

Back Pay and Front Pay Calculations in Employment Termination Cases

*Accounting for re-employment and
mitigation efforts*

Back Pay and Front Pay Calculations in Employment Termination Cases: Accounting for re-employment and mitigation efforts

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Prepared for presentation at:

University of Texas at Austin School of Law

The 15th Annual Labor and Employment Law Conference

Austin, Texas

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Introduction

Most plaintiffs in employment termination cases will ultimately become re-employed. However, for some plaintiffs the termination of their employment produces significant economic damage to their earnings, retirement pension, and fringe benefits. For other plaintiffs, an employment termination causes little to no measurable economic harm. The individual plaintiff's efforts and ability to regain comparable replacement employment is often the key difference between the two types of plaintiffs.

The goal of this article is to provide a conceptual and practical discussion of the factors that comprise a standard economic damage model in an employment termination case. In this paper, we discuss the economic factors and assumptions that comprise an economic damages model in an employment termination case. We also provide a discussion of the valuation of employee fringe benefits and employee stock option valuations. Background on the concept of discounting and check lists that can be used to gather information in an employment cases are also provided in this paper.

The economic damage model in an employment termination case

A typical economic damage analysis of the plaintiff's lost earnings in an employment termination case involves three main parts. The first part of the economic analysis involves determining the earnings, fringe benefits, and retirement income that the terminated employee would have received had he or she not been terminated by the defendant. The actual determination of the projected non-termination earnings, or what is frequently referred to '**but-for earnings**', is made by examining factors such as the person's earnings history, level of educational attainment, the labor market potential of similarly situated persons, and employer specific factors.

The second phase of the economic damage calculation involves determining the amount of income that the person can now expect to earn in their current or expected replacement employment. Similar to but-for earnings calculations, factors such as the past earnings and the plaintiff's labor market potential are considered when calculating the expected earnings of the plaintiff.

The third portion of the economic damage calculation generally involves determining the present value of any future economic losses. Conceptually, the present value calculation involves determining how much money would have to be deposited in a relatively safe investment today to compensate the plaintiff for the dollar income losses that the plaintiff is expected to experience over the relevant portions of the person's work life. The amount to be deposited in a safe investment, such as a U.S. treasury security, is called the **present value** of the future stream of income.

The underlying premise in the present value calculation is that a dollar received tomorrow is worth less than a dollar received today, because a dollar received today can be invested, or deposited in a bank account today that will earn interest, until the time the money is needed. To calculate the present day value of the plaintiff's economic damages, the economist uses actuarial tables, work life tables, interest rate data, and if relevant tax tables.

In employment termination cases, the economic damages are generally split into two parts called back pay and front pay. Back pay is generally defined as the losses that the plaintiff incurs from the time that the employment termination occurred to the date of trial or other significant date, such as the date of report analysis. Back pay is typically calculated as the difference between the earnings that the plaintiff could have been expected to earn at the employer/defendant and the actual and/or expected earnings from replacement employment. Interest is usually not included in the economist’s calculation of back pay losses since pre-judgment interest is typically determined by the court. Depending on the jurisdiction, income taxes may or may not be taken in to consideration in the analysis.

Front pay losses are the difference between the future wages that the plaintiff would have been expected to have earned at employer/defendant and their current expected future replacement earnings. Since the plaintiff would not have earned the wages until some point in the future, these projected earnings are discounted by an appropriate interest rate discount factor and may take into account income taxes. Figure 1 shows the different components of the economic damage model.

Figure 1: Economic Damage Model in Employment Termination Case

Damage Time Period	But-for Employment at Defendant	Actual and Expected Replacement Employment	Damage Component
<p>T_0: Date of termination</p> <p>T_1: Date of analysis (report or trial)</p>	<p>Part A: But-for expected past earnings from date of termination (T_0) to date of analysis (T_1).</p>	<p>Part B: Actual or expected past replacement earnings from date of termination (T_0) to date of analysis (T_1).</p>	<p>Back Pay = A - B</p>
<p>T_N: End of damages period</p>	<p>Part C: But-for expected future earnings from date of analysis (T_1) to end of damage period (T_N).</p>	<p>Part D: Expected replacement earnings from date of analysis (T_1) to end of damage period (T_N).</p>	<p>Front Pay = C - D</p>
<p>Plaintiff’s Loss = Back Pay + Present Value(Front Pay)</p>			

But-for Past Earnings v. Past Replacement Earnings

As shown in Figure 1, the first factors in employment termination model are the back pay components. In terms of but-for past earnings, the first step is to analyze and study the wages, commissions, and non-wage earnings. Non-wage earnings include benefits such as employee stock options, Social Security employer payments, life insurance, and retirement income that the

plaintiff would have been expected to receive had they not been alleged wrongfully terminated. In a wrongful termination case where the damages stem solely from the loss of employment, the determination of but-for past earnings may be a relatively straightforward exercise of calculating the amount that the individual would have earned had they stayed employed at the defendant up until the time of the analysis or date of trial.

Alternatively, in more complicated cases such as when the plaintiff is alleging that the defendant has retaliated against them as well as wrongfully terminated them, the economic damage analysis may be more involved. For instance, in an employment termination case where there are allegations of employer retaliation, the analysis may have to consider the potential impact of allegations such as the denial of a higher paying job position or unjustified negative job performance ratings that may have had an impact on the plaintiffs but-for earnings.

There are several generally accepted methods to calculating and projecting the but-for past earnings the plaintiff could have been expected to earn at the defendant/employer. These methods include the **historical earnings approach**, the **similarly-situated or company specific approach**, and the **Consumer Price Index (CPI) growth approach**. The historical earnings approach uses the plaintiff's historical wage information to project his or her but-for past earnings level. Use of the historical earnings methodology may be particularly appropriate in cases in which workers have a history of steady employment with the employer and a well-documented employment history. The historical earnings approach may involve using a relatively small swath of time such as the salary from the last few weeks or a longer time period such as the average of the last three to five years. For instance, for some sales related occupations it may be appropriate to use the average of the last two to three years of earnings because the incomes of individuals in these types of jobs vary with their sales. Alternatively for an individual in a job position that receives consistent wage and salary increases, such as individuals on a set government or union pay scale, using the last year's salary combined with the historical growth rate experienced by the individual may be the most appropriate estimate.

The similarly-situated or company specific approach works in the same way, but instead of using an individual's actual earnings history, earnings levels are based on the average earnings for a group of workers that are similar to the person in question. The comparison group may be determined using labor market data or employer specific data if it is available. This approach may be particularly appropriate in cases in which the plaintiff has been steadily employed within a single trade, industry or company, but an adequate history of earnings is not available. Earnings levels and but-for growth rate projections based on the similarly-situated or company specific approach typically use occupational information from sources such as government surveys, empirical state labor force commission labor market data, employer pay grades, and job ladder information. Generally speaking, because of differing labor demand, labor supply, and productivity factors, the average annual salary tends to vary across different occupational groups. However, similarly situated employees employed in similar labor markets tend to earn similar wages regardless of the employer.

For some individuals, company specific information may be more useful for calculating the plaintiff's but-for expected past earnings. For instance, for plaintiffs whose salary is based heavily on sales and commissions, the pipeline of sales prospects and opportunities that the plaintiff had in place at the time of the termination may be helpful for determining what they could have expected had they remained employed by the defendant. In cases, especially cases where the employment termination is part of a larger reduction in force and company

reorganization, the earnings opportunities that the plaintiff could have been expected to realize may be different from the opportunities that were in place when the plaintiff was employed at the defendant. During reduction in force actions and re-organizations, management structures, sales territories and department alignments are frequently altered. In these instances, the company information provided by the defendant could be insightful.

In contrast to the historical earnings and similarly situated or company specific approaches, the Consumer Price Index (CPI) growth approach simply assumes that the plaintiff's but-for earnings at the defendant/employer would have kept pace with actual inflation. As a result, this approach assumes that the plaintiff's earnings would not have experienced any actual real earnings increases, i.e. earnings increases above the rate of inflation, up until the time of trial. Figure 2 shows the actual inflation in the U.S. from 2000 to 2007.

Figure 2: Overall U.S. Inflation

	2000	2001	2002	2003	2004	2005	2006	2007
Inflation	3.44%	1.6%	2.48%	1.87%	3.29%	3.4%	2.53%	4.12%

Source: U.S. BLS, Consumer Price Index (CPI), All Items, 2000 to 2007.

Past replacement earnings, mitigation efforts, and labor market availability

The actual and expected past replacement earnings are the next component of the economic damage model. As stated above, the past replacement earnings are the amount that the plaintiff currently earns and/or is expected to earn in their replacement employment up to the time of trial or the date of the report analysis. In practice, there are actually two components to this analysis of past replacement earnings. The first part involves using the historical, company or CPI approaches described above to determine what the plaintiff has actually and can be expected to earn at their replacement employment. The second part of the analysis of the expected past replacement earnings involves studying the plaintiff's attempts to mitigate their earnings losses after their employment was terminated by the defendant.

The analysis of the plaintiff's attempt to mitigate their earnings losses involves determining how diligent the plaintiff was (or is) in attempting to obtain comparable replacement employment. Economists perform the analysis by making comparisons of the plaintiff's replacement employment and job search efforts to the experiences of typical similarly situated job seekers. The analysis that the labor economist perform is sometimes referred to as a **labor market availability analysis**.

The general approach to addressing the mitigation question begins by first studying the plaintiff's current job and the jobs in which the plaintiff applied for after the termination. In the study of the plaintiff's mitigation efforts the researcher will address questions such as:

- Do the post-termination jobs held or applied for by the plaintiff have similar responsibilities as the one held by the plaintiff while employed with the defendant?

- Are the post-termination jobs held by the plaintiff, full-time or part-time positions? How does this compare with the plaintiff's employment with the plaintiff?
- Is the plaintiff's earnings potential at the post-termination jobs similar to the job held at the defendant's company?
- Are the post-termination jobs held and applied for by the plaintiff consistent with the plaintiff's knowledge, skills, and abilities?

Information regarding the plaintiff's job search efforts is often important. Job search effort information includes job logs submitted to a workforce agency, emails to potential employers, internet applications, deposition testimony, and discovery response answers. Figure 3 provides some sample questions that are useful in obtaining information regarding past employment. Information checklists and forms can be found at the end of this paper.

Figure 3: Example Interrogatory Questions Concerning Past Employment

Questions
1. Identify each employer for whom you worked with since last employed by the defendant
2. If you are no longer employed by an employer identified state when the employment ended and why
3. State the job duties, wages and responsibilities that you had at each employer identified
4. Describe and state how much earned from any self-employment since leaving the defendant
5. Identify anyone with whom you have sought employment since you were last employed by the defendant
6. State whether you rejected or declined in accepting any offer of employment since last employed with the defendant.
7. For any jobs that you turned down state the reason and the wage that would have received

As mentioned above, a labor market availability analysis of the number and types of jobs available to a plaintiff is multi-faceted. Generally speaking the analysis involves matching to the individual plaintiff's **knowledge, skills, and abilities (KSA)** to the types of jobs that are available in the relevant labor market. The definition of the relevant labor market for the plaintiff tends to differ by the type of occupation. For some occupations, the plaintiff's relevant labor market may be geographically defined by the city or Metropolitan Statistical Area (MSA) while other occupations have labor markets that are national in scope. Some types of jobs, such as attorneys, doctors, teachers and police officers, are limited, at least in the short term, by professional certification boards. In these types of occupations, the plaintiff could need to

undertake additional training or take additional state specific qualification or certification test to be able to obtain replacement employment in alternative area.

Regardless of the labor market, the transferability of the plaintiff's skills and knowledge may be somewhat limited, especially in the short term, if they are employed in a specialized occupation within a specialized industry. Assembly and production workers in specialized industries such as the semi-conductor and electronics manufacturing industries are examples. Conversely the KSAs required for some occupations, such as computer network administrators, may make the transferability of the plaintiff's skills to other occupations relatively easier.

To determine the appropriate set of jobs for the plaintiff a number of different labor market data sources are used. These data sources include commercial salary survey databases, industry and trade group salary surveys, state labor workforce commission data, Bureau of Labor Statistics (BLS) occupational data, and the Department of Labor's O-NET data project. A labor force availability case study examples is presented in the next section.

But-for future earnings vs. replacement future earnings

After the analysis of back pay, the next component of the analysis is front pay. As with back pay, the analysis compares the earnings that the plaintiff would have received had they remained employed with the defendant and the earnings that they can now expect going into the future. The front pay analysis methodology is similar to the discussion on back pay and labor force availability discussed in the previous section. However unlike back pay, front pay losses are discounted by a risk-free interest rate discount factor and may (or may not) take into account income taxes. In addition, if it is determined that the plaintiff has incurred a future earnings loss, the front pay analysis needs to account for the length of time in which the economic losses stemming from the employment termination can reasonably be expected to continue over the plaintiff's future working life.

Some academic and professional studies suggest that over time many, but not all, individuals who lose their jobs ultimately obtain employment that pays them approximately what they were earning before the termination occurred.¹ Additionally, empirical data on employee job tenure suggest that even if the alleged wrongful termination did not occur, the plaintiff would have likely worked for the plaintiff for a relatively limited time period.² In any event, an analysis of front pay losses in an employment termination case needs to account for these types of factors.

To illustrate a front pay analysis in more detail, consider the following labor market availability example case study analysis shown in Figure 4.

¹ See for example, Jacobson, Louis S & LaLonde, Robert J & Sullivan, Daniel G, 1993, "Earnings Losses of Displaced Workers," American Economic Review, American Economic Association, vol. 83(4), pages 685-709, William Carrington, 1993, Wage Losses for Displaced Workers, The Journal of Human Resources, Vol. 28, No. 3 (Summer, 1993), pp. 435-462 September, and David Macpherson and Michael Piette, 2003, "Do Terminated Employees Catch Up? Evidence from the Displaced Workers Survey, Journal of Forensic Economics 16(2), pp. 185-189

² See U.S. Bureau of Labor Statistics, Job Tenure Supplement, 2000, 2002, 2004, and 2006 and Robert Trout, 2003, "Duration of Employment: Updated Analysis, Journal of Forensic Economics 16(2), pp.201-207

Figure 4: Case Study Example

Labor Market Availability Case Study

In brief

The labor market availability study in this example strongly suggested that had the plaintiff would in all likelihood experience little to no future economic loss. Based on the analysis of the relevant labor market, the data suggested that if the plaintiff were to diligently pursue replacement employment the plaintiff would in all likelihood obtain employment that paid as much or more than they were earning while employed by the defendant.

Background

In this case, the plaintiff, Ms. Susan Tejada, was employed as a human resources benefits analyst at a large computer software company. At the time of her termination, Ms. Tejada had worked as a human resources benefits analyst for over 15 years. The majority of the years she worked as an HR analyst she worked within the computer software industry. At the time of her termination she had worked about 7.5 years for the defendant. Since her employment ended at the defendant, over 2.5 years ago, Ms. Tejada has worked as a substitute teacher and part time contract compensation benefits analyst.

Analysis

Empirical data and the labor market studies show that the plaintiff has not performed an adequate replacement job search. Ms. Tejada stated in her deposition that since leaving the defendant's employment over two years ago, she had only submitted applications at five companies. Furthermore, she appeared to significantly limit her search geographically and does not appear to have pursued related and comparable job positions in industries outside of the computer software industry. While the number of applications a job seeker submits will tend to vary by the occupation and industry, job seekers can generally expect to submit more than five employment applications in a two year period during the job search process. Based on Mr. Tejada's deposition testimony, it appears that she has in part left the active labor market and is putting her efforts into starting a restaurant franchise.

Furthermore, the empirical labor market data shows that there is a strong demand for an individual with Ms. Tejada's skills. If Ms. Tejada were to choose to actively pursue replacement employment, in all likelihood she would be able to obtain employment that would provide her with earning opportunities that were comparable to her previous employer.

Specifically, at the national level, there is solid employer demand for human resource benefits analysts with skills similar to Ms. Tejada. Overall, the United States Bureau Labor Statistics (BLS) expects that demand for similarly situated human resource benefits analyst will grow over the next decade at least as fast as other occupations. Some industries that employ benefits analysts are expected to experience growth significantly higher than average. The BLS expects that individuals with professional designations and experience will have an advantage in the labor market. Ms. Tejada held several human resource certifications and holds a bachelors degree in business administration.

At the state level and local level, there is also documented employer demand for Mr. Tejada occupational skills. In fact the state labor force commission estimated that the average salary for experienced human resource benefits analysts was just about equal to what she was earning at the time of her termination. Moreover, the same data, as well as electronic job posting boards and want ads show that there are job openings that Ms. Tejada would have been at least minimally qualified, if not highly qualified, to hold. Popular job posting boards such as monster.com, hotjobs.com, America's job bank, and insurancejobs.com, careerbuilder.com, show listings for jobs that Ms. Tejada would have been qualified to at least apply.

On average, due in part to employer demand, the time it takes the average individual who is looking for work as a benefits analyst to find work is less than half that of other occupations. The average human resource

Labor Market Availability Case Study

benefits analyst in Texas can expect to find replacement employment within 7 weeks of a job loss. Overall, BLS data shows that employees can expect to find replacement employment within 17 weeks of a job loss. Similarly, the unemployment rate for benefits analysts is less than half of that experienced by workers overall.

In short, if Ms. Tejada were to diligently seek replacement employment she would in all likelihood incur little to no future losses associated with the cessation of her employment.

Note: The above analysis case study, including the discussion of the data, is hypothetical and not intended to represent the findings of any particular analysis or occupation.

While the above case presents a labor market availability analysis that reveals that the plaintiff in all likelihood incurred little to no economic damages, that is by no means always the outcome of this type of analysis. For instance, in contrast to the case example, some labor market and employment studies have shown that longer tenure employees who have accumulated a substantial amount employer specific human capital, i.e. knowledge and training, may experience persistent losses over some portion of their expected working life. In some of these instances, the plaintiff may find employment with an employer that has job responsibilities and career advancement opportunities that were similar to the employer who terminated them. However, the plaintiff, because of a lack of employer-specific seniority, may earn less money in the replacement employment. In some of these situations, it is possible that the earnings gap between the two essentially comparable jobs will persist over some period of time. In short, the economic damage model for each plaintiff is different.

How long do economic damage in employment termination cases go on?

In the event the plaintiff is projected to incur future economic losses, how long do the losses go on into the future? In some employment cases, it can be difficult to make economic assumptions that an individual plaintiff's losses will go on forever or even throughout the person's entire working life. There are a number of factors that could cause the economic losses to stop short of the plaintiff's expected work life. In some instances, the retirement plan of the employer may create situations where the plaintiff would have been able to receive full retirement benefits before they would have been statistically expected to stop working. In other instances, the average duration of employment for any given group of employees at the employer may be relatively short. In both of these scenarios, the alleged economic damages resulting from the employment termination would conceptually be shorter than the plaintiff's expected working life.

Alternatively, for some employees it may be reasonable to assume that the plaintiff's economic losses will continue over some significant period of the plaintiff's expected work life. For instance, government employees are more likely to have longer job tenure than private sector workers. Figure 5 shows the average duration of employment in some recent years.

Figure 5: Average Duration of Employment in Years

Type	January 2000	January 2002	January 2004	January 2006
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All Employees	3.5	3.7	4.0	4.0
Private Sector	3.2	3.3	3.5	3.6
Public Sector	11.5	11.3	10.4	9.9

Source: U.S. Bureau of Labor Statistics, Median years of tenure with current employer for employed wage and salary workers by industry, selected years, 2000-2006

Regardless of the time period length, if economic damages are estimated to occur into the future, the future but-for and replacement earnings level need to be calculated so that front pay losses can be determined. In practice, front pay losses, when they are relevant, deal primarily with future earnings growth. Similar to the discussion on back pay, there are several different approaches to projecting future earnings levels.

The approaches to estimating future salary growth include the historical, the similarly-situated/company specific, and the Consumer Price Index growth approaches discussed earlier. Figure 6 presents the annual salary growth for selected occupational groups. As shown in Figure 6, the average inflation-adjusted salary increase in Professional Specialty and Technical occupations is 1.3 percent for the years 1997 to 2004. During this same time period, however, Transportation and Material Moving occupational earnings actually *decreased* at a 0.5 percent annual rate when adjusted for inflation.

In addition to the above approaches, economists may project the plaintiff's future growth using the **life cycle earnings** approach. The life cycle approach assumes that the plaintiff's wages will follow a hump shaped curve.³ The life cycle curve states that on average, a person's wages will tend to increase more in earlier years of their working life. The life cycle earnings continue to increase throughout the middle years of earnings but the rate of increase generally slows down. In later years, the life cycle approach suggests a decreasing rate of earnings growth increases in later years. The major issue for future earnings is the growth as opposed to the earnings levels that were discussed earlier. Figure 7 presents the life cycle growth model for a hypothetical employee with a starting salary of \$50,000.

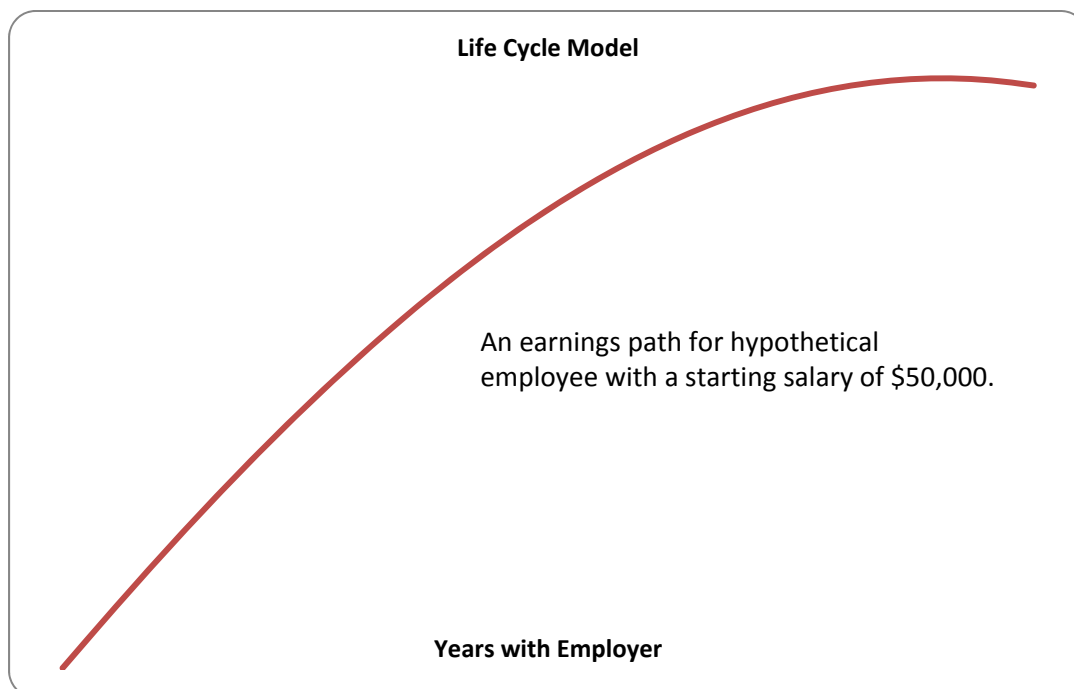
³ See Audrey Light, "Job mobility and wage growth: evidence from the NLSY79", Monthly Labor Review, 2005 and Gary Becker, "Investment in Human Capital: A Theoretical Analysis, Journal of Political Economy, Vol. 70, pp.9-49 for a discussion of the life cycle growth model

Figure 6: Inflation adjusted earnings growth rates for selected occupational groupings

Occupational Group	1997–2004 Growth Rate	2003–2004 Growth Rate
Professional specialty and technical	1.3%	0.9%
Machine operators, assemblers, and inspectors	0.8%	0.3%
Handlers, equipment cleaners, helpers, and laborers	0.8%	0.3%
Administrative support, including clerical	0.7%	0.5%
Precision production, craft, and repair	0.6%	0.3%
Executive, administrative, and managerial	0.3%	(1.9%)
Sales	0.1%	(1.6%)
Service, except private household	(0.1%)	(0.3)%
Transportation and material moving	(0.5)%	(1.1)%
Average across all occupations	0.4%	(0.3)%

Source: Bureau of Labor Statistics, *Major Sector Productivity and Costs Index*.

Figure 7: Earnings for hypothetical



Other economic damage factor considerations in employment termination cases

In addition to earnings, other types of compensation may be relevant when calculating employment termination damages. These other factors include fringe benefits such as health insurance and employee stock options. A discussion of these types of compensation as well as discounting is presented.

Valuing Fringe Benefits

Fringe benefits are the non-wage benefits that an employer provides to its employees. Employer-provided benefits include life insurance, health insurance, retirement benefits, social security contributions, unemployment insurance, and worker's compensation insurance.

In addition to these fringe benefits, some employers may provide monetary allowances for items such as work-related clothing and automobile expenses that may directly benefit the individual employee. While there may be tax considerations or other offsetting expenses to consider, the value of these types of employer-provided job-related fringe benefits should be included if they are relevant.

Employer-provided fringe benefits generally are valued by estimating the monetary benefit to the individual employee who receives them. Conceptually, the monetary benefit to the individual employee is the amount the person would have to be paid to replace the employer-provided fringe benefits. The replacement value of the employer-provided benefits could be

determined by calculating the amount it would cost the *employee* to obtain the benefits that they were provided by the employer before the injury or death occurred.

In practice, the valuation of the benefit that a person receives from employer-provided fringe benefits is performed by estimating the *employer's* direct cost of providing the benefits to the employee. The *employer's* direct cost estimate is used because it is difficult, or impossible in some instances, to determine the cost the employee would have to pay to replace the same fringe benefit package that the individual was receiving at the time of the injury or death. For instance, it is not usually possible for an individual person to buy unemployment insurance similar to the package offered by an employer.

A dollar value estimate can be obtained directly from the employer's records or government-collected labor market and employment data. More commonly, the economist uses government labor market and employment data to construct what is called a salary fringe benefit multiplier. A salary fringe benefit multiplier is a mathematical factor that shows the value of an employee's fringe benefits as a percentage of salary. The actual multiplier is based on the average cost of providing the benefits. Commonly used salary fringe benefit multipliers are derived from the U.S. Bureau of Labor Statistics (BLS) and other employer cost surveys.

For example, according to BLS studies and data, for a person working in a service sector job, the value of employer-provided health insurance, life insurance, and other non-wage fringe benefits is equal to approximately 18.7 percent of the person's salary. Figure 8 provides an example of the dollar value of the employer-provided benefits for employees in various sectors. Note that the dollar values for some fringe benefits, such as retirement benefits, may vary by income level, while other employer-provided benefits, such as health insurance, do not.

Figure 8: Value of employer paid fringe benefits in 2006 for selected employee groupings

Income Level	Service	Natural Resources	Production and Transportation	Sales
\$15,000	\$4,996	\$7,881	\$7,459	\$9,956
\$30,000	\$7,726	\$11,311	\$10,821	\$12,945
\$60,000	\$13,184	\$18,171	\$17,545	\$18,921
\$90,000	\$18,642	\$25,031	\$24,269	\$24,898
\$120,000	\$22,241	\$30,031	\$29,132	\$29,015

Source: U.S. Bureau of Labor Statistics, Employer Costs for Employee Compensation.

Valuing employee stock options

In some cases, the terminated plaintiff may have been in a job position that awarded employee stock options (ESOs). Other employees may have been enrolled in plans that made them eligible for participation in the employer's stock purchase plans. In this section, the basics of ESO's are discussed.

When a person is granted ESOs by an employer, that employee receives the right to purchase a set number of shares of the employer's stock at a predetermined price. The predetermined price is called the **grant price**. The employee generally must meet certain conditions before he or she can exercise the stock options, i.e. purchase the stock.

The employee usually must be with the employer for a certain amount of time, called a **vesting period**. Additionally, the employee's stock option rights expire within a set time period, usually within 10 years. The employee's stock purchase rights also generally expire after the person leaves the employment of the issuing company.

Subject to these restrictions, the employee may choose to purchase the employer's stock at his or her discretion. The employee makes money if he or she is able to exercise the stock option at the agreed upon price, and then sell the employer's stock at a higher market price. The employee does not have to exercise the option. As a result, employees are not at risk of losing money if the stock price does not exceed the agreed-upon purchase price.

Regardless of the type of ESOs, the issue in an employment termination case is to determine the value to the employee of having the right to purchase the company's stock. That is, **how much would a person pay for the right to purchase the ESO grant?** Keep in mind when valuing the ESO that the goal is not the value of the underlying stock, but instead, it is the value of the employee stock *option*. Clearly, the two are related, but are not the same.

The value of an employee's stock is a function of a number of factors. These factors include the employer's stock price, the grant price, and the exercise restrictions that the employer has placed upon the ESO grants. The value of an employee's stock option grant is affected by economic variables such as the interest rate in the economy, the employee turnover rate of the company, and the anticipated variability of the stock price. The value of the ESO will almost always be less than the market value of the stock option because of the exercise restrictions placed on the employee's ownership of the option.

In essence, the valuation of an ESO implicitly considers all the possible stock price outcomes that could occur and places a value on the ESO based on these possible stock price outcomes. The valuation is done using well-known mathematical models. Usually, the valuation of the stock options that the terminated employee would have received is derived using standard mathematical models such as the **Black-Scholes** or **Binomial Tree** model. These mathematical models return the value of each ESO that the person held at the time of their termination or that would have been awarded in the future. For some companies, the ESO value from these mathematical model valuations can be found in the company's filings with the Securities Exchange Commission.

Figure 9 shows the values of a hypothetical employee's stock option. This table presents the dollar value a person would pay for the right to purchase a share of the employer's stock, at the predetermined grant price, at some date in the next eight years. As the figure shows, the value of a single ESO changes as the grant price and the underlying price of the employer's stock change. Again, remember the value of the ESO is not the value of the employer's underlying stock, but, instead, it is the value of the employee's stock *option grant*. Also remember that the valuations are not simply the investment return derived from the difference between the grant price and the price of the employer stock price as of the day of the valuation. Instead, the valuation takes into account the range of likely investment returns given the stock price's volatility.

For instance, consider a hypothetical firm whose stock presently trades at \$10 per share. Further, the stock option grant price is \$5 and may be exercised at anytime within the next eight years. The value of such an ESO would be \$6.61.

This valuation takes into account the fact that if the person purchases the ESO, the employer's stock may or may not exceed the grant price over the next eight years that remain on the ESO. Intuitively, the lower the grant price, or predetermined purchase price set by the employer, the higher the price the hypothetical person would pay for the ESO.

Figure 9: Value of a single employee stock option

		Price of Employer Stock			
		\$1	\$5	\$10	\$20
ESO Grant Price	\$1	\$0.45	\$4.26	\$9.25	\$19.24
	\$5	\$0.05	\$2.23	\$6.61	\$16.32
	\$10	\$0.01	\$1.15	\$4.46	\$13.23
	\$20	\$0.00	\$0.41	\$2.30	\$8.93
	\$30	\$0.00	\$0.19	\$1.33	\$6.29
	\$40	\$0.00	\$0.10	\$0.83	\$4.59
	\$50	\$0.00	\$0.06	\$0.55	\$3.45

Table notes: The ESO grant price is the price at which the employee can purchase the employer's stock. The price of the employer's stock is the price at which the stock is trading in the stock market as of the day the ESO is valued. It is assumed that the option has vested at the time the ESO is valued and there are 8 years until expiration. The table does not include adjustments for such things as lack of company marketability.

Source: Value Line database; <http://pages.stern.nyu.edu/~adamodar/>

In addition to ESOs, it is also possible that the terminated employee was eligible for or participated in an employee stock purchase plan. Employee stock purchase plans allow the employee to purchase the employer's stock at a discounted rate. Employee stock purchase plans are valued in a similar fashion as ESOs since there is no guarantee that the stock price will remain at this level. Most employee stock purchase plans impose restrictions on reselling the stock purchased under the plan.

The discount on the stock price varies by employer, but it tends to be in the area of around 15 percent to 20 percent of the market price. With employee stock purchase plans, the employee makes money if he or she is able to sell the discounted stock in the future at a price higher than the purchase price.

In most employee stock purchase plans, there are usually certain restrictions on how soon and/or how much the employee can sell of the purchased stocks. There are valuation models for stock purchase plans. However, since participation in the plan requires a purchase on the part of

the employee, the potential value associated with participation tends to be lower than that associated with employee stock option plans.

Guidelines on employee stock options and employee stock purchase plans	
1.	Valuations based on the best case scenario of the employer's stock price are not very informative. Although the employee will not lose money, he or she may not necessarily make money as the employer stock price may not exceed the grant price during the allotted time in the option.
2.	An employee stock option that is currently "underwater," i.e. the grant price is higher than the market price, is not necessarily valueless. The option may still be valuable if there is sufficient probability that the stock price will increase in the future.
3.	All other factors remaining equal, the higher the volatility, i.e. the more the employer's stock price fluctuates, the higher the value of the employee stock option. This is because a naturally larger range of stock price values makes larger gains more likely.
4.	Most employee stock option plans will only vest a certain percentage of options per year.
5.	Most employee stock option plans will have a provision that terminates the option automatically within a set period, commonly 90 days, of a not-for-cause employment termination.
6.	Although grant prices are typically set at the end of a fiscal or calendar year, some employers have been known to use special rules for setting grant prices, such as backdating to the lowest price over a given window of time.

Interest rate discount factors and present valuing money

As discussed above, the third portion of the economic damage calculation in an employment termination case generally involves determining the **present value** of any future front pay losses. Conceptually, the present value calculation involves determining how much money would have to be deposited in a relatively safe investment today to compensate the plaintiff for the dollar income losses that the plaintiff is expected to experience over the relevant portions of the person's work life. The amount to be deposited in a safe investment, such as a U.S. treasury security, is called the present value of the future stream of income. The underlying premise in the present value calculation is that a dollar received tomorrow is worth less than a dollar received today, because a dollar received today can be invested, or deposited in a bank account today that will earn interest, until the time the money is needed.

To illustrate the concept of the present value of money, consider an example of a employment lawsuit in which a 62-year-old man whose employment was terminated. Assume, for the purposes of this example, that there is no issue of liability and the defendant is simply attempting to calculate the total value of the economic damages. Further, assume both sides have

agreed that the terminated employee lost \$50,000 per year at the time of his termination and will continue to lose that amount each year until retirement at the age of 65.

One way to determine the economic value of the lost wages in this example would be simply to multiply the amount the person was earning at the time of his employee by three years, which would mean that the defendant has caused a total of \$150,000 in economic damages to the plaintiff. This simplistic calculation is, of course, incorrect because the plaintiff would have earned the money over the course of three years. A lump sum in that amount would earn interest over the three years, resulting in an award greater than the amount needed to replace the lost future income.

The process of discounting requires an assumption as to how much interest the lump sum award would earn. This is a key assumption because the higher the assumed interest rate, the smaller the present value of the lump sum. Figure 10 provides an example of a present value calculation.

Figure 10: The present value of front pay losses

Year of Front Pay Loss	Front Pay Loss	Present Value of Front Pay Loss at the End of Year
2007	\$50,000	\$47,619
2008	\$50,000	\$45,351
2009	\$50,000	\$43,192
Total Present Value of 2007–2009 Front Pay Losses as of January 1, 2007		\$136,162

Appendix A: Checklist and guidelines for employment termination damages

Information typically needed

- Individual tax returns, such as 1040, 1040A, 3 to 5 years if available
- Business tax returns, such as 1120 and 1040 –Schedule C, 3 to 5 years if available
- Employer-provided pay statements
- IRS, W-2 wage, and 1099-Misc income statements, 3 to 5 years if available
- 401k balance statements, most recent
- Retirement plan summary plan description
- Employee stock option grant letters
- Stock option exercise letters
- Employee handbooks
- Social Security Administration SA earnings statements, most recent
- Job description (includes description of duties, responsibilities and relevant employer organization)
- Job ladders for relevant portion of employer
- Company, especially human resources, representatives depositions
- Job search logs
- Emails regarding job search and job applications

Guidelines on collecting information for lost earnings analyses in employment termination cases

1. When possible, documents should be collected directly from the government agency and employer. Not all employees maintain a full set of pay stubs or financial records for the required number of years.
2. Use multiple data sources to corroborate the financial picture. For example, use the 1040 tax return statement in conjunction with the W-2 wage and income statements. Looking at multiple sets of information allows for the separation of the income of multiple filers. Comparing the entries on both sets of documents will also enable the isolation and removal of income that is inappropriately reducing or increasing the subject's projected earnings.

3. Valuation of retirement accounts will generally require a detailed employee benefits handbook. Obtain the summary plan description for the retirement plan.
4. If possible, the cost of providing benefits should be directly obtained from the employer. The actual benefits data can provide an alternative to the standard salary multiplier measure, which is based on the average employer cost of providing benefits.
5. To obtain an accurate projection of earnings capacity, it is important to obtain information from the years that best describe the subject's earnings capacity during the time at issue. For some cases, this may be three years of historical data, but in other instances it may be the last three months of salary data if the subject just began a new job.

Appendix B: Economic Damages In-take Form for Employment Termination Case

Complete for both job position at time of termination and each employer since employment termination

Company name						
Hire date	Month	Day		Year		
Wage / salary at hire				Hourly	Weekly	Annually
Job title at hire						
Typical job duties at hire						
Termination date	Month	Day		Year		
Wage / salary at termination				Hourly	Weekly	Annually
Job title at termination						
Typical job duties at termination						
Union job?	Yes			No		
Hours worked per week						
Average tips per hour						
Health benefits	Yes	No		Unknown		
Dental benefits	Yes	No		Unknown		
Vision benefits	Yes	No		Unknown		
Life benefits	Yes	No		Unknown		
Defined contribution plans (401k plans)	Yes	No		Unknown		
Defined benefit plans (pension plans)	Yes	No		Unknown		
Employee stock options	Yes	No		Unknown		
Employee stock purchase	Yes	No		Unknown		