop, Alexander M. (1984) "Accounting for Inflation and Other Productivity Factors When Calculating Lost Future Earning Capacity," *Kentucky Law Journal*: Vol. 72 : Iss. 4 , Article 10.
Available at: <https://uknowledge.uky.edu/klj/vol72/iss4/10>

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Accounting for Inflation and Other Productivity Factors When Calculating Lost Future Earning Capacity

INTRODUCTION

With its recent decision in *Paducah Area Public Library v. Terry*,¹ the Kentucky Court of Appeals became one of a growing number of courts² taking into consideration inflation³ or other productivity factors⁴ when awarding damages for lost future earnings.⁵ By applying the "total offset" method,⁶ the

¹ 655 S.W.2d 19 (Ky. Ct. App. 1983).

² As of the date of this writing at least nine federal circuit courts of appeals and 27 states had adopted some approach for computing lost future earnings taking into consideration inflation or other productivity factors. They included the 1st, 2d, 3d, 5th, 6th, 8th, 9th, 10th and D.C. federal circuit courts of appeals, Alaska, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland, Michigan, Minnesota, Montana, Nebraska, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, Washington and Wisconsin. See notes 16, 20, 27 and 30 *infra* for cases cited in those jurisdictions.

³ "Inflation" will be used in this Comment to refer generally to the decreased purchasing power of money. A more technical definition describes inflation as "a substantial rise of prices caused by an undue expansion in paper money or bank credit." THE RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE 730 (1966).

⁴ Productivity factors encompass all gains, including increased labor productivity, age, experience, education and inflation, that combine to constitute wage gains over the course of a lifetime. See note 24 *infra* for a brief discussion of wage gains.

⁵ [Traditionally] [t]he goal of such an award is to give the plaintiff the amount which, if invested in reasonably safe investments, will return the amount of future loss at the appropriate time. Thus, the dollar amount awarded currently will be less than the future dollar amount. The "reduction to present worth" requires application of an assumed rate of interest, sometimes called the "discount rate," in order to determine the present value of dollars due in the future. The higher the discount rate used by the court, the lower will be the amount of dollars awarded presently to compensate for any given future loss.

Annot., 21 A.L.R. 4th 21, 48 (1983). See, e.g., *Chesapeake & O.R.R. v. Kelley*, 241 U.S. 485 (1916). See generally 22 AM. JUR.2D *Damages* § 96 (1965).

⁶ See, e.g., *Beaulieu v. Elliot*, 434 P.2d 665 (Alaska 1969). The Alaska Supreme Court was first to utilize this method to account for inflation. The court reasoned that it would be proper to consider the effect of anticipated inflation on awards for lost future earnings by not reducing the award to present value, since the discount rate would be entirely offset by the anticipated rate of inflation. See *id.* at 671.

court acknowledged that future damage awards given in one "lump sum" are "likely to suffer the erosion of inflation."⁷ Explaining its action, the court stated:

We adopt the reasoning that the relationship of interest rates and rates of inflation are "self-adjusting" and it is unnecessary to concern the jury with either. Because the two totally offset each other, the jury may make a fair and reasonable award in present worth without introduction of evidence or instruction. The injection of such matters in the trial is not prejudicial but irrelevant and non-essential; all however within the discretion of the court.⁸

The United States Supreme Court has long held the legal and economic principle underlying assessment of damages to be full compensation for the injured party.⁹ This Comment considers whether the "total offset" method fully and fairly compensates an injured party. Even though the court of appeals moved in the right direction, the court traded accuracy for efficiency, and in the process failed to clarify a predictable formula. Given the United States Supreme Court's historical objective in awarding damages, further refinement of Kentucky's formula for calculating damages is in order.¹⁰

⁷ Paducah Area Pub. Library v. Terry, 655 S.W.2d at 25.

⁸ *Id.* The court was influenced by what it perceived as the expanding recognition of the "total offset" method. *Id.* at 26.

⁹ *E.g.*, Bussy v. Donaldson, 4 U.S. (4 Dall.) 206 (1800). Under Kentucky law, there is no difference in computation of earnings lost, whether due to wrongful death or to personal injury. Paducah Area Pub. Library v. Terry, 655 S.W.2d at 23.

¹⁰ In reaffirming the commitment to fully compensate the injured, the United States Supreme Court recently stated:

[F]uture employment itself, future health, future personal expenses, future interest rates and future inflation are also matters of estimate and prediction. Any one of these issues might provide the basis for protracted expert testimony and debate. But the practical wisdom of the trial bar and the trial bench has developed effective methods of presenting the essential elements of an expert calculation in a form that is understandable by juries that are increasingly familiar with the complexities of modern life. We therefore reject the notion that the introduction of evidence describing a decedent's estimated after-tax earnings is too speculative or complex for a jury.

Norfolk & W.R.R. v. Leipelt, 444 U.S. 490, 496 (1980) (dictum).

I. BACKGROUND

In calculating damages, courts are concerned with three policies: accuracy, efficiency and predictability.¹¹ In general, when considering the effects of inflation and other productivity factors on damage awards, courts have taken three basic approaches: (1) the traditional approach, (2) the middle ground approach, and (3) the evidentiary approach.¹²

A. *The Traditional Approach*

Courts following the traditional approach, although discounting awards to present value, refuse to consider inflation or other productivity factors because they consider these too speculative.¹³ This position is somewhat inconsistent, since discounting to present value "is an economic and mathematical refinement . . . [even] . . . more minute, more fictional and speculative, than an allowance for inflation."¹⁴ Although this approach achieves predictability by eliminating some variables and efficiency by limiting evidence admitted, the approach's basic assumptions are questionable.¹⁵

¹¹ See *Freeport Sulphur Co. v. Steamship Hermosa*, 526 F.2d 300, 308-12 (5th Cir. 1976) (Wisdom, J., concurring). See generally Note, *Future Inflation, Prospective Damages and the Circuit Courts*, 63 VA. L. REV. 105 (1977) (discussing the relationship of the three policy considerations).

¹² See generally Note, *supra* note 11, at 125; Note, *Considering Inflation in Calculating Lost Earnings*, 18 WASH. L. REV. 499, 502-09 (1979).

Another commentator has outlined four basic approaches, although his analysis of productivity factors is restricted to the scope and admissibility of an expert's predictions of inflation. See Note, *Admissibility of Expert Economic Testimony on Future Inflationary Trends*, 1976 WASH. U.L.Q. 135. This writer's four approaches are as follows:

[The court] can (1) allow economic experts to present projections, subject to careful jury instruction concerning their probative value; (2) allow the jury to consider inflation based on its own knowledge or on general information supplied by an economist . . . ; (3) discard the requirement that judgments be reduced to present worth; or (4) shift the emphasis of the controversy to methods of computing present worth that provide an "inflation-proof" discount rate.

Id. at 146-47.

¹³ See, e.g., *Williams v. United States*, 435 F.2d 804 (1st Cir. 1970). *But cf.* *Crabtree v. St. Louis S.F.R.R.*, 411 N.E.2d 19 (Ill. App. Ct. 1980) (upholding counsel's argument to jury requesting consideration of inflation).

¹⁴ 1 S. SPEISER, *RECOVERY FOR WRONGFUL DEATH* 2D § 8:9, at 728 (1975).

¹⁵ Courts using this approach assume that inflation is neither persistent nor pre-

B. *The Middle Ground Approach*

The middle ground approach recognizes that future inflation and wage gains have an effect on damage awards, but this method fails to provide a mechanism for the precise assessment of damages.¹⁶ Often, judges simply take judicial notice of inflation when reviewing damage awards for excessiveness.¹⁷ Courts applying this approach only allow juries to use their common knowledge of inflation in reaching a verdict because of a fear that experts might exert undue influence on a jury's decision.¹⁸ While efficient, this approach lacks both accuracy and predictability because the factfinder is allowed to speculate on complicated economic variables without the aid of experts.

C. *The Evidentiary Approach*

The evidentiary approach, in its several variations, allows the use of expert testimony and attempts to reconcile the tension between accuracy and efficiency. The evidentiary approach can be broken down into three separate methods: (1)

dictable. *See, e.g.*, *Williams v. United States*, 435 F.2d at 804.

¹⁶ *See, e.g.*, *Morvant v. Construction Aggregates*, 570 F.2d 626 (6th Cir. 1978) (jury allowed to consider inflation but no expert testimony on the subject admitted), *cert. denied*, 439 U.S. 801 (1979); *Bach v. Penn Cent. Transp. Co.*, 502 F.2d 1117 (6th Cir. 1978) (jury allowed to consider future inflation generally so long as testimony avoided specific rates projected into the future); *Willmore v. Hertz Corp.*, 437 F.2d 357 (6th Cir. 1971) (applied Michigan law to uphold jury instruction that members could consider inflation even though no testimony had been heard); *Richmond Gas Corp. v. Reeves*, 302 N.E.2d 795 (Ind. Ct. App. 1973) (consideration of general inflationary factors within the discretion of the court); *Bell Aerospace Corp. v. Anderson*, 478 S.W.2d 191 (Tex. Civ. App. 1972) (elements of wage increases and inflation considered generally before awarding damages). *See also* *Deweese v. United States*, 576 F.2d 802 (10th Cir. 1978) (error for trial court to refuse to consider inflationary trends); *Wright v. United States*, 507 F. Supp. 147 (E.D. La. 1981) (applied a six percent inflation factor without expert testimony).

¹⁷ This is apparently the approach Kentucky courts have taken in the past. "On appeal, the appellate court has considered excessiveness with an eye on the interest earning capacity of the award as well as the probable decrease (future inflation) in purchasing power of the award." *Paducah Area Pub. Library v. Terry*, 655 S.W.2d 19, 25 (Ky. Ct. App. 1983) (citing *Western Ky. Coal Co. v. Shoulders' Adm'r.*, 28 S.W.2d 479 (Ky. 1930)).

¹⁸ *See, e.g.*, *Bach v. Penn Cent. Transp. Co.*, 502 F.2d at 1122 (expert testimony projecting to the year 2002 was too speculative).

the "offset present value" method, (2) the independent incorporation method, and (3) the "total offset" method¹⁹ used by the court in *Terry*.²⁰

1. *The "Offset Present Value" Method*

This method is a simple calculation, limited to compensation for the effects of inflation on the award for future earnings.²¹ In *Feldman v. Allegheny Airlines, Inc.*,²² the court calculated an "inflation adjusted" discount rate by subtracting the average yearly price increase over the past eighteen years (2.87%) from the average yearly yield from deposits in mutual savings banks (4.14%), arriving at an approximate "inflation adjusted" discount rate (1.5%).²³ After allowing extensive testimony detailing the decedent's grades and employment history in order to determine productivity gains that she might have enjoyed over her lifetime,²⁴ the court discounted the jury's award by 1.5%.²⁵ Critics of this method question the wisdom of projecting future inflation and interest rates using

¹⁹ See Note, *Future Inflation as a Factor in the Determination of Damages*, 12 U. Tol. L. Rev. 369, 383-89 (1981) (discussion of these three methods).

²⁰ See *Paducah Area Pub. Library v. Terry*, 655 S.W.2d at 25.

²¹ Note, *supra* note 19, at 385.

²² 382 F. Supp. 1271 (D. Conn. 1974), *aff'd in part, rev'd in part on other grounds*, 524 F.2d 384 (1st Cir. 1979). See also *Doca Mercante v. Marina Nicaraguense, S.A.*, 634 F.2d 30 (2d Cir.) (inflation rate reduces discount rate to two percent rate), *cert. denied*, 451 U.S. 971 (1980); *Espana v. United States*, 616 F.2d 41 (2d Cir. 1980) (inflation rate reduces discount rate to five percent); *Davis v. New Orleans Public Belt R.R.*, 375 So.2d 395 (La. Ct. App. 1979) (three percent inflation factor and three percent wage increase factor added to award after reduction to present value); *Busch v. Busch Const., Inc.*, 262 N.W.2d 377 (Minn. 1977) (expert testimony permitted to adjust discount figure for inflation).

²³ 382 F. Supp. at 1293. The actual figure arrived at was 1.27% but the court rounded the figure upward to 1.5%. *Id.*

²⁴ A common mistake made by courts is failing to distinguish inflation from other productivity factors which might influence overall wage gains. Future earning capacity may increase even in the absence of inflation, as at least four factors contribute to an increase in wages over the life of a worker: (1) education level, (2) age and maturity, (3) increases in worker productivity due to experience and mechanization, and (4) inflation. If an award is to compensate fully, then it must be responsive to each of these variables. Henderson, *The Consideration of Increased Productivity and the Discounting of Future Earnings to Present Value*, 20 S.D.L. Rev. 307, 312 (1975).

²⁵ 382 F. Supp. at 1283-87.

historical data to estimate potential changes.²⁶

2. The "Independent Incorporation" Method²⁷

While perhaps the most accurate, the "independent incorporation" method is also time consuming and complicated. By increasing each year's estimated earnings, including wage increases due to productivity gains, by the compounded rate of inflation as set by competent expert testimony, the court arrives at "inflation adjusted" earnings which are then discounted to present value by a discount rate determined by expert testimony.²⁸ The obvious weakness of this position is that

²⁶ See note 97 *infra* and accompanying text discussing attempts to project inflation.

²⁷ This approach has been adopted by a number of federal and state courts. *See, e.g.,* Taenzler v. Burlington Northern, 608 F.2d 796 (8th Cir. 1979) (utilized "limited" expert testimony); Drayton v. Jiffee Chem. Corp., 591 F.2d 352 (6th Cir. 1978) (applying Ohio law, expert testimony utilized); Steckler v. United States, 549 F.2d 1372 (10th Cir. 1977) ("total offset" method rejected in favor of general evidentiary approach); Johnson v. United States, 510 F. Supp. 1039 (D. Mont. 1981) (future wage increases considered with help of expert testimony); Hardin v. United States, 485 F. Supp. 380 (S.D. Ga. 1980) (applying Georgia law, expert testimony allowed); Mullins v. Seals, 416 F. Supp. 1098 (W.D. Va. 1976) (applying Virginia law, allowed expert testimony on increased productivity); District of Columbia v. Barriteau, 399 A.2d 563 (D.C. 1979) (allowed evidence of inflation within reasonable limits); Seaboard Coast Line Rail Co. v. Garrison, 336 So. 2d 423 (Fla. Dist. Ct. App. 1976) (mere fact that the future rate of inflation is uncertain is not sufficient to exclude expert testimony); Lumber Terminals, Inc. v. Nowakowski, 373 A.2d 282 (Md. 1977) (expert testimony utilized); Ossenfort v. Associated Milk Producers, Inc., 254 N.W.2d 672 (Minn. 1977) (expert testimony allowed to help jury calculate discount rate and inflation rate); Ott v. Frank, 277 N.W.2d 251 (Neb. 1979) (expert testimony allowed as to projected increase in wages and projected increase in tax shelters); Nelson v. State, 431 N.Y.S.2d 955 (1980) (reasonably certain calculations required); Plourd v. Southern Pac. Transp. Co., 513 P.2d 1140 (Or. 1973) (future wage gains considered); Markham v. Cross Transp., Inc., 376 A.2d 1359 (R.I. 1977) (wage growth considered by trier of fact); Cords v. Anderson, 259 N.W.2d 672 (Wis. 1977) (error for courts to refuse expert testimony on inflation).

²⁸ In *United States v. English*, 521 F.2d 63 (9th Cir. 1975), the court of appeals accepted the calculations of the district court where "inflation adjusted" earnings (or "lost gross earnings" as the court in *English* described them) were calculated using a base income figure of \$21,800, which was the decedent's earnings for 1970. By applying a projection factor of 7.5% annual increase over the estimated productive life of the decedent (in this case seven years) the district court arrived at \$169,000 for adjusted earnings. The 7.5% projected annual increase used to compute an estimate of the decedent's lost gross earnings was based on the earnings growth history of persons employed in contract construction. This figure not only reflected pay increases due to regular promotions and increased skill but incorporated an inflationary element as

inflation rates and interest rates must remain as projected at trial or the plaintiff may be unjustly compensated.

3. The "Total Offset" Method

In *Beaulieu v. Elliot*,²⁹ the Alaska Supreme Court developed the "total offset" method as a viable alternative to the traditional reduction to present value.³⁰ Recognizing the fact that inflationary expectations affect interest rates,³¹ the Alaska court refused to reduce the plaintiff's award on the theory that over the course of the plaintiff's lifetime, the inflation rate would completely offset the interest rate used to reduce the award to present value.³² Without the aid of expert testimony, the court assumed that inflation would be roughly equivalent to the discount rate, thereby calculating damages

well. *Id.* at 71.

The \$169,000 was then reduced by \$49,000 for personal consumption leaving \$120,000 undiscounted net earnings loss. The Ninth Circuit Court of Appeals then instructed the district court to reduce the award to present value using an appropriate discount rate. *Id.* at 76. The circuit court barred the district court from assuming that the discount rate and inflation rate would net to zero, requiring that estimates of inflation and productivity be based on competent evidence and that each award for "inflation adjusted" earnings be reduced to present value. *Id.* at 75.

²⁹ 434 P.2d 665 (Alaska 1969).

³⁰ See *id.* See also *Draisma v. United States*, 492 F. Supp. 1317 (W.D. Mich. 1980) (after expert testimony, the court found inflation rate and discount rate matched); *Schnebly v. Baker*, 217 N.W.2d 708 (Iowa 1974) (expert testimony proved discount and inflation rates offset one another); *Resner v. North R.R.*, 505 P.2d 86 (Mont. 1973) (jury calculated both five percent wage growth rate and five percent discount rate); *Kaczkowski v. Bolubasz*, 421 A.2d 1027 (Pa. 1980) (productivity gains calculated separately by expert testimony and offset method used to account solely for inflation).

³¹ Irving Fisher's work on the effect of inflationary expectations on interest rates is the basis of the "offset method." Formuzis & O'Donnell, *Inflation and the Valuation of Future Economic Losses*, 38 MONT. L. REV. 297, 300 (1977). Fischer noted that inflation and interest rates are interrelated. When people expect prices to rise, they are less likely to save money, electing instead to spend while prices are lower, which causes capital market supply funds to dwindle. This, in turn, causes interest rates to rise as supply lessens. The higher the inflation, the higher the interest rates, and vice versa. See I. FISHER, *THE THEORY OF INTEREST* (1930).

³² 434 P.2d at 671. See *Carlson, Economic Analysis v. Courtroom Controversy, the Present Value of Future Earnings*, 62 A.B.A. J. 628 (1976) (analysis of the rationale behind the "total offset" method). But see *Coyne, Present Value of Future Earnings: A Sensible Alternative to Simplistic Methodologies*, 49 INS. COUNS. J. 25 (1982).

simply by multiplying base earnings³³ by the number of productive years the deceased would have enjoyed.³⁴ The *Beaulieu* court refused to consider productivity increases.³⁵

II. RECENT COURT DECISIONS APPLYING THE "TOTAL OFFSET" METHOD

A. Paducah Area Public Library v. Terry³⁶

In *Terry*, the plaintiff sustained permanent injury when the vehicle in which she was a passenger was struck head-on by a vehicle owned and operated by the Paducah Area Public Library.³⁷ At trial, the only issue for the jury was the amount of damages.³⁸ The jury returned a verdict of \$983,456.57.³⁹ More than half the verdict was compensation for physical pain and suffering.⁴⁰ The trial judge refused to permit evi-

³³ Base earnings simply means annual salary at the time of death or injury.

³⁴ 434 P.2d at 670-71.

³⁵ *Id.* at 672. One commentator pointed out the inconsistencies of *Beaulieu*: The *Beaulieu* court applied a somewhat circular logic in defending the decision to refuse productivity increases as well as refusing to discount the award to present value. It held that failure to discount an award would offset any loss of potential wage increases the plaintiff might have accrued. The court then stated, however: "Thus if there is any fear that failure to reduce the award will give the plaintiff more than he is entitled to . . . such fear is obviated by the fact that the award may well be deficient in that it does not take into account probable wage increases."

Note, *The Adjustment of Awards for Lost Future Earning Capacity to Compensate for Inflation and Increased Productivity: Kaczowski v. Bolubasz*, 7 U. DAYTON L. REV. 139, 150 n.77 (1981) (citing *Beaulieu v. Elliot*, 434 P.2d at 672). Likewise, the *Beaulieu* approach was recently criticized by the Fifth Circuit.

Although we find it imprudent to adopt the Alaska Rule, because it is fraught with the same inflexibility that *Penrod* exhibited, we approve the use of any of the methods outlined for calculating future wage losses that results in fairness to plaintiffs and defendants. We see no reason to make the economic judgment . . . that the rate of future inflation will be equivalent to future interest rates.

Culver v. Slater Boat Co., 688 F.2d 280, 307 (5th Cir. 1982). The court, apparently approved the "offset present value" method outlined in *Feldman v. Allegheny Airlines, Inc.*, 382 F. Supp. at 1271, while reserving the right to use other methods as well.

³⁶ 655 S.W.2d 19 (Ky. Ct. App. 1983).

³⁷ *Id.* at 21.

³⁸ Plaintiff was granted a directed verdict on the issue of liability. *Id.*

³⁹ *Id.* at 22.

⁴⁰ *Id.* Awards for pain and suffering are not reduced to present value in Ken-

dence of present worth or to instruct the jury to reduce the award to present worth.⁴¹ On appeal,⁴² the Kentucky Court of Appeals upheld the judge's decision, citing as authority the "total offset" method outlined in *Beaulieu*.⁴³

Unless the "total offset" method is carefully applied, unjust awards result. Analysis of other courts' use of the "total offset" method reveals how the court in *Terry* might have more accurately utilized the Alaska court's method.

B. *Pennsylvania's Adoption of the Total Offset Method in Kaczowski v. Bolubasz*⁴⁴

The Pennsylvania Supreme Court applied the "total offset" method in *Kaczowski*, relying on the method in a way that reflected a consideration of all factors impinging upon future wage increases.⁴⁵ The court was aware that "[t]he orderly development of the law must be responsive to new conditions and to the persuasion of superior reasoning," and embarked on an analysis of statistical and economic evidence to substantiate acceptance of inflation and increased productivity as factors in the calculation of lost future earnings.⁴⁶ After considering the general approaches taken by other courts, the *Kaczowski* court concluded that the evidentiary method was the best method to compute lost future earnings because it viewed expert testimony as essential to accurate economic forecasting.⁴⁷ Using a hybrid approach, the court combined

tucky. See, e.g., *Louisville & N.R.R. v. Gayle*, 263 S.W. 763 (Ky. 1924).

⁴¹ 655 S.W.2d at 24.

⁴² Defendants raised several additional issues on appeal, including failure to instruct the jury on tax impact.

⁴³ 655 S.W.2d at 26. See text accompanying notes 29-35 *supra* for a discussion of the *Beaulieu* approach to inflation.

⁴⁴ 421 A.2d 1027 (Pa. 1980).

⁴⁵ See *id.* at 1037-38. Pennsylvania now applies the "total offset" method as a matter of law. Thus, all Pennsylvania courts must utilize the method to compensate for inflation. *Id.* at 1038-39.

⁴⁶ See *id.* at 1032-34 (quoting *Griffith v. United Air Lines*, 203 A.2d 796 (Pa. 1964)). The new conditions referred to by the court were related to a change in opinion regarding the ability to define and predict inflation and productivity. *Id.* at 1032.

⁴⁷ See *id.* at 1035. The court in *Kaczowski* specifically rejected the middle ground approach as inaccurate and unpredictable. *Id.* at 1034-35.

*Feldman's*⁴⁸ allowance of productivity gains (based on expert testimony) with *Beaulieu's*⁴⁹ use of the "total offset" method to compensate for inflation.⁵⁰

Kaczkowski is instructive because the case shows how to account realistically for the entire range of productivity gains in determining lost future earnings. The Pennsylvania court rejected the rationale relied upon in *Beaulieu* that wage gains are comprised solely of inflationary factors.⁵¹ If the goal is full compensation, then the court has a duty to insure that the plaintiff is not undercompensated because of outdated assumptions about wage increases.⁵² Although the Kentucky Court of Appeals moved in the right direction by disallowing reduction to present value,⁵³ it may have done so without adequately accounting for all the variables that constitute future gains in earnings, including educational attainment prior to entry into the labor market, the influence of age on lifetime

⁴⁸ *Feldman v. Allegheny Airlines, Inc.*, 382 F. Supp. 1271 (D. Conn. 1974), *aff'd in part, rev'd in part on other grounds*, 524 F.2d 384 (1st Cir. 1975). See text accompanying notes 22-26 *supra* for a discussion of the *Feldman* approach to productivity factors.

⁴⁹ *Beaulieu v. Elliot*, 434 P.2d 665 (Alaska 1969). See text accompanying notes 30-35 *supra* for a discussion of the *Beaulieu* application of the "total offset" method to account for inflation.

⁵⁰ See 421 A.2d at 1036 (citing *Feldman v. Allegheny Airlines, Inc.*, 382 F. Supp. at 1271; *Beaulieu v. Elliot*, 434 P.2d at 665). The Pennsylvania court noted that the *Beaulieu* court's refusal to consider merit-based increases discriminated against persons whose salaries depend on their skill, experience and value to their employer. *Id.* at 1037.

⁵¹ See *id.* The Kentucky Court of Appeals in *Terry* apparently relied on the *Beaulieu* rationale. However, it is unclear from the *Terry* opinion what kind of expert testimony was allowed at trial concerning the injured child's diminished future earning power, since that issue was not considered on appeal. See *Paducah Area Pub. Library v. Terry*, 655 S.W.2d at 23.

⁵² Focusing solely on inflation is unrealistic in view of the fact that money wages have steadily increased for the last several decades, along with productivity and price levels. Between 1947 and 1973, the compound rate of interest in the consumer price index was 2.8% per annum, while the index of hourly construction earnings rose by 5.6% per annum. The index of average hourly earnings in manufacturing increased at a compound rate of five percent. Consequently, the major cause in the rise of money earnings is not inflation, but factors associated with increases in productivity such as mechanization, job experience, merit increases and maturity in general. See Henderson, *supra* note 24, at 314-23. See also UNITED STATES DEPT. OF LABOR, BUREAU OF LABOR STATISTICS, HANDBOOK OF LABOR STATISTICS 175 (1973) (showing increases in output per man-hour and increases in compensation from 1947 to 1972).

⁵³ See 655 S.W.2d at 25.

earnings, and the significance of productivity and growth.⁵⁴

C. *Alaska's Modification of the Beaulieu Approach*

Apparently recognizing the wisdom of *Kaczkowski*, Alaska recently modified its approach to wage increases. In *State v. Harris*,⁵⁵ the Alaska Supreme Court reaffirmed the *Beaulieu* "total offset" approach to inflation,⁵⁶ but limited the *Beaulieu* rationale to a refusal to recognize *speculative* productivity gains (as compared with specific productivity gains).⁵⁷ If increases are reasonably certain and not lacking in specificity, then such evidence is admissible.⁵⁸ The *Harris* opinion is an example of a court applying the "total offset" method, while also being careful to distinguish between inflation and other productivity factors (not attributable to inflation) that combine to constitute lost future earnings.⁵⁹ More importantly, the Alaska court indicated a willingness to strive for accuracy despite the inconvenience to judge and jury resulting from the introduction of expert testimony on predictable productivity factors not attributable to inflation.⁶⁰ Such a

⁵⁴ See Henderson, *supra* note 24, at 312.

⁵⁵ 662 P.2d 946 (Alaska 1983).

⁵⁶ See *id.* at 948 (citing *Beaulieu v. Elliot*, 434 P.2d 665 (Alaska 1969)). See notes 30-35 *supra* and accompanying text for a discussion of the *Beaulieu* application of the "total offset" method to account for inflation.

⁵⁷ See 662 P.2d at 947 (citing *Beaulieu v. Elliot*, 434 P.2d at 668). See note 35 *supra* and accompanying text for a discussion of the *Beaulieu* approach to productivity factors.

⁵⁸ 662 P.2d at 948. The Alaska method is now a restricted version of the Pennsylvania method. The Pennsylvania method allows expert testimony regarding speculative as well as automatic productivity gains. See *Kaczkowski v. Bolubasz*, 421 A.2d at 1037. The Alaska method restricts this expert testimony to a "consideration of automatic step increases keyed to length of service which are by their very nature certain and predictable." 662 P.2d at 947.

⁵⁹ See 662 P.2d at 947-48.

⁶⁰ *Cf. id.* at 948. *But cf. Paducah Area Pub. Library v. Terry*, 655 S.W.2d at 19, where the Kentucky court seems overly concerned with the efficiency of the "total offset" method without a similar commitment to accuracy:

Much can be said for the rule of the trial judge, and much may be said against it, but suffice it to say that such a rule goes far to eliminate the contest between litigants who have the resources to marshal mountains of expert testimony relative to money, its worth and the nebulous art of economic forecasting, all of which encumber the trial proceedings and confuse the deliberation of jurors.

careful delineation of factors comprising the total verdict is absent from the Kentucky Court of Appeals' decision in *Terry*.

D. *Kentucky's Unclear Application of the "Total Offset" Method*

Terry presents a question concerning how Kentucky courts are to apply the "total offset" method. Are Kentucky courts to follow the *Beaulieu* approach, looking only at inflation to the exclusion of all other relevant factors constituting wage gains, or should courts follow the *Harris* approach and consider other relevant wage gain factors? Considering the painstaking detail of recent Pennsylvania and Alaska decisions, Kentucky courts should also have guidelines for applying the "total offset" method. As recent case law makes clear, the "total offset" method is best applied not as an afterthought⁶¹ but as one component in a carefully controlled judicial proceeding,⁶² balancing the desire for accuracy with the need for efficiency and predictability.

In *Terry* the appellee properly proved a diminished earning capacity by expert testimony.⁶³ However, it is unclear whether such "proper proof" included productivity gains or simply calculated damages in present dollars⁶⁴ under the assumption that by not reducing the award to present worth the

Id. at 25.

⁶¹ See *State v. Harris*, 662 P.2d at 946; *Kaczkowski v. Bolubasz*, 421 A.2d at 1027. See also *Draisma v. United States*, 492 F. Supp. 1317 (W.D. Mich. 1980) (court found, through separate analysis of each figure, that inflation and discount rate were same); *Schnebly v. Baker*, 217 N.W.2d 708 (Iowa 1974) (court required evidence that inflation rate and discount rate would completely offset each other).

⁶² See, e.g., *Kaczkowski v. Bolubasz*, 421 A.2d at 1037.

⁶³ See 655 S.W.2d at 23. Under Kentucky law, "proper proof" means only that expert testimony be confined to average statistics about future earnings when, as in *Terry*, the injured party has yet to establish a prior work history. See *Adams v. Davis*, 578 S.W.2d 899 (Ky. Ct. App. 1979).

⁶⁴ Further ambiguity arises near the end of the opinion with the statement: "The jury may make a fair and reasonable award in present worth without introduction of evidence or instruction [on reduction to present worth or inflation]." 655 S.W.2d at 25. This suggests that all awards are in present dollars and based on present day figures with no allowance for future productivity.

plaintiff would be compensated for future inflation.⁶⁵ Failure to adequately explain how the "total offset" method has been applied leaves future Kentucky courts without guidance concerning productivity factors and future plaintiffs without the assurance that they will be fully and fairly compensated for lost or diminished earning power.⁶⁶

III. INADEQUACY OF THE DISCOUNT RATE IN OFFSETTING INFLATION AND OTHER PRODUCTIVITY FACTORS

Even those courts applying the "total offset" method as part of a carefully controlled judicial proceeding must ascertain that the "total offset" method is based on correct assumptions about the relationship of the discount rate to inflation and other productivity factors. Much has been written, both favorable⁶⁷ and critical,⁶⁸ about the utility of the "total offset" method. Often used by economists and attorneys, this simple method is helpful as long as the projected growth rate in earnings (due to inflation and other productivity factors) is

⁶⁵ This is the *Beaulieu* approach to inflation. See *Beaulieu v. Elliot*, 434 P.2d at 665. That approach was modified when the Alaska Supreme Court allowed careful consideration of both inflation and productivity as integral factors in computing lost future earnings. See *State v. Harris*, 662 P.2d at 948.

⁶⁶ One author has strongly emphasized the need for guidance in making accurate damage awards:

Determining loss of prospective earnings requires the use of statistics, mortality annuity tables, and the like. In this area of proof, jurors have proved equal to the task. It is easy to say that a slavish statistical exactitude is not to be sought. On the other hand, in measuring damages caused by the wrongful killing of a husband and father, for example, we must strive to be accurate. Any tools that will aid us in this regard should not be ignored. The jurors are not expected to appreciate all the intricacies of economic theory. But they live with inflation every day of the year, and are well able to grasp the basic concepts involved. We do not want merely a reasonable approximation of the plaintiff's losses. We want as accurate an approximation of that loss as possible!

S. SPEISER, *supra* note 14, at 741.

⁶⁷ See *Carlson, supra* note 32, at 628; *Fleming, Inflation and Tort Compensation*, 26 AM. JUR. COMP. L. 51 (1978); *Franz, Simplifying Future Lost Earnings*, TRIAL, Aug. 1977, at 34; *Sherman, Projection of Economic Loss: Inflation v. Present Value*, 14 CREIGHTON L. REV. 723 (1981); Note, *supra* note 11, at 105.

⁶⁸ See S. SPEISER, *supra* note 14, at ¶ 12:2; *Coyne, supra* note 32, at 25; *Formuzis & O'Donnell, Inflation and the Valuation of Future Economic Losses*, 38 MONT. L. REV. 297 (1977); *Maher, Estimating Future Earnings Loss: Misinterpretation and Faulty Logic*, TRIAL, Feb. 1979, at 39.

equal to the discount rate prevailing at the time of the appraisal.⁶⁹ However, when applied as a conclusion of law,⁷⁰ the court makes a finding of fact that has not been proven at trial.⁷¹

John Carlson has theorized about the relationship of wage gains to interest rates.⁷² Believing they cancel each other out, he argues that just as interest rates tend to rise when inflation climbs are expected, wages tend to rise along with gains in labor and capital productivity.⁷³ In addition, Carlson notes that wage gains are bid upward by the rate of inflation.⁷⁴ Thus, wage gains are comprised of two fundamental components—inflation and productivity—while interest rates are made up of anticipated inflation and the real rate of return on investments.⁷⁵ If productivity approximates the real rate of return on investments, then wage gains cancel out interest rates

⁶⁹ A leading expert in the field of damage recovery has shown that if earnings grow at seven percent and the prevailing rate of interest on safe investment (discount rate) is seven percent the result is that the compounding effects cancel out. In this situation, present value is simply calculated by multiplying the base earning figure by the number of productive years the individual might have enjoyed. S. SPEISER, *supra* note 14, at 721.

⁷⁰ See *Kaczkowski v. Bolubasz*, 421 A.2d 1027, 1038-39 (Pa. 1980) ("we find as a matter of law that future inflation shall be presumed equal to future interest rates with these factors offsetting"). In *Terry*, the court of appeals did not require adoption of the "total offset" method as a conclusion of law; rather, the court left application of this method to the trial court's discretion. *Paducah Area Pub. Library v. Terry*, 655 S.W.2d 19, 25 (Ky. Ct. App. 1983) ("The injection of such matters in the trial is . . . within the discretion of the trial court.").

⁷¹ In *Terry*, the trial court judge excluded all evidence of an appropriate discount rate because all evidence relative to "future inflation" was also excluded. 655 S.W.2d at 25. This was a blind application of the "total offset" method.

⁷² See Carlson, *supra* note 32, at 628. Carlson expands the proposition adhered to by the Pennsylvania and Alaska courts that interest rates and inflation rates cancel each other out. He argues that productivity factors, not merely inflation rates, cancel out the discount rate. See *id.* at 628-31.

⁷³ See *id.* at 630. See also note 31 *supra* for a discussion of the effect of inflationary expectations on interest rates.

⁷⁴ See Carlson, *supra* note 32, at 630.

⁷⁵ Real return on investment is that sum of capital actually produced over and above the rate of inflation. The nominal return on investment contains both a real rate and an inflation figure. This lends further credence to the argument that inflation alone does not totally offset the discount rate. Rather, returns on investment tend to exceed the rate of inflation by an amount equal to the real return on investment. See *id.* at 630. See generally I. FISHER, *supra* note 31.

since inflation is a constant.⁷⁶ To support his argument, Carlson shows that from 1950 to 1974 *average* increases in compensation per man hour⁷⁷ and *average* yields on taxable government bonds were roughly equivalent.⁷⁸

Economist Thomas Coyne has criticized Carlson's analysis by stating: "The approach is appealing in its simplicity but it cannot be supported empirically."⁷⁹ Coyne points out that averages only serve a worthwhile purpose where there is no specific data for the case being analyzed.⁸⁰ Averages are not helpful in wrongful death or injury cases since they always involve a specific individual.⁸¹

Another economist, John Maher, also rejects Carlson's measurement of the percentage change in hourly compensation by year-to-year calculations.⁸² Maher contends that future earnings changes cannot be estimated from an average of past year-to-year changes because that change might involve a drop in earnings, as well as a rise in the increase of earnings.⁸³

⁷⁶ Carlson, *supra* note 32, at 630 ("[I]f real returns on investment are at all close to productivity gains to labor, then interest rates reflect the current state of expectations about future wage gains.").

⁷⁷ *Id.* Carlson uses *average* "increases in compensation per man hour" even though the U.S. Bureau of Labor Statistics publishes wage increase statistics for no less than eleven different occupational areas, each of which has a different increase in compensation per man hour.

⁷⁸ *Id.* One obvious weakness in his calculations is the admitted fact that unanticipated inflation results in much higher wage growth without the accompanying growth in bond rates. Only when inflation has been fully anticipated have bond prices and wage increases been very close together. *Id.*

⁷⁹ See Coyne, *supra* note 32, at 26. He lists five areas where Carlson's data is inadequate: (1) the 24-year time span, used by Carlson in his calculations, is a relatively short time for many, if not most, wrongful death or injury cases; (2) the time period he uses includes a disproportionately large number of recessionary months; (3) the 1.6% difference in averages of Carlson's two rates is significant when applied in present value analysis over a long period of time (Coyne calculated average annual compensation per man hour at 5.812% and an average bond yield of 4.2512%); (4) high standard deviations for each series of data means large dispersions from the mean in any given year; and (5) the two rates and their accompanying standard deviations cause him to believe the discount rate does not exactly offset projected wage increases for the time span used. "Quite simply, his assumptions cannot be supported by his data." *Id.*

⁸⁰ See *id.*

⁸¹ *Id.* at 27.

⁸² See Maher, *supra* note 68, at 39.

⁸³ See *id.* at 40. Maher points out that year-to-year percentage changes between

Instead, Maher argues that "[t]he commonly accepted way of estimating future earnings is the fitting of a trend line to the observed data."⁸⁴ Using a hypothetical case, Maher compounds the base earnings⁸⁵ and then reduces them to present value employing a 2.68 % discount rate (the yield on government securities prevailing in 1952). The result is the amount a "clairvoyant" economist would have reached.⁸⁶ As a result, Maher finds that the "cancellation" economist⁸⁷ would have undercompensated the plaintiff by 18% on a twenty-five year award.⁸⁸ From this, he concludes that "cancellation of the rate of advance in earnings by the discount rate gives estimates that are low and with errors that have usually been substantially larger than those of the economist who separately determines the rate of earnings increase."⁸⁹

IV. ALTERNATIVES

Since the "total offset" method has been seriously attacked as not properly reflecting inflation and productivity increases, a viable alternative is needed. Several alternatives have been outlined above.⁹⁰ Others are beyond the scope of this Comment.⁹¹ Some courts choose the "total offset" method

0, 10 and 20 would average out to a 10% change regardless of whether the figures were ascending or descending. *See id.*

⁸⁴ *Id.* Maher's trend line reveals three distinct time periods: from 1952 to 1965 the average annual increase was 3.6%; from 1965 to 1971, 5.4%; and from 1971 to 1977, 7.8%. *Id.* at 39.

⁸⁵ *See id.* Maher compounds earnings at 3.4% to 1965; at 5.4% to 1971; and 7.8% to 1977.

⁸⁶ *Id.* Maher also figures the earnings that a "typical" economist might have estimated by projecting a five percent annual increase in earnings across the board. *See id.*

⁸⁷ *Id.* This is Maher's name for Carlson and other economists who advocate that the discount rate cancels the rate of earnings increase.

⁸⁸ *Id.* The "typical" economist would have over compensated the plaintiff by 10.6%.

⁸⁹ *Id.* at 41.

⁹⁰ See notes 72-89 *supra* for a discussion of these alternative methods.

⁹¹ Compare Elliget, *The Periodic Payment of Judgments*, 46 INS. COUNSEL J. 130 (1979) with Henderson, *Periodic Payments of Bodily Injury Awards*, 66 A.B.A. J. 734 (1980). Both authors are responding to the recent draft of the UNIF. PERIODIC PAYMENT OF JUDGMENT ACT, 14 U.L.A. 20 (Supp. 1983)).

because of a high priority on efficiency.⁹² Yet, as one economist states, “[i]f simplification in courtroom presentations is desired, the highest degree achievable may be in getting a stipulated methodology, not an equalization of interest rates.”⁹³

Rejection of the “total offset” method as a general rule in favor of separate determinations of average annual wage increases and discount rates offers the most accurate, predictable and efficient methodology.⁹⁴ Economists Formuzis and O’Donnell have developed such a procedure,⁹⁵ which is similar to the offset approach, yet rests on two radically different, more realistic assumptions. Those assumptions are: (1) the appropriate discount rate is the average yield on U.S. government securities of up to five years maturity,⁹⁶ and (2) the trend in wage changes is 1.4% higher than this discount rate.⁹⁷ The authors calculate this 1.4% figure by using regression analysis to statistically establish the differential between wage growth and interest rates.⁹⁸ Using this analysis, the court

⁹² See, e.g., *State v. Harris*, 662 P.2d 946 (Alaska 1983).

⁹³ See *Coyne*, *supra* note 32, at 29.

⁹⁴ See text accompanying note 11 *supra* for a discussion of the policy objectives in calculating damages.

⁹⁵ See Formuzis & O’Donnell, *supra* note 68, at 297. The approach they have utilized has been named “regression analysis.” See *id.* at 302.

⁹⁶ *Id.* Shorter term securities necessitate the periodic sale of maturing securities. This protects the plaintiff or survivors from the ravages of inflation to the extent that inflation and higher yields are correlated. *Id.*

⁹⁷ *Id.* Formuzis and O’Donnell believe that “forecasting inflation by projecting the historical rate of inflation is unacceptable because it is unreliable and speculative.” *Id.* at 299. They also reject Carlson’s idea that wage growth and interest rates change equally in the presence of inflation. Formuzis and O’Donnell suggest that “the rate of wage growth and the rate of interest do not change equally in the presence of inflation. They do, however, change in a predictable fashion.” *Id.*

⁹⁸ See *id.* Accepting the “Fisher principal” that wage increases and interest rates co-vary, the authors argue that wage growth is consistently greater than interest rates on short term investments by 1.4%. *Id.* at 300, 302. The difference is due primarily to the relationship between the rate of increase in labor productivity and the rate of return on capital (i.e., productivity of capital) respectively. *Id.* at 300. For further support of this idea, see *Coyne*, *supra* note 32, at 26, where the author points out that Carlson, in his calculations, found a 1.6% difference in averages between the two rates. The variance between Carlson’s number (1.6%) and Formuzis and O’Donnell’s (1.4%) can be accounted for by noting that Carlson uses yearly averages while Formuzis and O’Donnell use three-year moving averages.

simply calculates the rate of discount⁹⁹ and then sets the rate of wage growth at 1.4% above the discount rate.¹⁰⁰ This calculation corrects the downward bias of the "total offset" method noted above.¹⁰¹

By correcting for the downward bias, awards are more accurate. Judges and juries are also given an efficient way in which to compensate for all productivity factors without extensive expert testimony.¹⁰² Perhaps most importantly,

⁹⁹ Formuzis & O'Donnell, *supra* note 31, at 305 ("The rate of the discount should be calculated from riskless government securities with an average maturity of 3 years.").

¹⁰⁰ For example, assume that the decedent in a wrongful death action is determined to have a \$40,000 per year earning capacity with a three year estimated life span. The discount rate, based on the rate of government securities, is seven percent. Under the "total offset" method, wage growth is presumed to equal the discount rate and, in effect, cancel each other out. The damage award would be calculated as follows:

$$\$40,000 \times 3 \text{ years} = \$120,000$$

In comparison, under the Formuzis and O'Donnell approach, wage growth would be set at 1.4% above the discount rate. The damage award would be calculated for each year according to the following formula:

$$\begin{array}{rcccl} & \text{Future value} & \text{Present value} & & \\ & \text{\$40,000} \times \text{factor for that} & \times \text{factor for that} & = & \text{Damages awarded} \\ & \text{year at 8.4\%} & \text{year at 7.0\%} & & \text{for that year} \end{array}$$

This formula yields the following result:

$$\begin{array}{l} \text{year 1 } \$40,000 \times (1.084)^3 \times \frac{1}{(1.07)^3} = \$ 41,550 \\ \text{year 2 } \$40,000 \times (1.084)^2 \times \frac{1}{(1.07)^2} = \quad 41,031 \\ \text{year 3 } \$40,000 \times (1.084)^1 \times \frac{1}{(1.07)^1} = \quad 40,541 \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \underline{\underline{\$123,122}} \end{array}$$

Over the three year span, the Formuzis and O'Donnell approach gives the plaintiff \$3,122 or 2.6% more than the award determined under the "total offset" method.

¹⁰¹ See text accompanying notes 88-89 *supra* for a discussion of the downward bias of the "total offset" method.

¹⁰² It would be possible for a court to increase accuracy by using regression analysis to calculate a specific differential for a particular occupation using the statistics published by the United States Department of Labor, Bureau of Labor Statistics. However, in most cases, the 1.4% differential is sufficient to fairly compensate the plaintiff. See notes 52 & 77 *supra* for discussions of labor statistics and occupational wage increases.

Formuzis and O'Donnell provide a predictable methodology which removes speculative variables from projecting inflation and other productivity factors, leading to more settlements and fewer court battles.

CONCLUSION

In the early 1970s, inflation came to be an accepted part of damage award verdicts for lost future earnings. More recently, courts have begun accounting for inflation and productivity factors when estimating future wages. Yet, deciding how to include these somewhat unpredictable variables in a manner which is accurate and predictable while still efficient has been a challenge for the courts. Kentucky's application of the "total offset" method was a response to that challenge. The Kentucky Court of Appeals succeeded in interjecting new considerations into the damage award process; however, the court failed to adequately set out all the relevant factors in the "total offset" approach. Recent applications of the offset method by other courts more experienced in its use show that full and fair compensation requires Kentucky to consider other productivity factors along with inflation in calculating awards for lost future earnings.

Accepting the premise of the "total offset" approach—that awards can be efficient and accurate—another technique using regression analysis is posited. By setting the wage increases at 1.4% higher than the discount rate, courts can simultaneously correct for the downward bias of the cancellation method while also accounting for both inflation and productivity gains—an efficient, accurate calculation that removes from the jury the often unpredictable task of calculating future wage earnings by expert testimony.

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