Accounting for Work Time Differences in Personal Injury Litigation

Introduction

In some personal injury circumstances, a worker is injured badly enough that continuation in a prior employment is no longer possible, but alternative careers in the labor market remain possible on a full-time basis. Ordinarily, there is no significant difference in the expected workweek, so the time required to maintain employment in each career is reasonably similar. In some instances, however, there are significant differences in the amount of time required by the pre and postinjury careers. Some accounting must be made of such differences, but very little attention has been paid in the literature of forensic economics about how that accounting should be made. This paper introduces some of the issues that should be considered in such a comparison and will hopefully stimulate further research on some of those issues.

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The Initial Discussion that Led to This Paper

At the 2003 meetings of the Western Economic Association in July 2003, Barry Ben-Zion explained in a lunch discussion that he adjusts the postearning capacity of a worker in terms of the number of hours worked before the injury. Anthony Riccardi stated that this was inappropriate because the number of hours a worker was required to work was determined by the nature of the job, not by tradeoffs in the number of hours worked on the job. It was an implicit assumption in this discussion that the injury itself had not caused any change in the number of hours the injured person was able to work. If an injury changed the number of hours a worker was capable of working, that fact would have implications that are not considered in this paper. Thus, if an injured worker worked 1700 hours per year, Ben-Zion said that would adjust the injured worker’s postinjury earning capacity so that it was based on 1700 hours even if the worker worked more hours than that after the injury. Riccardi would not have made any adjustments on this basis. This author concluded that Ben-Zion and Riccardi had very different implicit conceptualizations for how differences in work time are accounted for in occupational choices and that each conceptualization was accurate under some circumstances. A consideration of those circumstances became the basis of this paper.

Ben-Zion’s conceptualization would be correct in the following circumstances: Assume that a preinjury worker has special skills such that he is able to choose the number of hours he wants to work. Because the worker greatly enjoys leisure, the worker chooses to work 1700 hours per year, working an average of approximately 33 hours per week. As the result of his injury, the worker is now forced into a residual occupation in which he is required to work an average of 40 hours per week. This worker has been forced to give up seven hours of leisure per week that the worker had demonstrated he preferred by forgoing working those hours at his previously higher wage rate. Valuing the lost seven hours per week at the worker’s preinjury rate of earnings under these circumstances is reasonable, assuming that a solid foundation exists for all of the facts that define this circumstance.

Riccardi’s conceptualization would be correct under these circumstances: Assume that a preinjury worker was in a construction trade such she were required to be on call 45 hours per week, but actually worked an average of 33 paid hours per week, such that her earnings were based on 1700 hours per week. After her injury, she took residual employment that required that she work a 40 hour workweek on a regular schedule. In this case, even though she is working seven hours more per week than in her preinjury occupation, she has gained the ability to make advance plans for her leisure uses of five hours per week more than in her preinjury employment. In such circumstances, it would not be reasonable to argue that her preinjury earning capacity should be projected at 33 hours per week. In reality, she had to precommit 45 hours per week to obtain earnings for an average of 33 hours per week.

The circumstances just described for the Riccardi conceptualization are such that two workers in the same circumstances might have quite different outcomes. For example, one worker might love to spend time on wood carving, which she could enjoy whenever time was available without advance notice. As a result, this worker could fully enjoy the 12 hours out of 45 that she had to commit to her job. A second worker with no similar hobbies may have found the 12 hours more of a nuisance than a benefit. Since she did not know which hours out of the 45 hours would become free, she could not make advance plans with others. Daytime television is not an appealing way to spend time for most people. This second individual may have taken employment that entailed 1700 hours because she enjoyed the job very much and because the job’s annual earnings were higher than any other job available. Based on this individual’s preferences, however, she might have preferred to work as many as 2340 hours per year. Thus, the fact that the job only allowed the opportunity to work 1700 hours represents a cost of the job, not a benefit. The first worker benefits from the lower number of hours worked in this employment and the second worker is worse off because of them. Establishing a reliable foundation for making an argument that the worker was in either category would be difficult. Thus, Riccardi would be reasonable in projecting the difference in earnings without regard to the differences in time worked in pre and postinjury employments.

The circumstances just described, however, are only a small subset of the kinds of circumstances that might differentiate time uses and requirements in pre and postinjury employments. This paper discusses 12 areas in which important differences might exist between work time requirements in pre and postinjury employments. Much of that discussion is based on common sense, and most economists would find ways to deal with the circumstances described,
with or without this paper. However, the issue of time differences between preinjury and postinjury full-time occupations is an important issue, about which no literature in forensic economics currently exists. For that reason, there is likely to be a value in having at least one paper in our literature that discusses that issue. Hopefully, this paper will provide a reference that may occasionally be helpful in consulting assignments.

Areas of Differences in Work Time Requirements in Pre and Postinjury Employments

Differences in the Number of Regular Workweek Hours

For purposes of federal statistics, a workweek of more than 35 hours in a primary employment is considered full-time employment. The average work week varies from 35 hours to significantly more than 40 hours, depending on occupation. The definition being used here for hours is the number of hours during which a worker is required to be in specific locations, as distinguished from on call time requirements. On Call requirements mean that a worker can go where he or she wishes within a given distance range but must either check in with an employer or be ready to receive a call to begin work on an immediate basis. On call obligations of a job will be discussed in the next section. In this section, the focus is on the possibility that the regular expected number of hours worked each week is different between pre and postinjury employment.

The difference could go in either direction. In her preinjury employment, a worker might have had a 40 hour regular workweek but only a 35 hour workweek in her postinjury employment. It could also be the case that in her preinjury employment, a worker had a 35 hour workweek but had a 40 hour workweek in her postinjury employment. From the standpoint of a forensic economist, the questions are whether time differences of this magnitude should be considered at all and, if so, whether the treatment should be symmetrical. In the event that the postinjury job requires a longer regular workweek than the preinjury job, it would appear that the worker has lost five hours of discretionary time (assuming other time aspects of the job are equal). It would be easy to take a Ben-Zion position and value the five additional hours of required work activity at either the preinjury hourly rate or at the postinjury hourly rate. (One could argue the valuation should be based on either rate.)

However, does symmetry require that if the preinjury job required more regular hours than the postinjury job, a forensic economist should subtract five hours of losses because the postinjury worker has gained five more hours of discretionary time (again, at either the preinjury or postinjury hourly rate)? If the logic involved is not assumed to be symmetrical, one could argue for treating the additional five hours in the first instance as a loss but not treat the increased leisure hours in the second instance as a benefit. This, however, implies that there was something optimal about the size of the regular workweek before the injury, a proposition that may be hard to substantiate.

Differences in the Timing of Regular Workweek Hours

Some employments involve multiple shifts. Typically the night shift is the least popular because it disrupts the normal biorhythms of workers and makes it difficult on other family members to adjust to the worker's schedule. With some employments, the hourly compensation rate is higher for night and weekend shifts to compensate for differences in the desirability of the work schedule. These shift differentials, however, are often insufficient to induce a sufficient number of workers to work undesirable shifts, requiring rotation or a seniority system for assigning workers to the shifts that they work. Suppose that a given worker had been working the night shift with a shift differential of, say, $1.00 per hour. The worker is injured and forced to take a new employment that does not involve night shifts. Should the shift differential be subtracted from preinjury earnings to make the appropriate comparison between preinjury and postinjury compensation? Or should it be argued that one of the losses of the worker was his opportunity to work the night shift and earn the night pay shift differential?

Differences in On Call Obligations of a Job

Many railroad workers are on call almost 80 hours per week. They can be called into work during almost half of the 168 hours that exist in a week. Railroad workers often work less than 40 hours out of the 80 hours when they are on call. They gain experience in anticipating when they are likely to be expected to work and can plan accordingly, but their workweeks remain much less certain than those of most workers. Most workers know that their workweek involves

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a specific schedule, regardless of the number of expected hours. How does a forensic economist value differences that are based on the regularity of the worker’s work hours and the ability to predict when those work hours will actually occur? Suppose that a railroad worker who averaged working 35 hours per week, but was on call for 80 hours, is forced into a postinjury employment in which he works a regular 37.5 hours per week, Monday through Friday. He is working more actual hours but has much larger blocks of time that can be scheduled as he wishes than before his injury. Does this constitute a negative or a positive element of comparison between the pre and postinjury employments?

Differences in Unpaid Travel Time and Break Time

Travel time is a function of the distance between a worker’s home and her place of employment. It is also a function of proximity of starting and ending times for work to the rush hour, the period when no one can rush anywhere. Similarly, there are differences in the amounts and ability to use break time. Short errands can sometimes be run on one hour lunch breaks. They normally cannot be run on half hour lunch breaks. With some jobs, 15 minute morning and afternoon breaks can sometimes be used to make personal telephone calls, but not in other jobs. How does one value differences in travel time to and from work in pre and postinjury employments? Similarly, how does one value differences in the amounts, predictability and usefulness of lunch hours and morning and afternoon break periods?

Seasonal Differences

Some occupations imply significantly different amounts of work time during different seasons of the year. Construction and other outside work is often limited in winter, while other types of work rise and fall with seasonal changes. In some seasons, this may result in an expectation that a worker will accept significant amounts of overtime work. In other seasons, there may be annual layoffs. These seasonal differences can affect the average number of hours worked in an occupation. It is not uncommon for persons in construction trades, for example, to work 1700 hours per year. If one uses the Ben-Zion approach and projects the worker’s postinjury earning capacity as being based on 1700 hours per year, one is ignoring the probability that the reason the worker works 1700 hours per year is unavailability of more work than that. Earning capacity has both a supply side and a demand side. The fact that a worker would like to work 2080 hours does not necessarily imply that the worker can find work for 2080 hours per year, particularly in occupations with important seasonal considerations in work opportunities.

There is, of course, a potential upside for workers in occupations involving seasonal employment. A construction worker who loves to ski might well find that construction work was well suited to his preferences. Her skiing opportunities would exist at the exact time when construction work was most scarce. If injured and forced into a sedentary occupation with longer hours during the winter months, the loss could be considerably greater than for another worker who chose construction work because it paid more than any other occupation for which he was qualified. In his case, the 1700 hours of annual work in construction paid more than any other occupation, but at a cost of trying to find interesting things to do at home during winter months.

Differences in Paid Leave, Both in Amounts and in Flexibility

As indicated earlier, most forensic economists would value differences in weeks of paid vacation between a pre and postinjury employment at either the preinjury or the postinjury wage rate. If a worker had five weeks of paid vacation in her pre injury employment and has only two weeks of paid vacation in her postinjury employment and other time considerations were similar, the worker has lost three weeks of paid vacation. Whether those weeks should be valued at the preinjury wage rate or the postinjury wage rate can be argued either way, but there is not much question that there is a loss and that one of those two wage rates should be used to value the lost weeks of paid vacation even though they do not show up as differences in annual earnings. The same would be true of other forms of paid leave, such as paid vacation and special paid leave opportunities for doctors’ appointments and so forth.

However, there can be great differences in the flexibility with which paid leave can be used. For some workers, paid vacations must be scheduled as a single block of time by a deadline in January. For a small number of workers, the block of time is scheduled by the employer, not the worker. For others, vacation can be taken in increments as small as a half a day with very little advance notice.
required. Five weeks of paid vacation that has to be scheduled in January in a single block of time is worth a lot less than five weeks that can be taken in half day increments with 48 hours of advance notice. There is probably no reasonable way to attach a dollar value to flexibility in scheduling, but differences of this sort should be noted in the narrative sections of reports of damages written by forensic economists.

Overtime As an Opportunity Or As a Requirement

Most hourly workers in the American economy have no opportunity or requirement to put in overtime hours for pay beyond the regular workweek. (Salaried workers typically do not receive direct extra compensation for extra hours worked but may increase their chances for pay increases and promotions if they do so.) Overtime may be an option for workers or may be a requirement. In the former case, overtime opportunities are unambiguously an advantage. Since workers who do not elect to work overtime are not penalized, it can only be an advantage for the opportunity to exist. When overtime is required, the requirement may be either an advantage or a disadvantage of the job, depending on the work preferences of an employee. For those workers who like the extra pay for required overtime hours, required overtime is an advantage relative to equal paying jobs without an overtime opportunity. For those workers who do not like working overtime, required overtime is a disadvantage.

Under specified circumstances, federal law requires payment of time-and-a-half for required overtime hours. Some union contracts include double pay and even triple pay on specified holidays. When a worker has a substantial number of overtime hours in a preinjury employment, this can be an important issue in projecting future earnings. A worker in his 30's who has worked an extra 1000 hours per year in overtime over the three years prior to his injury will have large reported incomes for those years. However, it is unlikely that the worker could or would continue to work that number of overtime hours into his 40's and 50's. How a forensic economist should project future lost earnings under such circumstances is an issue that has received very little attention in the literature of forensic economics, but this situation arises often enough that more discussion of this issue is in order.

Differences in Expected Retirement Ages

Occupations differ in what constitutes normal retirement ages. Most professional athletes will have retired from their respective sports by the age of 40. Firefighters, police and military occupations offer pensions after 20 years of work. While the ADA prevents firings of workers for most occupations because of age, pension programs and other voluntary mechanisms are used to induce workers to retire at ages appropriate to their occupations. If the normal retirement ages are young enough, there are often typical occupations individuals enter when they retire from their first occupations. Traditionally, for example, military pilots often moved on to become private commercial pilots, capitalizing on their flight training, and so forth. Even with such secondary employments, however, normal retirement ages vary by occupation. Some more sedentary occupations provide their greatest earnings at older ages, while hard labor occupations become increasingly difficult to maintain at older ages. When an injury forces a worker from one occupation to another, differences in expected retirement ages can become an issue.

For a typical example, consider the railroad industry. Many of the jobs in this industry involve hard outside labor and nights away from home. This is reflected in pension arrangements such that a worker with 360 months of railroad credits can retire with a retirement annuity that is not actuarially reduced at age 60 under current law. Early retirement provisions under the Railroad Retirement System reflect the nature of the type of work being done. If a railroad worker is injured and forced to move into a more sedentary occupation, it is not likely that the worker would retire as early as age 60. Depending on the nature of the injury, there may be no reason it is likely to shorten the worker's expected work life, but it could lengthen the worker's work life by making it likely that the worker would continue working, if healthy, after the age of 60. For a forensic economist, however, it would pose a problem to project offset earnings in the postinjury occupation for a longer period than the worker would have been expected to work in the preinjury occupation. The injury did not lengthen the worker's expected work life. It lengthened the period the individual would have to work before being able to take a comfortable retirement. As a result, many forensic economists, including this author do not consider offset earnings after the age of expected retirement in the preinjury occupation.

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It is unlikely, but possible for the reverse situation to occur. In that situation, an individual whose preinjury occupation involved a later expected retirement age would move into postinjury occupation with an earlier expected retirement age. If this was to happen, how that situation should be considered when calculating pre and postinjury earnings streams is an interesting question. If the postinjury occupation provided for a full retirement benefit at an earlier age than the preinjury occupation, this could be an advantage. But it could also be a disadvantage if not enough time remained before that normal retirement age for the individual to take full advantage of the early retirement opportunity.

Ease of Unscheduled Absences

One major advantage of some occupations is the ability to take off work on very short notice. Small children placed in day care centers sometimes become ill and require one of their parents to pick them up and care for them at home or take them to medical doctors on very short notice. Similarly, when an individual has a responsibility for care of elderly relatives, there can be a need by the worker for taking off work with very little advance notice. So-called “mommy track” occupations offer this sort of advantage to mothers of young children and elder care givers. If an injury results in a worker being forced to take alternative employment that does not allow for unscheduled absences, it can impose a large financial hardship on families that is not captured by earning differentials between pre and postinjury occupations. This could be the case even if the postinjury employment offers higher pay than the preinjury employment. For example, a more expensive day care center might provide a way to care for a sick child. If the additional cost of that day care center were greater than the pay differential between the two employment, there would be a financial loss to the family even though there was small gain in earnings when the worker moved from the preinjury employment to the postinjury employment. In this case, however, the financial consequences of the change would probably be relatively easy for the forensic economist to discover, at least on the plaintiff side. The injured plaintiff would be well aware of the financial consequences and probably eager to explain them to her forensic economist.

Availability of Unemployment Compensation and Short-Term Alternative Work

School teachers typically have summers off, which can be an advantage when an individual has small children who will not be in school during the same periods. For school teachers without small children, however, the summer months can be a time when additional earnings become available with part-time employment – if such employments are available with reasonable compensation. If such employments are not available, the summer months simply become a period of unused earning capacity that is sufficiently compensated by salaries paid for school year employment. This is not true of school teachers, but some seasonal jobs provide unemployment compensation during seasonal periods of regular unemployment. For some workers, predictable periods of seasonal unemployment can become like extended vacations, with unemployment compensation making those periods partially paid vacations. For other workers, these differences become limitations on earnings that workers take into account when selecting the occupations involved, even though they would prefer to work more months than are available in those occupations.

Expected Time of Retraining if Unable to Continue in an Occupation

Another time-issue between occupations is the time period required for retraining if the individual is forced to leave the existing occupation and enter a new occupation. The need to change may be either a direct consequence of an injury and a consequence of the nature of the occupation itself. If an occupation creates transferable skills, it generally means that not as much time needs to be spent in retraining if the individual is forced, for one reason or another, to leave that occupation. However, what may be a transferable skill for a worker with no physical limitations may not be a transferable skill for an individual with physical limitations. If a vocational expert is involved, it is likely that a transferable skills analysis will be part of his or her report. However, the focus will be on transference from the preinjury occupation to the postinjury occupation. It is relevant to also consider what transferable skills the individual will acquire in the postinjury occupation that are specific to the individual’s physical limitations. For the first occupational switch in response to an injury,
the transference of skills may be high. If a second occupational switch would require significant periods for retraining, that should be considered in a damages report.

**Continuing Education Requirements**

The last source of time differences to be considered in this paper are continuing education requirements. School teachers, to maintain pay scales must often take college courses on a continuing basis. Other occupations also have continuing education requirements. Continuing education requirements constitute claims against an individual’s leisure time, for which no compensation is forthcoming. Indeed, the worker often has to pay for courses and materials needed to satisfy continuing education requirements in an occupation. To the extent that such requirements exist in the preinjury or postinjury track, they should be considered in a damages analysis.

**Conclusion**

With all of this as a background, it is useful to return to the discussion between Tony Riccardi and Barry Ben-Zion that it began with. The Ben-Zion position is accurate for the first circumstance considered but seems to have little merit in most circumstances. The Riccardi position was essentially that workers seek out the best existing opportunity for themselves in each circumstance such that there is usually no justification for adjusting earnings to reflect time differences in employments. The number and complexity of ways that jobs might differ in time requirements would seem to suggest that this is a reasonable approach. Given that this author has seldom seen any other approach used, except in plaintiff oriented and over-reaching calculations, the Riccardi position appears to be the conventional position of most forensic economists. On the other hand, there are circumstances in which the Ben-Zion position is correct, and the Riccardi position would be enhanced by a thoughtful consideration of the types of differences discussed in this paper.

A thoughtful consideration does not have to constitute making calculations. A good forensic economics report considers all differences that might have a bearing on the nature of the economic damages that have occurred as the result of an injury. Not all differences that are worthy of consideration are amenable to reliable calculations. Many important differences discussed in this paper are

Factors about which individuals could have important utility differences. For some individuals, they could be benefits, while significant costs for others. Economists cannot measure utility differences unless there is a market in which they are valued by commercial tests. Economists can, however, provide a clearer prism through which triers of fact can think about these differences.
Endnotes

1. The four persons at lunch were Barry Ben-Zion, Gail Ben-Zion, Anthony Riccardi and the author. Barry Ben-Zion is an experienced forensic economist from Santa Rosa, California. Tony Riccardi is an experienced forensic economist from Albany, New York. Both Ben-Zion and Riccardi have consented to the use of their names in this paper.

2. A reviewer has pointed out that Ben-Zion’s conceptualization involves placing a dollar value on utility losses in a way that is similar to assigning dollar values to hedonic damages. Ben-Zion is providing compensation for additional hours of leisure that have been lost because of an injury. While this may be similar, the foundation for projecting a dollar value for lost leisure is much stronger than the types of calculations based on the value of life literature that ordinarily underlie hedonic damages calculations by the few economic experts willing to provide such estimates. For a review of that literature, see Thomas R. Ireland and John O. Ward (1996) and Viscusi (2000). In Ben-Zion’s conceptualization, information about the individual’s preinjury willingness to give up time in return for compensation is relied upon. Since employments tend to be offered in chunky amounts, however, one can ordinarily not infer a correct marginal value of time from an individual’s average wage rate. If a worker is offered a 40 hour per week job at a given hourly rate, but has limited choices about the number of hours to be worked, all that can be inferred is that the individual valued the job at 40 hours more than 40 hours of leisure. If the individual has flexibility in determining work hours and chose to work 30 hours, sacrificing the income that could have been earned if more hours were worked, an adjusted (for tax and fringe benefit consequences) wage rate can measure the marginal value of time.

3. It should also be noted that many individuals do not spend their entire work lives in the same jobs. As such, what might be true at the time of injury might not have been true five or six years in the future. The discussion in this paper implicitly assumes that time preferences of individuals would remain constant over a worker’s work life to avoid unnecessary complications, but changes in work preferences over time is a worthy subject for research or analysis on its own.

4. In any real-world circumstance, a forensic economist would have to take into account how the concept of earning capacity is handled in that state. This is another topic not addressed in the current paper. This author is not familiar with any state that does not use lost earning capacity as its standard for recovery of lost future income, as compared with expected lost earnings. However, different states and even different judges in the same state may operate from different understandings of how narrowly or broadly the term earning capacity can be interpreted. At one extreme, in no state is the standard that lost earnings are to be measured as the maximum possible earnings of an individual if the individual was willing to sacrifice all other aspects of life. At the other extreme, there is no state that would require that the lost earnings of a college student who was working part-time while going to college be used to project future lost earning capacity of that student. This paper has been written with a perspective that earning capacity refers to reasonably expected earnings of an individual.

The Past As Prologue: On the Accuracy of Using Historical Averages in Discounting Future Lost Earnings to Present Value

Introduction

A variety of methods are currently used by forensic economists to discount long-term future earnings losses to present value. Published surveys of forensic economics practice (Brookshire and Slesnick 1993; 1999) as well as an analysis of the forensic economics literature strongly suggest that the most common of these methods is the use of long-term historical averages of discount rates and earnings growth rates. These average discount rates and earnings growth rates are used, either separately or after first being combined into a net discount rate, to calculate the present value of the future losses. While this historical averages method evidently has been in use for some time, relatively little effort has been expended to assess its degree of accuracy in estimating the lump sum of money actually needed to replace the future lost earnings. The primary purpose of this paper is to provide such an assessment.

Given the passage of time, the accuracy of any method of...