



# The double whammy in calculating loss of earning capacity

*Reduced earnings and reduced employment rates are a double whammy in calculating loss of future earning capacity for an injured person with permanent limitations*

By JOSEPH T. CROUSE

The “double whammy” of reduced earnings and reduced worklife expectancy must always be considered in a proper analysis of lost future earning capacity for a person with permanent limitations from an injury. Earnings and employment data emanating from U.S. government surveys provide vast information about the experiences of persons with disabilities in the labor market.

Two facts, however, stand out about workers with disabilities who work year-round and full-time. They experience (1) lower earnings *and* (2) lower levels of labor force participation and employment compared to their counterparts without disabilities. This article focuses on the projection of the future loss of earning capacity for individuals with permanent limitations who still retain a residual ability to work.

## Human capital

An individual’s lifetime earning capacity is his or her power to work and earn money in the competitive labor market. The two components of lifetime earning capacity are *how much* an individual earns annually and *how long* an individual is employed (worklife expectancy). Following a permanent injury, an individual with a disability may suffer either a diminution or total destruction of lifetime earning capacity. This article focuses on the former. It demonstrates how use of expert analysis and testimony can most reasonably represent the individual’s future post-injury earning capacity and

worklife expectancy with and without disability.

Earning capacity is synonymous to what economists term *human capital*. Capital is anything that produces wealth. It can be \$10,000 invested in a certificate of deposit earning interest or a landscaping business investing in four lawnmowers. Human capital is an individual’s stock of knowledge, skill, and understanding that results from education, training, and experience. This knowledge, skill, and understanding function as capital since they allow an individual to sell his or her services in the labor market in exchange for compensation which, in turn, builds wealth.

Intelligence and physical ability are the most fundamental precursors to the development and efficient utilization of human capital. Every occupation requires some degree of both intelligence and physical ability. If an individual suffers an injury that reduces cognitive or physical ability, it may be harder for that individual to acquire additional human capital or to efficiently utilize his or her pre-injury stock of human capital. As a result, individuals with a disability often experience a double whammy: both reduced earnings and reduced employment rates. Many government surveys from the U.S. Department of Labor and Bureau of the Census support this double whammy effect for individuals with disabilities.

## Disability and the American Community Survey

Disability is defined by the Americans with Disabilities Act (ADA) as “a

physical or mental impairment that substantially limits one or more major life activities.” Generally, disability can be thought of as the loss or reduction of ability from a baseline. The American Community Survey (ACS) from the U.S. Census Bureau, the largest annual survey in the United States, provides a wealth of information concerning individuals with disabilities.

Importantly, the survey allows a researcher to compare the employment levels and earnings of the populations with and without disabilities. Further-more, the population with disabilities can be disaggregated by functional limitation and degree of severity. These qualities make the ACS data the “gold standard” in measuring lost earning capacity following a permanent impairment. Of the limitations tracked by the ACS, our discussion will focus on data for those with cognitive or mobility disabilities using data from the 2009-2013 surveys.

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- In cases involving cognitive disability, we utilize ACS data where a respondent to the survey answers the question: “Because of a physical, mental, or emotional condition does this person have serious difficulty concentrating, remembering, or making decisions?”
- In cases involving mobility disability, we utilize ACS data where a respondent to the survey answers the question: “Does this person have serious difficulty walking or climbing stairs?”



When a person meets the ACS definition of either cognitive or mobility disability, their human capital is typically reduced. They are likely to have reduced access to jobs in the competitive labor market, and their productivity when employed will likely be impaired. The government data are also clear about persons with a disability: (1) when working year-round, full-time, they earn less, on average, than their counterparts without a disability, and (2) they typically work less over their lifetime than their

counterparts without a disability. The data also allow us to consider severe cognitive and mobility disabilities; a disability is considered severe when problems with self-care or going outside the home are also reported.

The ACS contains multiple levels of educational attainment that can be utilized in computing both average earnings figures and worklife expectancy values. Here we present only two levels of educational attainment, high school graduate and baccalaureate degree.

### Earnings

Individuals with either a cognitive or mobility disability typically earn less than their counterparts without a disability. Table 1 provides the median earnings figures for individuals without a disability and individuals with either a non-severe cognitive disability or a non-severe mobility disability. These earnings figures are medians for full-time year-round workers aged 25-64 in the San Jose – San Francisco – Oakland, California combined statistical area, and are stated in 2015 dollars. As is apparent, cognitive disability as well as mobility disability significantly reduce earnings for males and females across various levels of educational attainment. These figures all pertain to non-severe disabilities. The disability effect would be much greater if the data pertained to a severe disability.

### Worklife Expectancy

An individual's worklife expectancy is the "how long" of lifetime earnings. It tells us the number of years of future earnings that should be considered when estimating a loss. A worklife expectancy can be either assumed (e.g., to Social Security or retirement age) or statistically measured. Worklife expectancy, when statistically measured, is an average that combines the probabilities of life, participation in the labor force, and employment rates. It adjusts for periods when an individual may be out of the labor force. It is driven by variables such as age, gender, education, and disability status.

Table 2 provides worklife expectancy values for persons with no disability, persons with a non-severe cognitive disability, and persons with a non-severe mobility disability. The worklife expectancy values take into account periods of unemployment and life events where an individual may not be in the labor force or employed (e.g., lay-offs, raising a family). Worklife expectancy tends to increase with higher levels of education. Individuals with either a non-severe

**Table 1: Median Earnings for Full-Time Year-Round Workers (San Jose – San Francisco – Oakland, CA combined statistical area)**

	No Disability	Non-Severe Cognitive Disability	Non-Severe Mobility Disability
<i>Males</i>			
High School Graduate	\$43,000	\$38,000	\$42,000
Baccalaureate Degree	\$94,000	\$79,000	\$87,000
<i>Females</i>			
High School Graduate	\$38,000	\$28,000	\$37,000
Baccalaureate Degree	\$73,000	\$60,000	\$67,000

**Table 2: Worklife Expectancies for 35-Year-Old Persons**

	No Disability	Non-Severe Cognitive Disability	Non-Severe Mobility Disability
<i>Male Worklife Expectancy</i>			
High School Graduate	25.0 yrs.	11.5 yrs.	11.6 yrs.
Baccalaureate Degree	28.0 yrs.	15.4 yrs.	18.8 yrs.
<i>Female Worklife Expectancy</i>			
High School Graduate	21.7 yrs.	10.3 yrs.	12.3 yrs.
Baccalaureate Degree	24.1 yrs.	14.9 yrs.	18.9 yrs.



**Table 3: Calculation of The Loss of Future Earning Capacity**

	Pre-Injury	Post-Injury
Average Earnings	\$54,178 + 30.4%	\$39,495 + 25.9%
Worklife Expectancy	25.0	11.6
Lifetime Earnings	\$1,766,203	\$576,801
Lifetime Loss	\$1,189,402	

cognitive disability or a non-severe mobility disability experience a substantial decline in worklife expectancy as shown in Table 2.

The statistically average female has a lower worklife expectancy than the statistically average male. This results primarily from the ACS combining two different populations: females that are career-driven and those that opt not to work outside of the home. It is important to consider a female's pattern of employment to determine whether a female exhibits a pattern of work more like that of the average female or the average male. Otherwise, it would be unfair to reduce a female's worklife expectancy by 4 to 5 years.

### Loss of Future Earning Capacity

Before any analysis of lost earnings is conducted, permanency of impairment must be established by a medical professional. Most importantly, that impairment must translate into some limitation associated with performing work. The analysis proceeds in a five-step process to assess the lifetime loss of future earning capacity if the requirements are met:

1. Determination of pre-injury annual earning capacity
2. Determination of pre-injury worklife expectancy
3. Determination of post-injury annual earning capacity
4. Determination of post-injury worklife expectancy
5. Present value calculation of the loss

In estimating the loss of future earning capacity, an analyst can choose to use

the individual's actual pre-injury and post-injury earnings in steps 1 and 3, or a proxy such as the statistical average earnings for an educational group as is presented in Table 1. The analyst must also determine the pre-injury and post-injury worklife expectancies either statistically as in Table 2 or assumed to a certain age. Lastly, an economist typically performs a present value calculation of the loss. (Note: This simplified computation correctly states the present cash value of an individual's lifetime earnings if the economist opines that the rate of future growth in earnings is equal to the interest rate. Debate or discussion of whether this is the appropriate opinion is beyond the scope of this article.)

Consider a 35-year-old male, Robert, with a high school diploma who functioned as a pipefitter for the previous 10 years with the same company. He sustained injuries to his hip, leg, and knee as a result of a motor-vehicle collision occurring at the beginning of 2013. As a result, he has broad limitations and has changed occupations. He has worked as a bus driver for the last two years. Prior to the injury, he earned \$48,000 in 2010, \$50,000 in 2011, and \$53,000 in 2012 as shown in his Social Security earnings statement. After averaging and adjusting these figures to 2016 dollars, his pre-injury earning capacity can be reasonably represented by \$54,178. In the last two years Robert has earned \$38,000 and \$39,000 at his new job. His post-injury earning capacity is reasonably represented by \$39,495 (again, restated to 2016 dollars).

Next, his worklife expectancy is calculated as 25.0 years pre-injury and 11.6 years post-injury as in Table 2. Robert's fringe benefit rate was 30.4% as a pipefitter and 25.9% as a bus driver. His loss of lifetime expected earnings is calculated by finding the difference between multiplying his pre-injury earning capacity (after accounting for fringe benefits) by his pre-injury worklife expectancy and multiplying his post-injury earning capacity (after accounting for fringe benefits) by his post-injury worklife expectancy.

This is completed as follows: Loss = (\$70,648 X 25.0 years) – (\$49,724 X 11.6 years) = \$1,189,402. Table 3 succinctly presents the steps involved in the calculation of the loss of future earning capacity.

### Conclusion

Every survey that has studied the impact of disability on employment demonstrates a double whammy effect for individuals with a disability: on average, they earn less and work less than their counterparts without a disability. Using data from the U. S. Census Bureau, we have demonstrated significant lifetime impacts from each of these prongs that, when combined, lead to a substantial loss of future earning capacity even when the individual retains residual ability to work.



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