The Effect of the Mandated Discount Rate on the Value of Wrongful Death Awards in Georgia

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and
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This Article examines Georgia tort law regarding wrongful death. Tort has been described as the body of law that deals with "compensable wrongs that do not arise from breach of contract and cannot be remedied by an induction against future inference."[1]   When a tort has been proven, two types of damages can be incurred—compensatory and punitive. Compensatory damages, as the phrase implies, compensate the plaintiff for damages suffered at the hands of the defendant. The goal of compensatory awards is to compensate and deter but not to punish the wrongdoer. The theories behind compensatory damages are that deterrence encourages potential tortfeasors to use optimal care in avoiding negligent behavior and that the victim should be able to recover from the tortfeasor for all the actual harm caused by the tort. Punitive damages, on the other hand, are those damages above and beyond compensatory damages, and they serve to punish.

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    1.   ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 288 (Addison-Wesley Publishing 3d ed. 2000).

Georgia tort law specifically states that punitive damages are ordinarily to be assessed by jurors.[2] But the compensatory damages calculation for wrongful death under Georgia law may not be precisely accurate in an actual award although the calculation may be accurate in a probabilistic expected value sense. Thus, the Georgia mandatory 5% discount rate may overestimate compensatory damages, in effect making part of them punitive. "The appropriate discount rate would in truth replicate the lost economic income stream with certainty and exactness."[3]

An overestimation of compensatory damages contradicts the purpose of the previous statute, which states that punitive damages are the responsibility of the jurors in the tort actions in question.[4] The defendants in wrongful death cases may be overcharged when found liable under Georgia tort law for wrongful death. This Article outlines the process by which compensatory damages for wrongful death are calculated under Georgia law and gives an example of how much defendants may be overpaying in an actual award but not necessarily in a probabilistic expected value sense.

I.   TORT LAW IN GEORGIA REGARDING WRONGFUL DEATH

An economist computes the economic loss for a person in cases of wrongful death or personal injury according to the human capital (or lost economic output) conceptual model dominating actual litigation. The loss is the value of the person's lost future productivity, including both market and nonmarket factors. Market or market-work loss is the dollar value of the person's lost future earnings. Nonmarket or household-work loss is the dollar value of present and future output that would have been produced in the home, such as child care, cooking, financial planning and budgeting, home repairs, and shopping.

Georgia is unusual in its measure of damages in wrongful death actions because it relies on the value of the decedent's life to the deceased individual. The measure of damages in a wrongful death or personal injury action is established by statute. The Official Code of Georgia Annotated ("O.C.G.A."), states, "'Full value of the life of the decedent, as shown by the evidence' means the full value of the life of

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2.   O.C.G.A. § 51-12-12 (2000).
3.   David R. Kamerschen, *Damage Calibrations Under the Federal Tort Claims Act*, 25 GA. ST. L.J. 101 (1988).
4.   O.C.G.A. § 51-12-12.

the decedent without deducting for any of the necessary or personal expenses of the decedent had he lived."[5] Thus, Georgia is a full-value state that does not require that personal consumption and personal taxes be deducted from before-tax basic income in calculating wrongful death and personal injury damages. Georgia's methodology involves five elements: (1) base-year, first-year, or initial market earnings (including fringe benefits); (2) income growth rate; (3) worklife expectancy; (4) nonmarket productivity loss; and (5) discount rate.

In a wrongful death or personal injury case, the projected base-year income includes the person's regular compensation including salary, bonuses, and commissions; second-job compensation; and fringe benefits such as health insurance and retirement. Income growth recognizes that base-year income grows over time due to overall inflation, comparative and economy-wide growth in productivity, and normal life-cycle career progression because of experience and seniority with due allowance for periods of unemployment. Future earnings depend not only on income level and growth, but also on the probable length of time a person works, known as the worklife expectancy. Nonmarket losses are computed by estimating the total hours that would have been spent in uncompensated nonmarket activities over the person's lifetime. Because future dollars are less valuable than current dollars due to such factors as uncertainty of payment and the value of money, a discount rate is used to express future-year economic losses in their present value.

To reflect the time value of money, all future assets are reduced to obtain their present value or their value in today's dollars. The value of any asset is the discounted present value of its future income stream, or its future net cash flow. Put simply, a dollar received today is more valuable than a dollar received in the future. First, because inflation reduces the purchasing power of future dollars relative to current dollars, future dollars are less valuable. Second, if a person has a dollar today, it is a certainty, whereas he incurs some risk on any promise of a future dollar. The uncertainty increases as the date of receipt advances further in the future. Third, future dollars involve lost opportunity costs on foregone investments. If a person has a dollar today versus some future date, he can take advantage of any investments or other opportunities available during the period. Thus, the most important reason for preferring a dollar today is that a person can invest it, earn compound interest, and have more than the dollar received at some future date.

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5. *Id.* § 51-4-1.

Waiting to receive a dollar until the future carries an opportunity cost equal to the return on the foregone investment. The further in the future a sum of money is to be paid or received, the lower is its present value; and the higher the discount rate used, the lower is the present value of any future sum of money. For example, a dollar to be received ten years from now is worth 61 cents if the discount rate is 5%, and a dollar to be received five years from now is worth 78 cents at the same rate. But the dollar to be received ten years from now is worth only 39 cents if the discount rate is 10%, and the dollar received five years from now is worth only 62 cents. In other words, to have a dollar ten years from now, 61 cents has to be invested today if the rate of interest to be earned is 5%, but if the interest rate is 10%, only 39 cents has to be invested today to grow to one dollar.

The present discounted value ("PDV") of a future dollar is an amount received immediately that is equivalent to the dollar received in future years with due allowance for future inflation and discounting. That is, the PDV of a future dollar is the amount a person would have to invest today to receive the future dollar, assuming a risk-free, inflation-adjusted rate of return on the investment.

Under Georgia law, punitive damages present a question to be determined by the enlightened conscience of the jury.[6] There is no strict methodology to the calculation of punitive damages. Case law, among other things, can serve to guide a jury, but in the end, Georgia law relies on the trier of fact to make the decision.

Compensatory damages serve to reimburse the plaintiff for what he or she has lost due to the action or inaction of the defendant. In wrongful death, compensatory damages reimburse the plaintiff for the economic value stream, including fringe benefits and uncompensated household services, lost when the decedent was killed. In particular the jury must find the discounted present value of the decedent's lost future economic value while taking into account his or her worklife expectancy.

Calculating the discounted present value of a decedent's lost future economic value involves a fairly strict methodology but, nevertheless, is an approximation. "While any calibration will be an approximation, and no one wishes, as someone once said, 'delusive exactness,' the goal is 'tolerable accuracy.'"[7] Georgia law, however, may upset this "tolerable accuracy": "It shall be lawful for the trier of fact, in determining the present value of any future earnings, annuity, or amounts, to reduce the same to the present value upon the basis of interest calculated at 5

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6. *See id.* §§ 51-12-5,-6.
7. Kamerschen, *supra* note 3, at 103.

percent per annum."[8] By mandating the discount rate used to calculate the discounted present value instead of having the discount rate established by market conditions, this statute may alter the accuracy of the calculations, unless of course, the pegged discount rate is by chance the same as the actual market discount rate.

A discount rate is a rate of interest used to assess the present value of cash flows in the future. For example, assume that three years from now a person expects to receive a check for $100,000. If she wanted to find out how much that amount of money is worth today, she would have to figure out the present value of that $100,000. To calculate this value she would use the discounted present value formula. Assume:

$\$$ = dollar value of cash flow
d = discount rate
t   = length of time between the present and date payment is received
DPV = discounted present value

Assuming a discount rate = d of 5% or .05,
    DPV= $\$/(1+ d)^t$
    DPV= $\$100,000/(1+.05)^3$
    DPV= $86,383.76

The present value of the $100,000 check three years in the future at a 5% discount rate is $86,383.76.

This formula can also be used to illustrate the inverse relationship between the discount rate and present value that is at the root of the mandatory 5% discount rate problem. An artificially low discount rate would overstate the present value of future cash flows. Returning to the previous example, assume the correct discount rate is 7%, but the triers of fact are required to use the 5% discount rate. Then

    DPV= $\$/(1+d)^t$
    DPV= $\$100,000/(1+.07)^3$
    DPV= $81,629.79

DPV at discount rate 5% - DPV discount rate 7% = overpayment
    $86,383.76 - $81,629.79 = $4,753.97

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8. O.C.G.A. § 51-12-13 (2000).

Since DPV at a 7% discount rate is $81,629.79, the 5% discount rate overestimates the DPV by $4,753.97.

A. How Compensatory Damages Are Calculated

Compensatory damages in a wrongful death action are the present value of the decedent's future economic value. So one brings back future cash flows to the present with the designated discount rate. Georgia is one of the few states that do not deduct personal expenses and taxes from a decedent's future income.[9] This difference makes the calculation of discounted present value easier. The formula used to calculate a decedent's discounted future earnings is merely an extension of the discounted present value formula illustrated earlier assuming, for convenience, no allowance for lost fringe benefits or lost future household services. The formula is as follows:

Discounted Present Value (DPV) = $\$[(1+g)^t/(1+d)^t]$.
  $\$$ = initial starting earnings
  t = time in terms of worklife expectancy
  g = growth rate of earnings
  d = nominal market interest or discount rate

Four variables are used to calculate the DPV of a decedent's future cash inflows. They are initial starting earnings ($\$$), the time the person would have been employed or worklife expectancy (t), the growth rate of earnings over the decedent's worklife expectancy (g), and the nominal market interest rate or discount rate (d). These variables, whether based on demographic data or specific knowledge about the decedent, are used to calculate discounted present value of future income.

Among the variables involved, initial starting earnings ($\$$) is the variable that tells how much the decedent was earning at the time of death. If specific knowledge of how much the decedent was earning when he or she died is not available, an estimate can be derived using demographic data such as education, race, and gender. After initial starting earnings are estimated, one must calculate how these earnings would have grown over the decedent's worklife expectancy. Earnings would have grown over time for three reasons. First, the decedent's earnings would have nominal increases because of changes in the price level or inflation. The Consumer Price Index ("CPI-U") is probably the most common guide for these nominal adjustments. Second, real

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9. Kamerschen, *supra* note 3, at 102.

earnings adjustments account for increases in productivity that the decedent would have experienced over time. Third, adjustment to initial earnings is due to temporal adjustments based on the decedent's seniority or tenure on the job independent of any increased productivity. In estimating these factors, one can use the decedent's actual work experience increases in compensation. If that information is not available or is misleading for any reason, one can use a proxy variable—either the increases in average compensation in the closest industry surrogate available or the average compensation for the whole economy.

This study assumes that the decedent would have retired at the age of sixty-five. The State of Georgia has provided for the use of four mortality tables. In 1970, House Bill No. 1012 allowed for the use of the Commissioners' 1958 Standard Ordinary Mortality Table and the Annuity Mortality Table for 1949.[10] The Carlisle Mortality Table and the American Experience Mortality Tables are also in use in Georgia.[11]

The last variable in the discounted present value equation is the applicable discount rate. As recognized in *Bunch v. McLeskey,*[12] at one time, the General Assembly specified that 7% was the discount rate to be used; however, the present rate is 5%.[13] This rate may overcompensate plaintiffs because it is too low as a result of the inverse correlation between discount rate and discounted present value. Economists agree that the discount rate should have a high degree of safety of principal and income with a low degree of default risk. In *O'Conner v. United States,*[14] the appropriate discount rate was determined to be one "which people without financial skill could safely secure on their investments."[15] A common surrogate for the discount rate is the federal government yield on its United States Treasury securities. The following figure and table use the returns on a United States ten-year Treasury note and compare it to the mandatory 5% discount rate of Georgia during the years 1970 through 1997.

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10. § 1, 1970 Stat. at 168-69.
11. David R. Kamerschen & Robert W. Kamerschen, *A Combined Mortality Table for Georgia,* 20 THE VERDICT 3, 25-26, 64 (1995).
12. 173 Ga. 545, 161 S.E. 128 (1931).
13. *Id.* at 549, 161 S.E. at 131. *See* O.C.G.A. § 51-12-13.
14. 269 F.2d 579 (2d Cir. 1959).
15. *Id.* at 585.

TABLE 1
COMPARISON OF MANDATED DISCOUNT RATE WITH U.S.
10-YEAR T-NOTE, 1970-1997

(1)	(2)	(3)	(4)=(3)-(2)
Year	Mandated Discount Rate	U.S. 10-year T-note	Difference
1970	5%	7.35%	2.35%
1971	5%	6.16%	1.16%
1972	5%	6.21%	1.21%
1973	5%	6.84%	1.84%
1974	5%	7.56%	2.56%
1975	5%	7.99%	2.99%
1976	5%	7.61%	2.61%
1977	5%	7.42%	2.42%
1978	5%	8.41%	3.41%
1979	5%	9.44%	4.44%
1980	5%	11.46%	6.46%
1981	5%	13.91%	8.91%
1982	5%	13.00%	8.00%
1983	5%	11.10%	6.10%
1984	5%	12.44%	7.44%
1985	5%	10.62%	5.62%
1986	5%	7.68%	2.68%
1987	5%	8.39%	3.39%
1988	5%	8.85%	3.85%
1989	5%	8.49%	3.49%
1990	5%	8.55%	3.55%
1991	5%	7.86%	2.86%
1992	5%	7.01%	2.01%
1993	5%	5.87%	0.87%
1994	5%	7.09%	2.09%
1995	5%	6.57%	1.57%
1996	5%	6.44%	1.44%
1997	5%	6.35%	1.35%
Average 1970-1997	5%	8.45%	3.45%

Figure 1
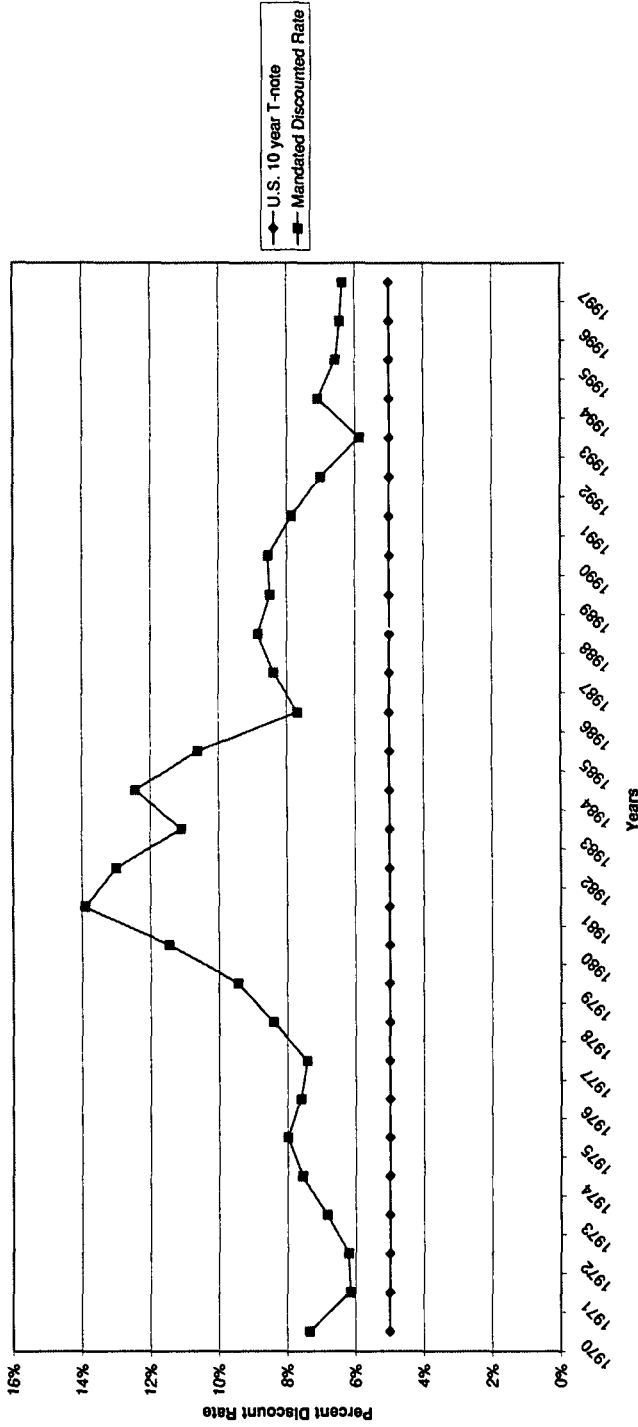
Source: Economic Report of the President (Washington, D.C.: U.S. Government Printing Office, 1999) Table B-73, p. 412.

Figure 1 and Table 1 show the difference between the United States ten-year Treasury or T-note rates and the 5% Georgia discount rate during the 28 years from 1970 to 1997.[16] There is not one year in which the 5% discount rate was higher than the T-note rate. The closest the mandatory discount rate came to mirroring the United States 10-year T-note was in 1993, the latter fell to 5.87%, resulting in a 0.87% disparity from the mandated rate. In contrast, the largest gap between the two rates came in 1981, when the T-note rate was almost 13.91%. This gap resulted in an 8.91% disparity. The average T-note rate over the years 1970 to 1997 was 8.45%, which resulted in a 3.45% disparity.

B. An Example of Overpayment of Compensatory Damages

This section provides an example that puts a dollar amount on the potential overpayment effect of the mandatory 5% discount rate. It calculates what the damage award would be for a hypothetical person under the mandatory 5% discount rate as compared to actual market rates. The worklife expectancy is calculated assuming that the average plaintiff in a wrongful death action is the same as the median age of the population of Gwinnett County, 30.5 years.[17] Assuming a retirement age of 65, the average worklife expectancy in Gwinnett County is 34.5 years. For convenience, this example assumes that the worklife expectancy is exactly 35 years and that there is no growth in earnings for the base-year earnings.

Using these values for the DPV formula any overpayment is estimated. Assume that the hypothetical, deceased person would have earned $58,163.55 per year with no growth in earnings per year for the next 35 years. This calculation produces at a 5% discount rate a DPV of exactly $1 million. Overpayment is then calculated for the individual years 1981 and 1993, as these are the high or low differential years, and for the average over all years from 1970 through 1997. The deviation between the imposed discount rate and the United States discount rate was highest in 1981 and lowest in 1993.

Using the average historical United States T-note rates between 1970 and 1997 of 8.45% as the discount rate each year for 35 years on the same $58,163.55 income per year, the DPV is $702,839. Thus, there is an average overpayment because of the mandated 5% discount rate of $297,161 on every $1 million discounted present value award for

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16. O.C.G.A. § 51-12-13 (2000); ECONOMIC REPORT OF THE PRESIDENT (1999) Table B-73, 412.

17. Susan R. Boatright, Center for Agribusiness and Economic Development, and Douglas C. Bachtel, The College of Family and Consumer Sciences, THE GEORGIA COUNTY GUIDE, 19th ed. 122 (2000).

wrongful death or personal injury in Georgia. If one uses the highest historical discount rate of 13.91% as the discount rate each year for 35 years on the same $58,163.55 income per year, one finds a DPV of $471,314 and an overpayment of $528,686 per million dollars awarded for wrongful death because of the mandated 5% discount rate. If one uses the lowest historical discount rate of 5.87% as the discount rate each year for 35 years on the same $58,163.55 income per year, one finds a DPV of $906,551 and an overpayment of $93,449 per million dollars awarded for wrongful death because of the mandated 5% discount rate. Stated differently, the discounted present value formula using the mandated 5% discount rate resulted, *ceteris paribus*, in a 42.3% overpayment per wrongful death or personal injury award compared with using the average 8.45% historical discount rate as the actual discount rate over a 35-year period (=$1,000,000 ÷ $702,839). Using the worst year (1981) as the discount rate each year over a 35-year period, the overpayment percentage was 112.2% (=$1,000,000 ÷ $471,314), and using best year (1993) the overpayment percentage over a 35-year period was 10.3% (=$1,000,000 ÷ $906,551).

II. CONCLUSION

Compensation requires that the parties harmed by an illegal act be made whole by recovery of the monetary value of the damages suffered. This paper illustrates the potential effect of O.C.G.A. section 51-12-13 on the calculation of compensatory damages in Georgia. After taking into account the effect of the inverse relationship between discounted present value and the discount rate, this Article shows that because Georgia lawmakers mandate the discount rate rather than using a market rate such as United States Treasury securities, overpayment may result.[18] This result does not necessarily mean that the mandated 5% rule is inefficient or unfair. The reasoning behind O.C.G.A. section 51-12-13 may be to curb court costs. Court time and resources could be spent with varying opinions of what the appropriate discount rate should be. A rule versus a discretionary approach can increase litigation efficiency and reduce uncertainty at the cost of flexibility. Neither side is required to invest resources in determining the appropriate discount rate under the Georgia statute, which encourages out-of-court settlements. In addition, defendants are on notice that if they are found guilty they will be paying a discounted present value based on the 5% discount rate.

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18. The same argument can be made about not deducting consumption or living expenses and taxes from a wrongful damage award in Georgia.

Statisticians talk about expected value, which is a weighted sum of the dollar value of the damages, when the weights are the expected probabilities or relative frequency of the value's occurrence.[19] Suppose that plaintiffs in a wrongful death case win only 50% of the time. Suppose also the true damages for a plaintiff are $1 million in lost earnings. If the probability is 50% that the plaintiff will get $1 million and 50% that the plaintiff will recover no damages, the expected value or average payoff from a lawsuit is $500,000. Therefore, if the sponsors of O.C.G.A. section 51-12-13 believed that the probability is not 100% that a truly wronged plaintiff will prevail—and it most certainly is not 100%—a legitimate case can be made for mandating a discount rate that overcompensates plaintiffs when they do win. For instance, if the probability of winning the actual damages is roughly 71%, an overcompensation of about 40% provides an expected value exactly equal to the actual damages (as $1,400,000 x .714286 = $1,000,000.).[20]

Legislators may wish to reexamine O.C.G.A. section 51-12-13 to determine if the reduced court costs and uncertainty provide sufficient value to the state to justify the potential for overpayment, and under-payment, of discounted present value awards to decedents in wrongful death cases. On the other hand, as indicated, reasonable arguments exist for keeping the status quo.

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19. Economists aver that people choose the option that provides the highest expected utility or probability-weighted average of the utility from the outcomes in the various states of nature. Because most people are risk averse, they will choose a riskier option only if its expected value is substantially higher than that of a less risky option. Only risk-neutral people choose whatever option has the highest rate of return, as they do not care about risk.

20. This same argument can be and has been made about treble damages awards in antitrust violations.