

## CASE STUDY 30:

### The Valuation of Economic Damages\*

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## LEARNING OBJECTIVES

After completing and discussing this case, you should be able to understand:

- Learn how to calculate economic damages.
- Appreciate the importance of litigation services.
- Understand how to gather personal injury information.
- Defend a fundamental valuation of economic damages.

## INTRODUCTION

A litigation support service that forensic accountants provide is estimating economic damages due to an injury. Preparing a valuation of economic damages embraces a unique confluence of accounting, economics, and finance. The analysis of the loss of earning capacity for individuals arises from a variety of legal cases involving the need to estimate financial damages due to personal injury, employment discrimination, wrongful termination, and wrongful death. The different types of economic damages cases share common fundamental elements in estimating an individual's loss of earnings, but they are differentiated by methodological variations in the damage estimate itself.

For example, economic damages due to a personal injury would most likely include estimated lost earnings, lost fringe benefits, lost household services, and medical expenses. Wrongful death calculations, however, would be reduced by the decedent's personal consumption over their projected lifetime – and this would reduce the residual damages for the heirs. On the other hand, employment discrimination or wrongful termination proceedings valuation of damages would include the estimated time a plaintiff would need to catch up to the previous earnings.

The most common approach to gathering the necessary information to calculate these losses is through a fact-finding questionnaire, interview, or a letter of request. The needed information usually includes:

- Personal information such as the date of injury, level of education, marital status, race, age, and dependents.
- Pre-injury/death employment and earnings.
- Fringe benefits received.
- Post injury earnings and the likelihood of future employment.
- Household services provided before the injury/death and after the injury/death.

The objective of this case study is to illustrate the application of how to estimate personal economic damage calculations. This case estimates the value of economic damages due to a personal injury. The next section introduces the facts of the case.

### CASE SUMMARY

The focus of this case is to provide a fundamental valuation of economic damages due to a personal injury. The aim is to restore the injured party to the position he or she would have otherwise been in had the injury not occurred.

The facts of the case are as follows: Jane Doe suffered an injury on 06/30/X1 at the age of 44.50. Due to the gravity of her injuries she had to quit her job at *Company A* immediately. She remained out of work until six months later when she was able to secure a new job that accommodated her disability at *Company B* on 01/01/X2.

Prior to Jane Doe's injury, her annual salary at *Company A* was \$30,000, and her wages were growing annually at the average rate of inflation (3.35%). In addition to Jane Doe's base salary, she also received fringe benefits (e.g., health insurance, social security) in the amount of 14.50% of her base salary.

During the six months that Jane Doe was unemployed she did not receive any remuneration (i.e., short-term disability, unemployment). Jane Doe secured an alternate job at *Company B* on 01/01/X2 that catered to her permanent physical limitations. Her annual salary at *Company B* was \$19,500. Her salary at *Company B* was expected to grow at the average rate of inflation (3.35%). In addition to her base salary at *Company B* she received limited benefits in the amount of 10.50% of her base salary.

### ASSIGNMENT

A law firm has hired you as the forensic accountant to prepare a calculation of economic damages due to the injury that Jane Doe sustained. For purposes of this assignment, the following guidance and assumptions have been provided:

1. Despite Jane Doe's injury, she expects to continue working until the age of 65. Your objective is to calculate the economic damages that Jane Doe will experience over her work-life expectancy (age 65) due to lost wages and benefits.
2. Published statistics illustrate that Jane Doe's life expectancy, based on her age and education, is 85 years of age.
3. As a result of Jane Doe's injury, she can no longer perform household services. Legal counsel has asked you to calculate the amount of economic damages needed to replace the loss of household services over Jane Doe's remaining life expectancy.
4. Jane Doe's trial date is scheduled on the two-year anniversary of her injury. Economic damages calculated from that date forward will need to be discounted to present value.

Enclosure A - Economic Damage Assumptions	
Name of Injured	Jane Doe
Sex	Female
Date of Personal Injury	June 30, XXX1
Age at Date of Personal Injury	Age - 44.50
Age at Date of Trial	Age - 46.50
Worklife Expectancy	Age - 65.00
Life Expectancy	Age - 85.00
Growth Rate	3.35%
Tax Rate	25.65%
Benefits as a % of Annual Salary	14.50%
Company A	10.50%
Company B	4.80%
Risk of Unemployment	4.50%
Discount Rate (Risk-Free Rate of Return)	
Income	\$ 30,000.00
Wages: Annual Salary at Company A (Pre-Injury)	\$ 19,500.00
Wages: Annual Salary at Company B (Post-Injury)	
Household Replacement (Average per/hr)	\$ 14.50
Food Preparation / Housekeeping Workers (Average per/hr)	520 Hours
Replacement Hours per year (10 hours p/week x 52 weeks)	\$ 7,540.00
Annual Household Replacement Cost (520 x \$14.50)	
Present Value Formula:	$\frac{\text{Net Economic Damages}}{(1 + \text{Discount Rate})^{\text{Time From Date of Trial}}}$

**ENCLOSURE B - PROJECTED INCOME**  
**PRE INJURY EARNING CAPACITY BEFORE DISCOUNTING**

		(a)	(b)	(c)	(d)	(e)	(f)
Period by Age		Projected Gross Wages	Taxes	Fringe Benefits	Net Economic Benefit	Risk of Unemployment	Projected Income Age 44.50 - 65.00 Before Discounting
From	To						
44.50	45.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
45.00	46.00	-	-	-	-	-	-
46.00	46.50	-	-	-	-	-	-
46.50	47.00	-	-	-	-	-	-
47.00	48.00	-	-	-	-	-	-
48.00	49.00	-	-	-	-	-	-
49.00	50.00	-	-	-	-	-	-
50.00	51.00	-	-	-	-	-	-
51.00	52.00	-	-	-	-	-	-
52.00	53.00	-	-	-	-	-	-
53.00	54.00	-	-	-	-	-	-
54.00	55.00	-	-	-	-	-	-
55.00	56.00	-	-	-	-	-	-
56.00	57.00	-	-	-	-	-	-
57.00	58.00	-	-	-	-	-	-
58.00	59.00	-	-	-	-	-	-
59.00	60.00	-	-	-	-	-	-
60.00	61.00	-	-	-	-	-	-
61.00	62.00	-	-	-	-	-	-
62.00	63.00	-	-	-	-	-	-
63.00	64.00	-	-	-	-	-	-
64.00	65.00	-	-	-	-	-	-

- (a) Projected gross wages that Jane Doe would have earned, but for the injury, would have grown each year by the average rate of inflation.
- (b) Jane Doe's effective tax rate, which includes Federal, State, Social Security & Medicare taxes, would have reduced her gross wages had an injury not occurred.
- (c) Working condition fringe benefits that Company A would have provided to Jane Doe, but for the injury, would have been in addition to her gross wages.
- (d) The net economic benefit that Jane Doe would have earned, but for her injury, represents her gross wages adjusted for taxes and employer provided, working condition fringe benefits. The net economic benefit represents the income stream that would be subject to loss in the event of unemployment, had an injury not occurred, and had she remained employed with Company A.
- (e) The risk of unemployment for private industry workers in the same field as Jane Doe (Company A & Company B are in the same industry) have an unemployment rate that you derived from the US Department of Labor Statistics. The risk of unemployment reduces the net economic benefit.
- (f) The net economic benefit adjusted for the risk of unemployment represents the income that Jane Doe was projected to earn through worklife expectancy had she not suffered from a personal injury.

**ENCLOSURE C - PROJECTED INCOME**  
**POST INJURY EARNING CAPACITY BEFORE DISCOUNTING**

Period by Age		(a)	(b)	(c)	(d)	(e)	(f)
		Projected Gross Wages	Taxes	Fringe Benefits	Net Economic Benefit	Risk of Unemployment	Projected Income Age 44.50 - 65.00 Before Discounting
From	To	\$	\$	\$	\$	\$	\$
44.50	45.00	-	-	-	-	-	-
45.00	46.00	-	-	-	-	-	-
46.00	47.00	-	-	-	-	-	-
47.00	48.00	-	-	-	-	-	-
48.00	49.00	-	-	-	-	-	-
49.00	50.00	-	-	-	-	-	-
50.00	51.00	-	-	-	-	-	-
51.00	52.00	-	-	-	-	-	-
52.00	53.00	-	-	-	-	-	-
53.00	54.00	-	-	-	-	-	-
54.00	55.00	-	-	-	-	-	-
55.00	56.00	-	-	-	-	-	-
56.00	57.00	-	-	-	-	-	-
57.00	58.00	-	-	-	-	-	-
58.00	59.00	-	-	-	-	-	-
59.00	60.00	-	-	-	-	-	-
60.00	61.00	-	-	-	-	-	-
61.00	62.00	-	-	-	-	-	-
62.00	63.00	-	-	-	-	-	-
63.00	64.00	-	-	-	-	-	-
64.00	65.00	-	-	-	-	-	-

- (a) Jane Doe secured alternate employment six months after her injury earning lesser wages. Those wages are projected to grow each year by the average rate of inflation through Jane Doe's worklife expectancy.
- (b) Jane Doe's effective tax rate, which includes Federal, State, Social Security & Medicare taxes, reduces her gross wages.
- (c) Working condition fringe benefits that Company B is projected to provide Jane Doe are in addition to her gross wages.
- (d) The net economic benefit that Jane Doe is projected to earn/receive with Company B represents her gross wages adjusted for taxes and employer provided, working condition fringe benefits. The net economic benefit represents the income stream that would be subject to loss in the event of unemployment.
- (e) The risk of unemployment for private industry workers in the same field as Jane Doe (Company A & Company B are in the same industry) have an unemployment rate that you derived from the US Department of Labor Statistics. The risk of unemployment reduces the net economic benefit.
- (f) The net economic benefit adjusted for the risk of unemployment represents the income that Jane Doe is projected to earn through her worklife with her alternate employment at Company B.

**ENCLOSURE D - HOUSEHOLD REPLACEMENT COST  
BEFORE DISCOUNTING**

Period by Age		(a) Cost to Replace Household Services
From	To	
44.50	45.00	\$ -
45.00	46.00	-
46.00	46.50	-
46.50	47.00	-
47.00	48.00	-
48.00	49.00	-
49.00	50.00	-
50.00	51.00	-
51.00	52.00	-
52.00	53.00	-
53.00	54.00	-
54.00	55.00	-
55.00	56.00	-
56.00	57.00	-
57.00	58.00	-
58.00	59.00	-
59.00	60.00	-
60.00	61.00	-
61.00	62.00	-
62.00	63.00	-
63.00	64.00	-
64.00	65.00	-
65.00	66.00	-
66.00	67.00	-
67.00	68.00	-
68.00	69.00	-
69.00	70.00	-
70.00	71.00	-
71.00	72.00	-
72.00	73.00	-
73.00	74.00	-
74.00	75.00	-
75.00	76.00	-
76.00	77.00	-
77.00	78.00	-
78.00	79.00	-
79.00	80.00	-
80.00	81.00	-
81.00	82.00	-
82.00	83.00	-
83.00	84.00	-
84.00	85.00	-

(a)

On average, prior to her injury, Jane Doe performed approximately 10 hours per week on household tasks. After her injury, Jane Doe could no longer perform any of her household tasks. You researched the Occupational Employment Statistics Survey which publishes mean hourly wages for household workers in the same county that Jane Doe resides. Each year, the replacement cost is projected to grow by the average rate of inflation.

ENCLOSURE E - TOTAL ECONOMIC DAMAGES						
PAST & FUTURE ECONOMIC DAMAGES (DISCOUNTED TO THE TRIAL DATE)						
Period by Age		(a) Projected Income Pre Injury	(b) Projected Income Post Injury	(c) HH Replacement Value	(d) Net Economic Damages	(e) Time from the Date of Trial
From	To					
44.50	45.00	\$ -	\$ -	\$ -	\$ -	\$ -
45.00	46.00	-	-	-	-	-
46.00	46.50	-	-	-	-	-
Total Past Economic Damages (I):						\$ -
46.50	47.00	-	-	-	-	0.50
47.00	48.00	-	-	-	-	1.50
48.00	49.00	-	-	-	-	2.50
49.00	50.00	-	-	-	-	3.50
50.00	51.00	-	-	-	-	4.50
51.00	52.00	-	-	-	-	5.50
52.00	53.00	-	-	-	-	6.50
53.00	54.00	-	-	-	-	7.50
54.00	55.00	-	-	-	-	8.50
55.00	56.00	-	-	-	-	9.50
56.00	57.00	-	-	-	-	10.50
57.00	58.00	-	-	-	-	11.50
58.00	59.00	-	-	-	-	12.50
59.00	60.00	-	-	-	-	13.50
60.00	61.00	-	-	-	-	14.50
61.00	62.00	-	-	-	-	15.50
62.00	63.00	-	-	-	-	16.50
63.00	64.00	-	-	-	-	17.50
64.00	65.00	-	-	-	-	18.50
65.00	66.00	-	-	-	-	19.50
66.00	67.00	-	-	-	-	20.50
67.00	68.00	-	-	-	-	21.50
68.00	69.00	-	-	-	-	22.50
69.00	70.00	-	-	-	-	23.50
70.00	71.00	-	-	-	-	24.50
71.00	72.00	-	-	-	-	25.50
72.00	73.00	-	-	-	-	26.50
73.00	74.00	-	-	-	-	27.50
74.00	75.00	-	-	-	-	28.50
75.00	76.00	-	-	-	-	29.50
76.00	77.00	-	-	-	-	30.50
77.00	78.00	-	-	-	-	31.50
78.00	79.00	-	-	-	-	32.50
79.00	80.00	-	-	-	-	33.50
80.00	81.00	-	-	-	-	34.50
81.00	82.00	-	-	-	-	35.50
82.00	83.00	-	-	-	-	36.50
83.00	84.00	-	-	-	-	37.50
84.00	85.00	-	-	-	-	38.50
Total Future Economic Damages (II):						\$ -
Total Economic Damages to Jane Doe (I + II):						\$ -

\* Adapted from vol. 8, no. 2, special issue, 2010 of *Journal of Forensic & Investigative Accounting*.



Enclosure F - Summary of Economic Damages Due to Personal Injury on June 30, XXX3 Jane Doe		
Total Past Economic Damages	\$	Reference
Total Future Economic Damages (at Present Value)		Enclosure E
Total Economic Damages	\$	Enclosure E
		Enclosure E
* Adapted from Vol. 8, No. 2, Special Issue, 2016 of <i>Journal of Forensic &amp; Investigative Accounting</i> .		