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It's About Time: The Forensic Economic Evaluation

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I. Introduction

Federal and state legal systems rely upon the reasoning of judges and juries to ascertain what is just compensation for personal injury as result of a tort. There are no precise rules to follow in determining damages. Jurists consider the plaintiffs' own itemization of damage, but they also use their own reasoning and the guidance of the law and testimony of forensic economists. Likewise, each forensic economist uses his or her reasoning, legal parameters, and economic training in determining just compensation.

The provision of economic relief for persons suffering personal injury is a basic tenant of our society. The agents for relief for injury outside of litigation are bureaucracies that follow precise legislated statute or contracts in making their determination of economic relief. Societal programs such as the Social Security Administration, Workers' Compensation, and Veterans Administration disability benefits attempt to develop impartial and objective methods for determining the level of support appropriate to a person in particular circumstances. While many components of forensic economic evaluations of compensation to a Plaintiff due to a tort are the same as those in a bureaucratic relief evaluation, important differences exist that make the two evaluative processes incompatible. In this paper, we discuss the similarities and differences of these two evaluative processes to emphasize the unique contribution the forensic economist makes to the evaluation of relief necessary for personal injury.

Bureaucratic evaluations are concerned with the claimant's current capabilities. The forensic economist extends the bureaucratic evaluation to include a prediction of the claimant's probable future capabilities based on the observed traits of persons similarly situated to the Plaintiff. The forensic economist provides testimony to give the jurists necessary information in order to make predictions of the Plaintiff's future pecuniary economic situation with pre-injury and post-injury assumptions and discoveries.

We begin the paper with a comparison of the evaluation procedures employed by societal or bureaucratic relief providers (i.e., Social Security, Workers Compensation, Veterans Administration, etc.) and economists in litigation. We then expand the discussion of the forensic economic evaluation to include how economists use the economic variables of productivity, alloca-

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tion of time, output, and economic return[1] within the forensic economic evaluation. We point out that forensic economic considerations are not thoroughly analyzed with the bureaucratic relief frameworks and may result in a different outcome than a bureaucratic evaluation.

II. Bureaucratic Compensation Mechanisms

Many bureaucratic institutions provide economic relief to the injured and disabled. Claimants seek economic relief for the incidence of injury or disability. The determination of possible relief is associated with the claimant's situation at the time of application for benefits. In the context of personal injury, five bureaucratic institutions are common: the Americans with Disability Act (Equal Employment Opportunity Commission—EEOC), Social Security Administration, Veterans Administration, Workers Compensation Insurance, and Private Disability Insurance. In this section of the paper, we look at the evaluative processes of these economic relief providers. We compare and contrast the evaluations within each system with the forensic economic situation.

A. Americans with Disabilities Act (ADA)

Congress passed the ADA to enable the participation of individuals with disabilities in all aspects of society, particularly employment. The ADA covers 'qualified individuals with a disability'. Two steps determine whether an individual with a disability is qualified. The first step determines if the individual has the education, training, skills, experience, and other job-related credentials for the position being denied. The second step determines whether the individual can perform the essential functions of the position held or desired, with or without accommodation. The purpose of the second step is to ensure that individuals with disabilities, who can perform a position's essential or fundamental functions, are not denied employment opportunity simply because they are not able to perform the position's marginal or peripheral functions.

The ADA seeks to protect the economic returns that disabled persons can achieve with their output or usage of time. The ADA evaluation is job, task, and time specific. A claimant does not come to the EEOC for job placement or provision for life activity, but for remedy in a specific situation at the current point in time. Although it concentrates on providing remedies in employment, the ADA reaches out to community access and enrichment; it focuses on identifying and preserving the disabled's capabilities through satisfaction of the essential features of living with accommodation while recognizing that each disabled person has differing capacities within her or his own disabling condition.

Forensic economic evaluations often include life care items for productivity accommodation—adaptive or assisting devices and home modifications—but do not provide for economic returns greater than pre-injury levels. Given a set of observed education, training, skills, experience, and capability variables, the forensic economist matches the Plaintiff to other persons with similar traits. While the ADA evaluator matches the capabilities of a person

[1]We use the traditional economic definitions of these traits. Output: total production of goods or services. Productivity: output per unit of time. Allocation: time spent per activity. Return: compensation for the production of output.

to a job, the forensic economic evaluator matches the Plaintiff to the observable traits of a group of similarly situated people. Like the ADA, forensic economists recognize that many disabled persons perform essential functions in their lives, however, most are limited due to discrimination, inconvenience, reduced productivity and output, or lack of assistance or accommodation. The forensic economist, while unable to quantify life inconvenience, focuses on the monetary cost of lost productivity, output, and the cost of assistance and accommodation.

B. Social Security

The Social Security Act established a social insurance program designed to provide guaranteed income to individuals with disabilities causing incapability of securing and maintaining gainful employment. The SSA definition of the term disability reflects the obligation to provide benefits to people who generally are unable to work. The definition focuses on what claimants cannot do and on whether they have the capacity to perform work in the national economy in general.

To receive SSA disability benefits, individuals must prove that they are disabled under the Social Security Disability Insurance (SSDI) or the Supplemental Security Income (SSI) program. The essential requirement for both programs is that the claimant be unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months.[2] Under the statute, claimants are entitled to disability benefits if their impairments are of such severity that they are not only unable to do their previous work but cannot, considering age, education, and work experience, engage in any other kind of substantial gainful work which exists in the national economy.

The SSA itself, however, recognizes that the claimant may be found to be unable to engage in substantial gainful activity and yet still may be able to work in a particular position. Although the SSA program is designed to provide a guaranteed income to individuals who are found to meet SSA disability eligibility criteria, Congress has recognized the importance of encouraging individuals with disabilities to work whenever possible. In many cases, even the SSA does not view a claimant who meets its definition of disability as someone who is unable to perform all types of work.

To determine if the claimant meets the SSA definition of disability, the SSA uses a sequential evaluation process. This five-step process requires the SSA evaluator to ask and determine the answers to the following questions:

1. Is the claimant currently engaging in substantial gainful activity? (If the answer is yes, the claim is denied; if the answer is no, the claim continues to the next step.)
2. Does the claimant have a severe impairment? (If the answer is no, the claim is denied; if the claimant has an impairment that significantly limits ability to work—that is, it is severe—the claim continues to step 3.)

[2]Section 223(d) of the Social Security Act, 42 U.S.C. § 423(d).

3. Does the claimant have impairment that is equivalent to any impairment the SSA has listed as so severe that it automatically precludes substantial gainful activity?[3] (If the claimant has an impairment that is medically the equivalent of a listed impairment, the claimant is presumed disabled by the SSA and benefits are granted; if the claimant does not have a listed impairment, the claim proceeds to step 4.)
4. Does the impairment prevent the claimant from performing his or her past relevant work? (If the claimant can perform his or her past relevant work, the claim is denied; if the claimant cannot perform such work, the claim continues to step 5.)
5. Does the impairment prevent the claimant from performing any other type of work? (If the SSA determines that the claimant is able to perform other work which exists in the national economy, the claim is denied; if the SSA determines that the claimant is unable to perform any work, considering his or her age, education, and past work experience, benefits are granted.)

The SSA acknowledges the differences between its standards and those of other statutory schemes. In that regard, SSA regulations note that a decision by any other entity about whether an individual is disabled is based on the other entity's rules and may not be the same as the SSA's determination, which is based on Social Security law. The SSA definition of disability is inherently different from the ADA definition of qualified individual with a disability and any forensic economic evaluation. First, whereas the ADA always requires an individualized inquiry into the ability of a particular person to meet the requirements of a particular position, the SSA permits general presumptions about an individual's ability to work. In that regard, the SSA considers some conditions to be presumptively disabling. If a claimant has an impairment that is medically the equivalent of a listed impairment, then the SSA presumes that the disorder is so severe as to prevent the claimant from doing any substantial gainful activity, without considering his or her age, education, and past work experience. Thus, an individual can have a disability under the SSA definition and yet in fact still be able to work.

Forensic economists do not assume that because a person has a Social Security total disability evaluation they are unable to perform any work. There have been many ADA cases where persons with Social Security total disability classifications were denied employment simply because of their Social Security status. Social Security evaluations are not focused towards adapting or accommodating work environments or schedules. A person may have a SSA total disability rating but be able to perform work part-time or work in an accommodated situation.

C. Veterans Administration

The Veterans Administration, through its disability-rating schedule,[4] provides a guide to the evaluation of disability resulting from all types of diseases and injuries encountered as result of or incident to military service.

[3]See 20 C.F.R. Pt. 404, Subpt. P, App. 1 for a complete list of presumptively disabling conditions.

[4]CFR 38, part 4.

The VA percentage ratings represent, as far as can practicably be determined by the VA, the average impairment in earnings capacity resulting from such diseases and injuries and their residual conditions in civil occupations. Generally, the degrees of disability specified are considered adequate by the VA to compensate for considerable loss of working time from exacerbations or illnesses proportionate to the severity of the several grades of disability.

Once in the VA disability system, a veteran's disability claim may require re-rating in accordance with changes in law, medical knowledge, and the claimant's physical or mental condition. Each disability is considered from the point of view of the veteran working or seeking work. The basis of the disability evaluation is the ability of the body as a whole, or of the psyche, or of a system or organ of the body to function under the ordinary conditions of daily life including employment. Whatever the condition, evaluations are based on the lack of usefulness, of parts or systems, especially pertaining to self-support. The initial medical examiner has the responsibility of furnishing, in addition to the standard clinical items, full description of the effects of disability upon the person's ordinary activity. The VA allows an evaluation to result in the conclusion that the person is too disabled to engage in employment although she or he is up and about and fairly comfortable at home or upon limited activity.

The VA recognizes that the ability to overcome the handicap of disability varies widely among individuals. The VA ratings, however, are based primarily upon the average impairment in earnings capacity, that is, upon the economic handicap which must be overcome and not from individual success in overcoming it. The VA evaluation focuses on what the injured person can no longer do as opposed to what they capable of doing with or without accommodation by type of disability.[5] Total disability is considered to exist when there is present any impairment of mind or body which is sufficient to render it impossible for the average person to follow a substantially gainful occupation; provided, that permanent total disability shall be taken to exist when the impairment is reasonably certain to continue throughout the life of the disabled person. Marginal employment is not considered substantially gainful employment (the U.S. Census poverty threshold for one person is the basis used by the VA). The evaluation must include consideration of employment, educational, and vocational history. Since the evaluation process is on going, age is omitted from the analysis.

The VA disability evaluation recognizes changes in disability status with time. The economic variables—productivity, output, and return—change with time: improvement occurs or disability continues. The VA disability rating system is most similar to the SSA evaluation. The VA and SSA provide lists of disabling conditions that guarantee total permanent disability status without regards to any considerations about the claimant's ability to perform work. The VA extends the SSA consideration into partial disability status by type of injury or disease.

The forensic economist obtains the effects of disability upon the person's ordinary activity before assessing economic damages. The VA, and to some extent the SSA, highlights the importance of time in the evaluation of disability. Unless a case takes many years to litigate, the forensic economist has one chance to evaluate the likely impacts of disability. As such, the so-

[5]There are several hundred disabilities contained within the VA disability-rating schedule.

cial science training of the forensic economist becomes important in predicting the likely circumstances of a particular individual throughout each stage of life. Bureaucratic evaluators are not concerned with the individual at any point in time other than today. Any future change in status must be accounted in a later re-evaluation. Bureaucratic evaluators do not have to predict the future. In a tort case, re-evaluation is not possible. As such, the forensic damage expert must not only be knowledgeable of the Plaintiff's current situation, but likely future situations pre- and post-injury. The economic social science provides a theoretical structure to make this type of evaluation. Economics is concerned with the lifelong economic capabilities, behaviors, and decisions that people have and make whether they are disabled or not. The forensic economist predicts what the Plaintiff will probably do based on what other similarly situated people do. The forensic economist is trained to analyze cross-sectional snap-shots and longitudinal panels of social science data and to sort out the economic situations of identifiable groups. The economist uses social science economic theory in matching a Plaintiff to a probable outcome.

D. Workers' Compensation

The workers' compensation definitions of disability reflect the purposes of workers' compensation laws. Those laws provide a system for securing settlement of employees' claims against employers for occupational injury and illness. In that regard, the laws generally require employers to compensate employees who are injured in the course of employment.

To receive workers' compensation benefits, an employee generally must prove that she or he has a compensable disability as defined by the applicable workers' compensation statute. The term disability in this context most commonly means an anticipated loss or reduction of earning power that results from a work-related injury. Some statutes, however, do not define disability in terms of lost earning capacity. Instead, under these statutes, an injured worker has a disability if his or her productivity has been substantially reduced, or if she or he is unable to perform the same work with the same ease as before the injury or is unable to do various types of work that she or he could do before the injury. Under these statutes, the worker has a disability even if he or she is employed at the same work and at the same wages as before the injury.

Although workers' compensation laws vary from state to state, the typical statute ordinarily provides the following four classifications of disability, determined by duration and severity or extent: temporary partial, temporary total, permanent partial, and permanent total. Generally, a disability is partial rather than total where the claimant is still capable of gainful employment, although the disability is found to prevent the claimant from returning to former employment. Conversely, a worker generally is considered totally disabled when the injury is found to render the worker temporarily or permanently unable to do any kind of work for which there is a reasonably stable employment market. Some workers' compensation statutes presume that some conditions are so severe as to prevent the claimant from doing any kind of work. In such instances, a claimant does not have to make any representations about ability to work and need not show a loss of earning capacity to prove permanent total disability.

The goal of workers' compensation laws is to provide relief during the period of time needed to initiate a plan for the return to work. Without one-time settlement, even permanent total claims require regular re-evaluation. With one-time settlement, compensation is usually set by formula and always limited only to the employee's wage situation at the time of injury and current, specific medical care requirements. Workers' compensation does not provide (or take away) for loss situations that have yet to occur with advancing age. For example, a 20-year old entry-level worker does not receive increased compensation for the likely higher wages he would receive with advancing age and experience nor does a 55-year old worker have compensation taken away associated with likely reduction in labor effort with advancing age.

E. Disability Insurance Plans

Many employers offer disability insurance plans to their employees as a benefit of employment. Receipt of benefits pursuant to such plans is a contractual, rather than a statutory, right. The purpose of disability insurance plans is to provide partial wage replacement when an employee becomes unable to work as a result of illness, injury, or disease. Consequently, the plans' definitions of disability focus on in-abilities rather than abilities.

To receive disability benefits, the insured must meet the eligibility requirements outlined by the terms of the contract. Disability insurance plans usually require that an individual is employed for a set period and that she or he is disabled from work. Disability benefits often are paid in proportion to the earnings lost as a result of the disability. Benefits may be limited to total disability, meaning generally that the insured is unable to perform any of the duties of his or her own occupation or any other type of work, or may be payable for partial disability, where the insured is unable to perform one or more functions of his or her regular job.

When assessing an individual's ability to perform job duties, disability insurance plans frequently do not distinguish between essential and marginal functions. For example, under a typical contract, an employee may be considered totally disabled if he or she is unable to perform the duties of the job held or a comparable job within the company. Under this definition, an individual who could perform the essential, but not all the marginal, functions of a position would be considered totally disabled.

Disability insurance is a privately contracted economic relief bureaucracy that does not evaluate anything more than the insured's capabilities within the terms of the insurance contract. As such, forensic economists do not presume that Plaintiffs receiving disability insurance benefits are unable to work, but like other recipients of bureaucratic relief, might be economically better off by not working and keeping their benefits.

III. Forensic Economic versus Bureaucratic Evaluations

Bureaucratic evaluators work within their own rules. They presume nothing more than the legislation or contractual terms require and focus squarely on economic losses from work time. Considering that throughout history time spent at work has never been greater than time spent at other

activities,[6] the bureaucratic evaluation omits many possible pecuniary elements of loss. Forensic economic evaluations must work within the procedural organization and jurisdictional application of the law. Forensic economists address how changes in the economic variables of productivity, output, and return effect the pecuniary situation of the Plaintiff over time while bureaucratic evaluations focus on today's situation. Non-economic bureaucratic evaluations do nothing to sort out the myriad of economic factors that determine claimants present or future wage possibilities.[7]

Economists and the ADA recognize that disabled[8] persons can and do perform work after the onset of disability. The forensic economic problem is to find the returns capable to the injured person given their productivity, output, and time constraints. The forensic economist evaluates what the person is capable of doing with hours of time not whether capabilities fit a legislated or contracted definition. Forensic economists and bureaucracies recognize constraints in the labor market. Employment opportunities are not offered at every level of productivity and output. For example, although an injured person might have the capability of stamping 50 pieces of mail per hour, it would be difficult to secure regular employment that would offer this opportunity or the opportunity may have substantial costs associated with it.[9]

In contrast to the ADA evaluation and with similarity to the SSA evaluation, the forensic economic evaluation is not interested in a particular employment situation, but a general evaluation of the capable usage of time. However, unlike some of the strict bureaucratic rules, the forensic economist makes determination regarding all of the time in a Plaintiff's life, not just work time. A claimant might be denied relief when they continue to work but spend all of their non-work time to recover from their labor efforts. Many disabled persons are forced to abandon portions of their leisure time because of the physical constraints on time that their disabilities impose. For example, paraplegics that work might need six extra hours a day to prepare for work and get home after work and on the weekends need to be entirely sedentary in order to recover from exhaustion incurred during the work week. The time spent by the paraplegic at work might not result in meeting bureaucratic relief standards but would result in an economic loss of time to a Plaintiff.

A. The Forensic Economic Evaluation

In personal injury and wrongful death litigation, courts encourage detailed testimony regarding claims that are pecuniary in nature. While a claim of loss of time from work is the most common pecuniary element of damages, courts recognize work at home in the form of services performed for

[6]See Becker's theory of time allocation for model of work and non-work time.

[7]A good example of the lack of consideration of economic performance variables such as productivity and return is from Edward Lazear and Robert Moore's 1984 paper that demonstrates the inconsequence of productivity along with increasing disparity in return as workers approach retirement.

[8]Of course, the exception is persons that are incapacitated.

[9]For instance, if a disabled person is employed to stamp 50 pieces of mail per hour, the person might need an attendant helping with basic functions needed to be in a position to stamp the mail. The cost of the attendant might substantially outweigh any economic gains from the employment situation.

the self and family members. Individual economic activity pursues output as well as experience.[10] However, pecuniary economic losses due to personal injury only relate to observable changes in economic output. While the courts do listen to evidence regarding the effect of injury upon the possible allocation and usage of time, they balk at letting juries hear any attempts to mathematically quantify the economic losses resulting from loss of enjoyment of time.[11] However, the court has always considered "loss of time" as a compensable as long as it is properly classified or identifiable as a pecuniary loss.[12]

The economic variables of productivity, output, and return associated with a particular usage of time generally determine how much time is allocated to any specific activity. While leisure experiences may have high rates of return in terms of enjoyment, they usually do not provide enough productive output that can be used to sustain complete allocation of time to leisure. Every mixture of economic variables results in different allocations of time and pecuniary or dollar value results.[13]

Three common categories of economic events due to personal injury are:

1. Total economic return from pecuniary output is the same as before the injury, but productivity falls and allocations of time change. Examples: the business owner, or homemaker, puts in more hours per week to get the pre-injury level of output completed; there is a loss of personal time due to fatigue; the injured person works more years in order to make up lost income; or, sleep is disturbed.
2. Productivity during time spent producing pecuniary output is the same as before the injury, but the economic returns on output fall. Examples: discrimination prevents fair compensation or participation; a person puts forth the same effort, but due to injury must change occupations (with lower wages) or alter activities (with lower enjoyment).
3. Productivity and economic returns both fall. Examples: Unable to participate in pre-injury employment, household, or leisure activities; only able to work at alternative, part-time employment with reduced wage per hour; shortened worklife or life expectancy with decreased capacity to perform work and services.

[10]From page 3 of *Pursuing Happiness* by Stanley Lebergott. This book presents insightful observations on the preferences towards experience and output.

[11]The Supreme Court of the United States speaking about elements of loss of society stated "As in all damages awards for tortious injury, "[i]nsistence on mathematical precision would be illusory and the judge or juror must be allowed a fair latitude to make reasonable approximations guided by judgment and practical experience," *Whitaker v. Blidberg Rothchild Co*, 296 F.2d 554, 555 (CA4 1961)." *Sea-Land Services, Inc. v. Gaudet,* 414 U.S. 573 (1974).

[12]See the 1997 Kansas Supreme Court case 261 Kan 685, *Shirley v. Smith*, where the Court held that loss of time spent catheterizing was a proper economic loss subject to direct quantification.

[13]See John Kenneth Galbraith, *The Good Society*:

> The good society does not seek equality in economic return; that is neither a realizable nor a socially desirable goal. There are those for whom income and wealth and their public manifestation or private contemplation are the ultimate goal and satisfaction; there are others for whom they are not. The Wall Street operative measures the quality of life by his or her income; the poet, actual or aspiring, does not. It is the essence of liberty that these differences in motivation and reward be accepted. (page 28)

When awarding damages for injury, jurists alter the economic position of the Plaintiff's household. While it is not possible to formulate an economic model denominated in dollars to determine the total change in economic welfare positions[14] due to injury, dollars can be insightful for measuring a portion of loss of the usage of time. For example, suppose that before an injury a person spent 7 hours per week attending to personal hygiene and dressing. Unassisted, after an injury it now takes a person 21 hours per week to accomplish their personal hygiene and dressing tasks. However, if aided the personal hygiene and dressing would take 10.5 hours following the injury. Unassisted, the disabled person has an inconvenience of 14 hours per week. Assisted, the inconvenience falls to 3.5 hours per week but at a pecuniary cost of 10.5 hours of attendant care. The economic cost of hiring the 10.5 hours of attendant care is measurable, but the non-pecuniary value of the loss of 3.5 hours of time can not be determined using a mathematical economic model.

It is common to expect that a Plaintiff will have some additional 'spare time' to generate non-pecuniary benefit following an injury. For example, assume that a Plaintiff has been compensated for his or her inability to work 8 hours per day for the rest of their working life. After the injury, the Plaintiff now has more time to read—an activity that the Plaintiff has always enjoyed more than working. Assuming that the Plaintiff has significant impairments in using all of their time other than reading and sleeping, it is reasonable to argue that the Plaintiff has a negative non-pecuniary economic benefit during all other time. The existence of any additional non-pecuniary return following an injury does not always translate into greater economic welfare with disability than without. It is reasonably argued that a Plaintiff with award income, some additional non-pecuniary usage of time, and pain, suffering, inconvenience, physical impairment, disfigurement, and other damage is not better off than before the injury—without the award income, extra time, pain, suffering, inconvenience, physical impairment, disfigurement, etc.[15] Since many of the components of an actual economic welfare position are indeterminable with dollars and cents, the law discourages any mathematical quantification beyond that of time lost, gained, or altered that has a direct pecuniary basis or outcome. Jurists are left to deliberate the missing non-pecuniary elements of the total change in economic position as result of injury.

IV. Conclusion

Economic activity can have pecuniary and non-pecuniary components, but a forensic economic evaluation of economic losses due to personal injury only includes lost pecuniary elements. Likewise, bureaucratic evaluations of

[14]The sum of pecuniary and non-pecuniary economic benefits with the usage of time is total economic welfare. Economists formulate models to analyze how people use time and/or money to derive economic benefit. While insightful, these models are not denominated in dollars but in abstract units that may or may not be related to money.

[15]Variations on this example are numerous. For instance, expected earnings versus earnings capacity damages create different solutions for the valuation of non-work time. If a person normally retires early in order to participate in home services and leisure time, how should that time be valued when an injury prevents that outcome? For an interesting comparison of the results from a personal injury award conflicting with a bureaucratic evaluation see the U.S. Supreme Court decision in *Lukhard v. Reed*, 481 U.S. 368 (1987).

economic relief are pecuniary oriented, however, they are limited to relieving a claimant's current situation. The forensic economist extends the analysis in litigation by offering a prediction of the Plaintiff's likely future situation and pecuniary losses based on the observed traits of similarly situated persons. The forensic economic evaluation focuses on a valuation of lost time with special consideration to the economic variables of productivity, allocation, output, and return. Any forensic economic valuation of personal injury pecuniary economic damages must be measurable, observable, and quantifiable within the pecuniary framework of these variables.

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