

# The use of SIPP data for determining future earnings capacity regarding children with disabilities.

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*This paper shows a practical application of data from the Survey of Income and Program Participation (SIPP) in order to estimate lost future earnings capacity in the case of children with disabilities.*

## Introduction

Forensic economists are often asked to give opinions regarding the lost earnings capacity of children who have been victims of medical malpractice before, during or after birth or because of injury during childhood. This analysis is complicated due to the lack of earnings history. These cases are particularly difficult when we are dealing with children who are 'not severely disabled' and/or have disabilities in more areas of functioning than one, which are called domains. However, reasonable approaches can be developed which will help juries decide an appropriate award for damages.

One such approach relies heavily on the Americans with Disability Act (ADA). This act defines a person with a disability as a person who: "has a physical or mental impairment that substantially limits one or more major life activities, has a record of such an impairment, or is regarded as having such an impairment." Major domains of activity are identified in which disability may occur. These domains include Communication, Physical and Mental.

The ability to work is clearly a major life activity that can be affected by impairments in any of the identified domains. A person is considered to have a work disability if he or she has a functional limitation which prevents them from working or which limits the kind and/or amount of work they can do. Various governmental surveys and publications including The Survey of Income and Program Participation (SIPP), The National Health Interview Survey (NHIS) and the Current Population Survey (CPS) have measured and documented the effects of disability on work.<sup>1</sup> Consistently, as compared to the non-disabled, the disabled are found to have significantly lower levels as to rate of employment, participation in the labor force, full time employment and mean monthly earnings. Persons can be grouped by level of disability such as 'severe' or 'not severely disabled.' Although the differences in these two groups is a matter of degree, in general very few persons with severe disabilities tend to work. Persons with not severe disabilities are able to work but they are limited in the kinds and/or the amount of work they can do. There is also a strong relationship between the number of domains affected by disability and earnings. Persons with disabilities in two or more domains have lower earnings than persons with a disability in only one domain. Under provisions of the ADA, employers must make reasonable accommodations to the work place so that persons with disabilities can participate in the work force. If the accommodations allow the person to perform a particular job, this person is not considered to have a work disability.

However, if the person with a disability is unable to perform an essential function of the job even with accommodations, the employer is not required to provide employment.

Longitudinal studies of children with disabilities demonstrate that they earn less as adults than children with no disabilities.<sup>11</sup> As with adults, the first step in the analysis leading to an opinion regarding future lost earnings is medical testimony, which identifies medically determined impairments. Medical opinions regarding the likelihood of the identified impairment functionally limiting the child when he/she becomes an adult are also imperative.

Before the forensic economist can perform a future lost earnings analysis it must be determined to what degree the child is likely to meet ADA criteria as an adult. It is therefore important for the economist to work closely with a Vocational Expert (VE) who is familiar with the Americans with Disabilities Act and has experience with children with disabilities. With this background, the vocational expert can give an opinion as to whether the medical limitations will likely result in a work impairment when the child reaches adulthood. The vocational expert can determine whether it is likely that the child when reaching adulthood will meet the ADA definition of having a disability, whether the impairment is likely to cause a work disability, whether this disability will be severe or not severe and whether the disability will be in one or in more than one domain.

By developing biographical data the Vocational Expert who has experience with children can make reasonable predictions about the possible future earnings capacity of the child if not for the disability. Such predictions can be based on the assessment of the early functioning of the child, reaching developmental milestones, school records, achievement and/or IQ testing performed before the injury and the educational and professional background of the parents. With this type of data the vocational expert can often predict that the child, without the injury would have been likely to function vocationally as well as the average non-disabled adult.

With the firm basis of the opinions of the vocational expert, the forensic economist then applies data which translates the child's limitations and the predicted level of future disability into economic terms. One source of such data is the Survey of Income and Program Participation (SIPP).

1997 data from the SIPP show estimates for the US population for earnings and employment status by different disability statuses. The SIPP is the only household survey that obtains regular information on employment status and collects information on disability status that is adequately consistent with the ADA definition of disability. It is therefore the best data available to estimate lost earnings of persons who meet the definitions of the ADA.

The survey makes estimates for a population of over 152 million individuals. It gives information on the number of people employed, the employment percentage, their median earnings, mean earnings and their standard errors. A great number of disability statuses can be found on the SIPP page of the census web site in Table 2. "Disability Status, Employment, and Annual Rate of Earnings: Individuals 21 to 64 years old." Subclasses are made by level of severity of the disability, benefits received and the type of disability.

Next we will discuss two cases. The first case will demonstrate the loss of earnings capacity for a boy who is likely to be classified as not severely disabled as a result of an automobile accident. The second case will demonstrate the loss of earnings capacity of a girl who suffered disabilities in two domains due to medical mal-practice.

**Case 1. 'not severe' vs. 'no' disability**

John sustained a closed head injury in an automobile accident at age seven while he was in the second grade. His parents are both college graduates and his older siblings function above average in school. School records indicate that John was perceived as a bright student who achieved at the 75 percentile on standardized tests during the first grade. The vocational expert opined that it is likely that, without the effects of the accident, John was likely to have functioned at least as well as the average non disabled adult from a vocational point of view. After the accident John's school functioning deteriorated. He was eventually identified as a student with a learning disability, given an Individual Education Program (IEP) and support in regular education classes. Although this support was helpful, John continued to show significant lags in his academic functioning. The vocational expert opined that John met the ADA definition of being a person with a disability and it was likely that he would be considered to be a person with a disability as an adult. The VE further opined that, considering his level of functioning with support, it was likely that John would be considered to be an adult with a 'not-severe' disability. In other words, a person who can work but who will be limited in the kind and/or amount of work he will be able to do. Thus, the forensic economist could contrast the earnings capacity of the average person with no disability to the average person with a 'not-severe' disability.

Exhibit 1 shows 1997 estimates regarding disability status, employment in thousands, and annual rate of earnings for individuals between 21 and 64 years old.

Exhibit 1

Disability status	Total	Employed		Median Earnings		Mean Earnings	
		Number	Percent	Value	St. Err.	Value	St. Err.
With disability	27,721	13,922	50.2%	\$17,667	\$ 425	\$23,402	\$ 735
Severe	17,318	5,393	31.1%	\$13,234	\$ 653	\$18,582	\$ 806
Not severe	10,403	8,529	82.0%	\$20,469	\$ 508	\$26,449	\$ 1,078
No disability	125,165	105,694	84.4%	\$23,645	\$ 157	\$31,045	\$ 393

The economist can calculate the lost future wages as follows:

The economist can use the value of the mean annual earnings for a person with a 'not-severe' disability status and deduct this amount from the mean annual earnings of a person with 'no' disability in order to calculate John's annual lost earnings. Assume that John would be able to earn \$31,045 per year in 1997 dollars, if not for the automobile accident.

However, as a result of his disability, it can be predicted that he is likely to earn less. The mean income for persons with a 'not-severe' disability is \$26,449. Thus, it can be estimated that John will lose \$4,596 per year over his work life expectancy. Starting at age 18, his work life expectancy is 39.1 years.<sup>iii</sup> Therefore, his total future lost earnings capacity would be \$179,704 in 1997 dollars.<sup>iv</sup> For the purpose of this paper the offset method is used.

Exhibit 2.

John's age	7
Work-life expectancy	39.1
Annual Loss	\$ 4,596
Earnings no disability	\$ 1,213,860
Earnings not severe disability	\$ 1,034,156
Lost Earnings using Offset	\$ 179,704

There are other methods that can be used to estimate the lost earnings capacity. The data may allow for an analysis using the Life, Participation and Employment (LPE) method. This could include the different employment percentages for each disability status reported by SIPP. However, this discussion is beyond the scope of this paper.

**Case 2. Disability in several domains vs. no disability.**

Consider the case of Sarah. She is a four year old child who was a victim of medical mal practice in utero. Her parents are high school graduates. Her two siblings function normally. The vocational expert opined that, it is likely that, without her impairments, she would have at least the earnings capacity of the average "non" disabled person.

Sarah has documented limitations in several areas that have been caused by the mal-practice. Although she has average intellectual potential, she has been functioning in the mildly mentally retarded range which is in the mental domain. Evaluations of her functioning in the communication domain indicate that she has significant deficits in receptive and expressive language. Her overall adaptive behavior is very low.

Clearly this child meets the ADA definition of being a person with disabilities. She has limitations with impairments in two domains. Individually, these disabilities are significant. However, in combination, they present a formidable obstacle to her future development. Numerous recommendations have been made which would, if effectively administered, potentially reduce her level of disability. However, even under the best of circumstances it is unlikely that she will ever function as a "non-disabled" person. She most likely will be considered to have a work disability; i.e., she may be able to work but she will be limited in the kinds and /or amount of work she will be able to do. She will likely have a reduced earnings capacity as an adult. The medical mal-practice led to disabilities in two other domains, the 'mental' and 'communicative.' Thus, the forensic economist can use SIPP data to compare the future lost earnings capacity of persons with 'disabilities in two domains' versus the earnings capacity of persons with 'no' disabilities

The SIPP data show that individuals with disabilities in one, two or three domains have lower employment rates and lower median and mean earnings compared to persons

with no disabilities. The domains include 'communication,' 'physical' and 'mental disabilities.' It follows that the mean earnings of a person with a disability in one domain are 21% lower than a person with no disability. A person with a disability in two domains earns 23% less than a person with no disability. Finally, a person with a disability in three domains earns 45% less than a person with no disability

Exhibit 3.

Disability Status, employment, and annual rate of earnings: individuals 21 to 64 years old.

Disability status	Total	Empl.		Median Earnings		Mean Earnings	
		Number	Percent	Value	St. Err.	Value	St. Err.
With disability in one domain	16,921	9,782	57.8	\$18,614	\$ 506	\$24,491	\$ 959
With disability in two domains	7,371	2,964	40.2	\$15,763	\$ 738	\$20,655	\$ 878
With disability in three domains	2,017	368	18.2	\$13,231	\$ 2,576	\$17,209	\$ 2,235
No disability	125,165	105,694	84.4	\$23,645	\$ 157	\$31,045	\$ 393

In this case, Sarah's work life expectancy is 32.8 years as of the age 18. The mean earnings of a person with no disability is \$31,045 in 1997 dollars. Earnings with a disability in two domains are \$20,655. Therefore, the annual loss of earnings capacity is \$10,390. Using the offset method, Sarah's lost earnings capacity is \$340,792 over a period of 32.8 years.

Exhibit 4

Sarah's age	4
Work-life expectancy	32.8
Annual Loss	\$10,390
Earnings no disability	\$1,018,276
Earnings disability in 2 domains	\$677,484
Lost Earnings using Offset	\$ 340,792

**Summary**

The authors believe the Survey of Income and Program Participation (SIPP) is the best source to estimate the lost earnings capacity of children who suffer from some level of disability. The survey offers a great deal of detail from which many different scenarios can be developed. The SIPP is the only household survey that obtains regular information on employment status and periodically collects information on disability status that is largely consistent with the ADA definition of disability. It is therefore more useful than the Current Population Survey(CPS). This survey is designed to measure changes in employment status. The CPS was not intended to identify the population that would be considered to have a disability under the ADA definition. Nevertheless, no data base is perfect. Several

authors noted statistical weaknesses in the SIPP, including questions about the reliability of the disability data and time-in-sample bias.<sup>v</sup>

SIPP data are particularly useful for children who typically have no history of earnings. It could also be used effectively with students and adults who have not established a clear career path and/or earnings record. The authors believe that as more of the individual's vocational and earnings history becomes available these data typically become a better source to assess the subjects future functioning and earnings potential. Therefore, when dealing with adults who have an earnings history a more traditional approach would be advisable.

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<sup>i</sup> <http://www.sipp.census.gov/sipp/>; <http://www.bls.census.gov/cps/cpsmain.htm>;

[http://www.cdc.gov/nchs/about/major/nhis\\_dis/nhis\\_dis.htm](http://www.cdc.gov/nchs/about/major/nhis_dis/nhis_dis.htm)

<sup>ii</sup> Mary Wagner, Ronald D'Amico, Camille Marder, Lynn Newman and Jose Blackorby, "The Second Comprehensive Report from the National Longitudinal Transition Study of Special Education Students," US Department of Education, 1992, P. 4-29

<sup>iii</sup> Hugh Richards and John R. Abele, "Life and Worklife Expectancies," Lawyers & Judges Publishing Company, Inc., 1999, P. 172 -173

<sup>iv</sup> Please note that fringe benefits are not included in this analysis.

<sup>v</sup> John M. McNeil, "Employment, Earnings, and Disability," 75<sup>th</sup> Annual Conference of the Western Economic Association international, 2000.

**Abstract: The use of SIPP data for determining future earnings capacity regarding children with disabilities.**

Forensic economists are often asked to give opinions regarding the lost earnings capacity of children who have been a victim of medical malpractice before, during or after birth or because of injury during childhood. This analysis is complicated due to the lack of earnings history. These cases are particularly difficult when dealing with children who are not severely disabled and/or have disabilities in one or more areas of functioning. However, reasonable approaches can be developed which will help juries decide an appropriate award for damages.

Various governmental surveys and publications including The Survey of Income and Program Participation (SIPP), The National Health Interview Survey (NHIS) and the Current Population Survey (CPS) have measured and documented the effects of disability on work. This paper discusses the application of SIPP data in two practical cases.

The authors believe the Survey of Income and Program Participation (SIPP) is the best source to estimate the lost earnings capacity of children who suffer from some level of disability. The survey offers a great deal of detail from which many different scenarios can be developed. The SIPP is the only household survey that obtains regular information on employment status and periodically collects information on disability status that is largely consistent with the ADA definition of disability.

SIPP data are particularly useful for children who typically have no history of earnings. It could also be used effectively with students and adults who have not established a clear career path and/or earnings record. The authors believe that as more of the individual's vocational and earnings history becomes available these data typically become a better source to assess the subjects future functioning and earnings potential. Therefore, when dealing with adults who have an earnings history a more traditional approach would be advisable.