

Premium Pay Rates and the Valuation of Non Market Time

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Abstract

Pay rates in the labor market provide an indication of the opportunity cost of time and thus the value individuals place on time they spend on leisure activities. In industries offering voluntary overtime opportunities for workers, the pay rates for that overtime often includes premium pay. If overtime is required by the employer for all workers, a pay rate of “time and a half” is mandated by federal law. That rate, or more than that rate, is typically offered for voluntary overtime as well. When overtime is voluntary and available, a worker’s decision *not* to work overtime reveals that the value of non market uses of time is worth at least the overtime pay rate and probably more. If there is premium pay for the night shift and workers choose not to work the night shift, important information is also revealed about the value of leisure during particular portions of the day. By way of contrast, in some industries overtime is not available except under very unusual circumstances. In those industries, workers wanting more money earnings may be forced to take “moonlight” jobs paying less than the amount earned in regular employment. In effect, this means that workers are trading leisure for pay at a rate below their regular market wage rate. However, this may or may not mean that the value of leisure is less than the regular pay rate for those workers. Finally, in some occupations, particularly professional occupations, the form of compensation for working more than a regular work week lies in greater chances for promotions.

In Memorium

This paper was originally to have been a joint paper with Melville Z. Wolfson, who died on November 12, 2000 at the age of 59. Mel had the original insight for this paper and we had many discussions about what it might cover. However, his illness prevented him from ever having seen any of the draft as it developed. I hope I have done justice to Mel’s ideas, but responsibility for all errors must fall on my shoulders. Mel Wolfson was one of the kindest men I have known and was a real joy to work with, as we did, on a number of projects during his last two years of life. He will be greatly missed by the entire forensic economics community. Tom Ireland

Premium Pay Rates and the Valuation of Non Market Time

I. Introduction

Time has economic value to individuals whether it is spent in the labor market, in producing family services or in what can reasonably be described as true leisure. Living involves doing things with time. Incomes and job-related fringe benefits are earned by spending time in the labor market. Family services are produced by spending time producing them. Leisure benefits are produced by spending time producing those benefits. Time can be spent learning how to increase earnings in the labor market, how to improve one's ability to provide family services, or how to derive more benefits from leisure time. Individuals must also spend time sleeping and maintaining their health and energy, which is a prerequisite for all types of long term time use. Time is the ultimate scarce resource in life and thus is involved in all decisions that relate to valuing any good, service or asset. For this reason, this paper will argue that leisure time is valuable time, not wasted time. It is time that can be valued using conventional tools of economics.

When conventional tools of valuation are used to value leisure time, however, an unconventional conclusion quickly becomes inescapable. Leisure time is often worth more than labor market time when reasonable market equivalents are used. The source of this unconventional conclusion is the existence of premium pay structures in the labor market. Labor markets offer premium hourly pay rates that are higher than regular hourly pay rates (1) if workers are being asked to provide more hours of labor than are implied by the "regular" work week and (2) if workers are being asked to provide hours of labor at unconventional times, including night shifts, weekends and holidays. In this paper, we will use the term "premium pay" to refer to pay rates that are higher than "regular pay" for work weeks of 40 hours or less with

work times during daylight hours from Monday through Friday, but not going later into the evening than 6 p.m. Premium pay rates will be understood to refer generally to all pay rates higher than “regular” pay rates, whether called “overtime,” “shift pay,” “weekend rates” or “holiday pay.”

This paper will also use the terminology “adjusted premium pay rates.” This will refer to available premium pay rates after adjustment for taxes and job-related fringe benefits. Workers who are valuing their own time when making choices between labor market and non labor market uses of time consider both financial and non financial rewards for each type of time use. However, the financial consequences of labor market time use is typically considered in terms of the after tax value of the total hourly compensation package to the worker. A worker who is deciding whether to work longer hours in the labor market is interested in how much of direct money wages will be left in the form of “take home pay” and also interested in any additional pension contributions or other “fringe benefit” value that may derive from time spent in the labor market. In this sense, an “adjusted premium pay rate” should be understood as the after tax total financial value to the worker of the labor compensation received for another hour of labor provided in the labor market.

There is a flip side of the “premium pay” argument that may apply to workers who do not have the opportunity to work more hours at their regular jobs, but are forced to take “moonlighting” jobs as an alternative. For businesses structured around the regular work week, there may be no need for extra hours of work during other times. Employees of such businesses may be forced to take lower paying “moonlighting” jobs to generate more money income. In some such circumstances, the fact that workers take such “moonlighting” jobs may imply that non labor market uses of time are worth less than regular pay rates. We will consider “moonlighting”

issues at some length, suggesting that many apparent instances of lower pay rate for hours worked in second jobs beyond the regular work week reflect considerations that do not lead to a conclusion that the value of non labor market uses is lower than the regular pay rate.

The core argument in this paper is very simple and fundamental. The value of non labor market uses of time during periods must be, at a minimum, equal to the pay rate available for that time, adjusted for job-related fringe benefits and taxes. For reasons discussed in the paper, it is likely that the value of non labor market uses of time is significantly greater than the sacrificed adjusted pay rate. However, there are often important difficulties in measuring the precise differential that ought to be applied. The paper will consider some of those difficulties and make tentative suggestions about how this methodology may be useful in cases.

This paper is confined to workers whose compensation is based on hourly pay. Sometimes workers would prefer to work longer hours at their regular jobs, but there is no opportunity for them to do so, even at regular pay rates. This paper will not deal with issues posed by salaried workers or workers on commission where pay is not based on the number of hours worked. However, while it is more complex to do so, many of the arguments made in this paper can be applied to salaried and commissioned workers.

Why “Leisure” is a Productive Time Use

In much of economics, the decision between spending time in the labor market versus other ways to spend time is often characterized as the “labor-leisure” choice. The term “leisure” can be taken to imply “unnecessary” and “unproductive” activities which are the reward a worker can enjoy as a result of unpleasant effort in the labor market. This is misleading for a number of reasons. First, many “leisure” activities can involve much more physical effort than many labor

market activities. A devoted tennis player often exerts much more concentrated physical and/or mental energy playing tennis than when working in the labor market. Second, labor market activities can be much more enjoyable than some types of non labor market activities. Going to a doctor for a physical examination is often much less pleasant than going to work at a labor market job. The same is true of many types of services that must be provided around the home, which involve activities that may be considerably less pleasant than activities engaged in as part of one's employment in the labor market.

In this paper, it will be assumed that all of a worker's time is used in one of three basic ways: (1) in the labor market, where at least part of the benefit for time so employed is financial compensation based on the number of hours provided; (2) to provide non labor market benefits including provision of family (household) services, investment in human capital (education or skill development); and (3) health and maintenance activities (including sleep, visits to doctors, exercise regimes, and personal maintenance). Third, even pleasant restful activities may be necessary components of personal maintenance. No individual has the option to spend all of his or her time in the commercial labor market. Appropriate rest, sleep, exercise, and many other health investments must be made on an ongoing basis for an individual. Thus, "leisure" should be thought of as "productive" activity and not just a period during which an individual effectively functions as a "utility sponge," at least prior to retirement. "Leisure" has value for its own sake, but it is also a necessary input to the productiveness of time spent in the labor market and time spent in producing family services.

Why Time Is More Valuable to Workers at "Off Market" Times

In its broadest possible context, the "labor-leisure" choice is a choice about how much and

when to spend time in the labor market versus spending time in all other ways. It is often an integrated family decision, since many non labor market uses of time need to be coordinated among family members. Family vacations and outings, for example, must be time coordinated in advance by all family members going on the vacations or outings. Likewise some family services cannot be provided concurrently and must be time coordinated. Painting a room cannot be done at the same time a room is being used for maintaining family records, for example. In a Becker conception of the family as a firm, time coordination of activities is as relevant to the production of services by families as it is to the production of output by firms in the commercial marketplace (Becker, 1981).

For families to function well, labor market time uses by family members must be integrated into patterns of time use expectations of family members for all other purposes, both within and outside the household. A father who works a late afternoon and evening shift often has little chance to interact with his children, increasing the guidance, care and counsel responsibilities of his spouse. Because school times are typically coordinated with the regular labor work week, it is useful for parents to be home in evenings and on weekends, when the children are also at home. This is a major reason why premium pay must be offered to get workers to work at times that would ordinarily be times that could be most easily coordinated with time availability of other family members. Evenings and weekends are also times when friends and associates are available for social outings of various types. There is a reason that most parties are held on weekends. The value of non market time in evenings, on weekends and during holidays increases significantly because of the general availability of other family members and friends during these periods. These periods are also generally when entertainment opportunities are greatest. Daytime

television is notoriously uninteresting to most workers. Sporting events are not held during the work week, and so forth.

Finally, night shifts are notoriously hard on family life. When one spouse work all night, other family members are expected to maintain quiet during the day when the spouse sleeps. Day sleep is harder to accomplish for many workers, resulting in a deterioration of the quality of time when the worker is not asleep or at work. It is for all of these reasons that most workers tend to regard time in evenings, on weekends as more valuable than time spent in the labor market during the week.

Take-It-or-Leave-It Regular Work Weeks

The essence of the previous section was that all time is not equal. From the standpoint of availability of non market uses of time, time during evenings, weekends and holidays is more valuable than time during the regular work week. This leads to one reason why employers must offer premium pay to induce workers to work at odd shift times, on weekends and on holidays. The second reason lies in the quantity adjustment issue. Separate from *when* time is used in non market contexts, workers typically want more of it than they have available when working regular work weeks. Employer typically confront workers with a “take it or leave it” offer of working during the regular work week. The worker who is offered a “job” may know that the job includes work from 8:00 a.m. to 4:30 p.m. from Monday through Friday, with one hour off for lunch, for a 37.5 hour work week. Under these circumstances, the decision the worker makes is whether this “job” is the best offer of a “job” available. With jobs of this type, the worker is not free to choose to work some other number of hours, at least at the same pay. Part time workers typically earn less than full time workers, with the difference constituting added pay for working the full week,

even if the worker would prefer to work fewer hours than that.

If a job offer is based on a specified “regular work week,” the notion that workers are adjusting at an hourly margin cannot be inferred. When the job consists of a “regular work week,” the hourly pay rate is not truly a marginal pay rate. It is the rate per hour paid on condition that the worker work the full regular work week. The margin the worker is adjusting to is the margin between one job and another, with the length of the work week as only one variable in the matrix of job qualities that a worker would consider in selecting a particular job. Put another way, because the worker is offered a job at regular pay for a specified work week on a take-it-or-leave-it basis, there is no real indication of the worker’s preferences at the 40 hour margin between labor market hours and non labor market hours. Instead, the fact that the job entails a 40 hour regular work week becomes a factor a worker would weigh in choosing this job over another job that might have a required regular work week of 37.5 hours.

The importance of the fixed length of the regular work week can be illustrated by an example based on a relatively common pay arrangement. Assume that a job offers a \$10 rate of hourly pay for a regular 40 hour work week working five days at 8 hours per day, but also offers an \$8 per hour pay rate for part time work doing the same job, but in units of half days only. Imagine that a given worker would prefer to work a 32 hour (and four day) work week if not for the higher pay rate for the regular pay rate, but prefers to earn \$10 per hour more than he or she prefers a four day week. (Assume also for the moment that fringe benefits and seniority are not affected by this choice.) What can be inferred from this is that the value of having working only four days instead of five days is worth less than \$144. By electing to work a regular work week instead of a partial work week of 32 hours, the worker is paid \$400 per week (40 hours x

\$10/hour) as compared with \$256 (32 hours x \$8/hour). The worker therefore gains \$144 by working the extra day even though the stated pay rate for that day would only be \$80.

Add to this example the additional assumption that the worker would have been willing to give up \$100 in pay to reduce the work week to four days and 32 hours, but is unwilling to do so since the actual cost would be \$144 in pay. One cannot conclude from this example that the marginal pay rate for the 40th hour can be reliably measured by one eighth of \$100, which would be \$12.50 per hour. By not working the 40th hour, the worker does not get an extra day off, but rather a fifth day of seven hours instead of eight hours. From the standpoint of non market uses of time, the individual might not be willing to give up even the \$10 per hour regular pay rate to gain the benefit of getting to go home one hour earlier. There are many things one can do with non labor market time in blocks of whole days that one cannot do with an extra hour at the end of the work day on Friday. Time, in short, is valued in chunks and not as continuous units that can be regularly and easily converted to simple hourly values. In this sense, the regular hourly pay rate for a regular work week is a misleading indicator of the opportunity cost value of time.

The Implications of Mandatory Requirements for Non-Regular Time

In the same sense that the regular work week imposes “take it or leave” it choices on workers, there may also be mandatory requirements with some employments that part or all of work time must be provided at non regular hours. This can include mandatory overtime, mandatory labor at “odd hour” shift times or mandatory work on holidays. By federal law, mandatory overtime (defined as time in excess of 40 hours per week) must be compensated at least time and a half , though some employers offer even more. Some employments involve requirements that workers will provide some amounts of time at odd hours and some workers are

hired specifically to fill job slots at odd times of the day. Even in cases where premiums exist, employers may be using a mixture of “carrot” and “stick” incentives to have workers provide work when it is most valuable to employers. A worker who is paid premium pay for mandatory night shift work might still prefer not to work the night shift even with the premium, but be less disgruntled because the premium pay differential does exist. However, the existence of mandatory requirements that a worker work at odd hours or overtime along with pay premiums for doing so means only that the true value of time traded for the premium hourly pay can be will be higher than the premium pay rate to the extent that the mandatory requirements force the worker to provide labor at the premium pay rate.

The Demand Side of Premium Pay Rates

For premium pay to exist, conditions on both the demand side and on the supply side of the market for labor must justify any premiums that exist. While it may seem obvious, the existence of premium pay must imply that the value of labor services is greater to employers at some times than at others and in some quantities rather than others. Few jobs exist that allow workers to work as many hours as they prefer and at times they prefer. It is valuable to employers to be able to coordinate the time blocks during which workers That is one important reason for why employers are willing to pay higher weekly pay to “regular” workers higher pay than “part time” workers, even if the part time workers are equally efficient in providing services. The value of service time delivered in blocks and at times that are convenient for employers would typically be greater than the value of service time delivered in blocks and at times that are convenient for workers. However, having time that is provided when demand for the employers’ product is high is also of extra value to employers, who are thereby induced to offer overtime pay.

Likewise, being able to maintain production schedules at off times is also of value to employers, resulting in a willingness to pay shift pay and holiday pay.

The “Moonlighting” Issue

Even for most types of jobs with hourly pay rates, premium pay does not exist. Workers have no choices about the amounts of time that are required and are hired on the basis of a regular expected work week, but with paid holidays and paid vacations as part of the employment package. This is the case for any type of employment for which there is no advantage to the employer in running the work place during times other than the regular work week. In such work place environments, it is useful to the employer to have all workers work the same regular work week, but overtime options would only exist in extreme circumstances that might not occur for many years. The work place is open for the regular work week and closed and locked in evenings and on weekends. In such circumstances, if a worker wishes to work more than the regular work week, the worker must take a part time job in evenings or on weekends. That part time job will pay less, often substantially less, than the regular work week job. In such circumstances, does it follow that the value of non market uses of discretionary time is measured by the rate of pay in the best available moonlighting job?

It is important to distinguish between workers who do and do not take moonlight jobs in such circumstances. Workers who do take moonlight jobs are revealing that the value of time spent in moonlight jobs is greater than non market uses of that time. However, the only thing that can be inferred about the value of time to workers who do not take moonlight jobs is that the value of discretionary time must be greater and perhaps substantially greater than the rate of pay available in moonlight jobs. That information provides a lower bound, but without a reliable

marginal value, and is not particularly useful. What is important is what is revealed by workers who do take moonlight jobs at lower than regular pay rates, which is more revealing.

Whether the rate of pay in a moonlight job reveals useful information about the value of non market uses of discretionary time depends on the reasons for the moonlight job. At one extreme, consider this example: The worker had the opportunity to work at overtime in his regular job at \$25/hour, but has chosen to take a moonlight job at \$8/hour. What is revealed in this circumstance is that the utility value of time spent in the moonlight job must be greater than the utility value spent in the regular job by at least \$17 per hour. At the other extreme, consider this example: The worker had no opportunity to work extra hours at his regular job that paid \$16 per hour, does not apparently like his moonlight job that pays only \$8/hour, but has a great need for money. The worker's reservation wage for his labor might be even less than \$8, but the market value is \$8/hour. In this case, what is revealed is that the value of discretionary time is less than or equal to \$8/hour.

Melville Z. Wolfson's Contribution

The origin of this paper was a fundamental insight from Melville Wolfson [1999] that overtime pay provides an indication into the value of lost leisure. Wolfson thought that this insight could be used to project values that are not captured in standard personal injury projections of damages. Wolfson had become convinced that the courts were not accepting the hedonic damages methodology because it was not specific to individual workers. On that basis, Wolfson thought that the courts were more likely to accept a "bottoms up" approach in which the derivation of leisure losses was grounded in labor market information specific to an individual worker.

This writer viewed Wolfson's overtime argument as a very fundamental insight, but approached its use in a different way. First, overtime is not the only type of premium pay that existed. Shift pay, weekend pay and holiday pay is also at a premium rate. Second, the insights to be gained from premium pay do not apply only to "leisure," but also to other types of discretionary uses of non labor market time. This is particularly true of the most valuable part of family services--guidance, care, counsel and educational services, particularly those provided by parents to children. Those services can only be provided when relevant other family members are present, which is an important part of the explanation for shift pay, weekend pay, and holiday pay differentials and also, though perhaps to a lesser extent, for overtime pay. Third, Wolfson's proposed use of the overtime pay concept was for valuing leisure time. Wolfson had not specified circumstances in which claims for lost leisure time might be made in tort actions. This author felt that for the concept to be useful in forensic economics, it must be shown how it could be applied in specific cases. Wolfson had agreed with that goal of the current paper, but was not able to participate in its development because of his premature death.

Relevance of Pay Differentials in Litigation

This paper has suggested the compensation rates in the labor market may provide a good deal of information about the value of time spent in non labor market uses of time. Wolfson's sense that such information could be used to specifically value "lost leisure" is probably irrelevant. In wrongful death litigation in most states, there is no right of recovery for leisure opportunities lost by a decedent. In personal injury actions, there is no tradition of making separate valuations for lost leisure. Perhaps more importantly, unless a personal injury reduces life expectancy, there is no reduction in the amount of available time. There is only a reduction in the number of options

for how that time can be used. A loss of options is clearly a loss to an injured worker, but a methodology based on premium pay rates would not provide insight into the reduction in the value of time because of the loss of options.

Krueger, Ward and Albrect [1996, 1999] have suggested a potentially more useful approach in going back to the legal concept of “earning capacity.” In its broadest sense, discretionary time corresponds to time an individual could have sold in the labor market. As such, the labor market value of earning capacity viewed in this way would be equal to the earning capacity of an individual even though most individuals would never consider selling all discretionary time in the labor market. Arguments can be made that the legal concept of earning capacity should not be extended to such a broad interpretation, but doing so does at least fit the legal definitions of damages that forensic economists are called upon to address. This writer takes no position on whether it would be useful to make this argument, but such an argument seems more likely to succeed than trying to invent a damage category called “lost leisure.”

The other important application of this concept lies in wrongful death litigation. If an opportunity cost approach is used for valuing lost family services, it is important to recognize that the opportunity cost value of lost family services may be, in some circumstances, significantly greater than the decedent’s regular hourly wage rate. If a worker has forgone premium pay to provide family services at odd shift times, on weekends and on holidays, the value of those services must have been in excess of regular pay rates (adjusted for taxes and job-related fringe benefits). Conversely, if a worker worked a moonlight job at lower than regular pay, it *may* indicate that family services did not have a value to the family as great as the regular hourly pay rate. It may also mean that the moonlight job was taken for reasons of the decedent’s personal

enjoyment, but it may be possible to establish the reasons why the decedent had been working at the moonlight job.

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