

NOTES AND COMMUNICATIONS

Choosing a Discount Rate for Future Losses in Wrongful Death and Injury Cases

David D. Jones

There is an on-going discussion of the appropriate discount rate in determining the present value of future losses in wrongful death and injury cases (Bryan and Linke, 1988 and Lane and Glennon, 1988). But the net discount rate (roughly, interest less expected loss growth) is only one element of the calculation to reduce future losses to present value. The appropriate discount rate depends upon what is being discounted. For example, the typical 'humped' income stream clearly demonstrates that earnings can be expected to increase with age for a significant portion of the life cycle. (See Miller, 1965 and Levy, 1988.) Using such an age-income distribution as the earnings stream to be discounted in a wrongful death or injury case, a discount rate which incorporated a full measure of historic productivity growth would be too low, leading to an estimate of lost earnings that is too high.

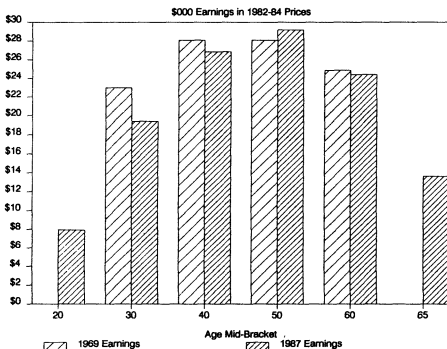
A simple graphic may clarify this point. It is analogous to the Bryan and Linke (1988) [B-L] figure based on earnings reports for 1978 and 1979. However it shows a wider period: from 1969 to 1987. Unlike the B-L figure, the data discussed here have been transformed to constant 1982-84 prices by dividing 1969 and 1987 earnings by the Consumer Price Index for those years.

The figure "Distribution of Male Earnings by Age" is based on the most recent annual *Consumer Population Report* [CPR] (U.S. Department of Commerce, 1989b) and a 1970 census Subject Report (U.S. Department of Commerce, 1973). The age brackets differ in these two publications. For 1987 they are for ages 18-24, 25-34, 35-44, 45-54, 55-64, and 65 and over. A five-year interval is also available for the intermediate age groups. However, because the 1969 data set has even broader age brackets (25-34, 35-54, and 55-64), these were not employed.

Note that in real terms the 1987 age-earnings distribution is generally below that for 1969. After adjusting for inflation, men in 1987 are earning less in most age brackets from 25 through 64 than they were in 1969.

It is possible that the lack of information about the youngest and oldest workers and the broad age bracket (35-54) in the 1969 data set has led to a

Distribution of Male Earnings by Age



Source: U.S. Department of Commerce

distortion in the comparison of 1969 earnings to those in 1987. Data from several alternative sources imply that this is not so. First, 1969 data were gathered from a census Subject Report rather than a CPR comparable to the 1987 data source because earlier CPRs reported only *income*, not *earnings*. (In death and injury cases one is normally concerned with potential earnings rather than income, since the difference, unearned income, is likely to be unaffected by the wrongful act.) But when real income for 1969 (U.S. Department of Commerce, 1970) and 1987 are compared, the results are similar to those presented here. The 1969 income data have age groupings like those in 1987. Recall that dissimilar age groupings were a concern with the earnings data. Thus, the finding of similar results for income and earnings reinforces the earlier observation. Second, data on average earnings of year-round full-time workers confirm these results. According to the U.S. Department of Commerce (1988, p.5), "The 1987 median earnings of men, \$26,010, was at a level comparable to that of 1970 in real terms, and below the peak earnings figure of \$28,610 in 1973." Finally, monthly data on real wages indicate that they have decreased on average for more than a decade and a half (U.S. Department of Commerce, 1989a). In general, all of these alternative

data sources reinforce the observation that 1987 real earnings over the course of the life cycle are no greater than that in 1969.

It is indisputable that on average the earnings of young men in 1969 rose in the next 18 years as they matured. This was expected, given what is known about the life cycle of income. However, the graphic also clarifies that annual earnings of males in various age brackets have, at best, only barely beaten inflation in the same period. To the extent that real growth has occurred since 1969, that fact is captured in the humped age-earnings curve.

If in a wrongful death or injury case an expert were to postulate such an age-earnings curve for the plaintiff and then employ a discount rate which included a significant amount of productivity-related growth over and above inflation, there would be a potentially significant over-estimate of future income. That is, future income losses would be discounted too little. This combination of age-specific income and low discount rate which incorporates productivity growth is fairly common. It would be better to use a single entry-level income in conjunction with a productivity-inclusive discount rate, or a life-cycle age-earnings distribution with a higher discount rate representing the nominal interest-inflation spread. Given the observation that earnings growth varies with age (Lane and Glennon, 1988), the latter approach is likely to yield more accurate results.

References

1. Bryan, William R. and Charles M. Linke, 1988, The Estimation of the Age/Earnings Profiles in Wrongful Death and Injury Cases: Comment, *Journal of Risk and Insurance*, 55: 168-73.
2. Lane, Julia and Dennis Glennon, 1988, The Estimation of the Age/Earnings Profiles in Wrongful Death and Injury Cases: Author's Reply, *Journal of Risk and Insurance*, 55: 174-79.
3. Levy, Frank, 1988, *Dollars and Dreams: The Changing American Income Distribution* (New York, NY: W. W. Norton, Inc.).
4. Miller, Herman P., 1965, Lifetime Income and Economic Growth, *The American Economic Review*, LX: 834-44.
5. U. S. Department of Commerce, 1989a, Bureau of Economic Analysis, *Business Conditions Digest* (Washington, D.C.: U.S. Government Printing Office).
6. _____, 1989b, Bureau of the Census, Consumer Population Reports, *Consumer Income*, Series P-60, No. 162, Money Income of Households, Families, and Persons in the United States: 1987, (Washington, D.C.: U.S. Government Printing Office).
7. _____, 1988, Bureau of the Census, Consumer Population Reports, *Consumer Income*, Series P-60, No. 161, "Money Income and Poverty Status in the United States: 1987," (Washington, D.C.: U.S. Government Printing Office).

8. _____, 1973, Bureau of the Census, 1970 Census of Population, *Earnings by Occupation and Education*, PC(2)-8B, (Washington, D.C.: U.S. Government Printing Office).
9. _____, 1970, Bureau of the Census, Consumer Population Reports, *Consumer Income*, Series P-60, No. 75, Income in 1969 of Families and Persons in the United States, (Washington, D.C.: U.S. Government Printing Office).

Copyright of Journal of Risk & Insurance is the property of Blackwell Publishing Limited and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.