

# Employee Relations

## LAW JOURNAL

### **Navigating a Reduction in Force: Understanding the Economist's Perspective**

*Karyn E. Model, Elaine Reardon, and Christopher Haan*

*The authors discuss the current business environment regarding reductions in force (RIFs), provide a discussion of the laws under which RIFs are brought, discuss the economist's approach to the analysis of a reduction in force and the statistical methods used to determine whether or not a RIF is biased against protected groups, and present a simple example of a reduction in force statistical analysis.*

The state of the current business environment has resulted in reductions in force for a large number of industries. The recent problems with the mortgage industry resulted in a large number of layoffs in the financial and housing sectors. Last year, Countrywide Financial cut more than 11,000 employees and Bank of America cut 3,000 employees.<sup>1</sup> Other industries are struggling, too: United Airlines is planning on cutting a total of 7,000 jobs throughout the company<sup>2</sup> and Ford Motor recently announced plans to cut 2,000 salaried positions.<sup>3</sup> The Bureau of Labor Statistics reported 1,111 mass layoff events with a corresponding 188,326 workers separated from their jobs in the first quarter of 2008.<sup>4</sup> The large number of employees being affected by a reduction in force (RIF) is likely to increase the probability of legal actions taken against a firm, while the scale of the reductions can make it quite difficult to implement a RIF without having a disparate impact on one or more

Karyn E. Model, PhD, is Director, Economics, at Resolution Economics LLC. She has extensive experience in the application of economic and statistical analysis related to matters of litigation. Elaine Reardon, PhD, is a Senior Economist at Resolution Economics. Her research spans survey research methodology, labor economics, and applied microeconomics. Christopher Haan, PhD, is a Senior Economist at Resolution Economics. He has extensive research experience in the development and application of economic and statistical analyses to employment litigation matters. The authors can be reached at [KModel@ResEcon.com](mailto:KModel@ResEcon.com), [EReardon@ResEcon.com](mailto:EReardon@ResEcon.com), and [CHaan@ResEcon.com](mailto:CHaan@ResEcon.com), respectively.

protected groups. There are a number of federal, state, and local statutes under which a claim might be brought.

## **LEGISLATION RELEVANT TO REDUCTIONS IN FORCE**

Title VII of the Civil Rights Act of 1964, as amended, protects persons against employment discrimination on the basis of race, color, religion, sex, or national origin. It applies to employers with 15 or more employees in industries engaged in interstate commerce, also including federal, state, and local government. The law prohibits not only intentional discrimination but also job policies that have an unintentional disparate impact on protected groups and are not related to business or job requirements. Executive Order 11246 extended the protections of Title VII to employers doing business with the federal government, whether as contractors or subcontractors.

The Age Discrimination in Employment Act of 1967 (ADEA), as amended in 1986<sup>5</sup> and 1991<sup>6</sup> prohibits employment discrimination against people 40 years of age or older. It applies to employers of 20 or more employees in industries engaging in interstate commerce, as well as governmental agencies, employment agencies, and labor unions. Like Title VII, ADEA bars intentional discrimination as well as policies generating a disparate impact that are not justified by business or job requirements. Though the US Equal Employment Opportunity Commission (EEOC) enforces the law, most age discrimination cases are brought by private lawyers.<sup>7</sup> In fact, under the ADEA, residents of states with age discrimination statutes have 300 days to file a claim with their state employment practices office. In states without such statutes, residents have 180 days to file with the EEOC.

Title I of the Americans With Disabilities Act (ADA) protects disabled employees against discrimination in layoffs/firings and similar to the ADEA, applies to employers with 15 or more employees, state and local government, employment agencies and labor unions. Similar protection is extended to federal government employees by Section 501 of the Rehabilitation Act, as amended.

The Civil Rights Act of 1991 amended the Civil Rights Act of 1866, also known as Law 42 U.S.C. Section 1981, which stated that all persons, regardless of race, are allowed to make and enforce contracts, regarding employment as a contract. The 1991 law clarified that “make and enforce” meant not only the contract at the time of hiring but also working conditions thereafter as well as contract termination. It barred the business requirement defense against charges of intentional discrimination, expanded the scope of remedies plaintiffs could seek, and placed a cap on damages. It also addressed how disparate impact claims were to be handled.

Disparate impact discrimination occurs when purportedly racially neutral practices have a disproportionate impact on protected groups.<sup>8</sup>

The biased impact must be shown statistically. Plaintiffs must also identify specific policies that cause an adverse impact to the extent that those policies are separable.<sup>9</sup> Separability also means that employers cannot defend themselves by showing that overall, their selection criteria were neutral with respect to protected groups; rather, they must defend each criterion.<sup>10</sup> Employers must also show that their selection criteria related to protected characteristics are job related and due to business necessity. These can be objective criteria, such as professional licensing requirements, or subjective, such as supervisors' evaluations of work performance. Such criteria, however, must be shown to address important aspects of the job that are critical to its success. They may not include such considerations as customer or coworker preference for certain race employees.<sup>11</sup> It was recently decided that employers bear the burden for showing that their justification in an ADEA case is reasonable.<sup>12</sup>

Disparate treatment discrimination occurs when race is the motivating factor behind an employment decision. The racial bias can be conscious and deliberate or it can be the result of an unconscious reliance on stereotypes.<sup>13</sup> RIFs lend themselves to pattern and practice claims because many employees are involved. Statistical analyses are used to support the argument that the discrimination is a standard operating procedure affecting the entire class of employees.<sup>14</sup>

States and municipalities also have legislation regarding employment discrimination. Their definition of protected groups can vary. Some states are more expansive than others. For example, the California Fair Employment and Housing Act prohibits discrimination based on sexual orientation.<sup>15</sup> Idaho uses the same categories as the federal laws but its age discrimination laws apply to companies with five or more employees<sup>16</sup> rather than the federal size designation of 20.

## **STATISTICAL ANALYSIS OF RIFS**

Litigation surrounding mass layoffs frequently involves statistical analyses performed by economists and statisticians. This section discusses the statistical methods that are generally used in such analyses, as well as some of the steps that employers can take while navigating a RIF to ensure that they are in compliance with the law, *i.e.*, that their selections do not disproportionately disadvantage a protected group.

## **WHAT CAN THE EMPLOYER DO TO HELP ENSURE THAT A RIF DOES NOT DISPROPORTIONATELY IMPACT PROTECTED GROUPS?**

Employers can take preliminary steps to study and identify the potential areas in which a RIF might have a disproportionate impact on a protected group. By definition, RIFs affect many employees, as opposed to

individual level terminations, and therefore present an employer with a high potential for exposure to class-action litigations. The larger the RIF, the greater the need to take steps prior to implementing any terminations to identify possible problem areas.

Note that it is difficult, if not impossible, to foresee every possible permutation and combination of factors that might lead an individual worker, or group of workers to form the opinion that the protected group(s) of which they are a member has been disproportionately affected. Nonetheless, most companies maintain data which would allow a suitably trained expert to perform an investigation of what areas might be of possible concern.

In the end, it is usually not the specific statistical tests that are at issue when experts present their alternate theories of the case. It is much more likely that it is the assumptions underlying such analyses which will be disputed. Assumptions related to the RIF process—how the RIF was conducted; how RIF selections were made by whom, and when; the ultimate goals of the RIF; and the existence, if any, of legitimate business reasons that mitigate the impact of the RIF are all themes on which experts typically disagree. Therefore, the analyst's first priority is to have a complete and thorough understanding of the RIF as seen through the eyes of the employer, as well as the employee.

### **DATA REQUIREMENTS FOR A STATISTICAL ANALYSIS OF RIFS**

First, one must identify the available data that can be used to statistically evaluate the impact of a RIF. The most common source is from the company at issue's own day-to-day record keeping. Most companies maintain extensive Human Resources data systems which document everything that happens to a worker while he or she is employed by the company. Usually these data are kept in the form of "transactions." In this context, "transactions" means that a record is generated whenever an employment transaction occurs—such as hiring, promotion, pay changes, and possibly, termination. These data can be used to identify the populations within the firm that are available for RIF, and will provide information on who is retained by the company (a stayer) and who is laid off by the company (a leaver).

Companies keep other information related to their workforces, such as detailed performance evaluations, resumes and employment applications, and results of job training tests, among others. This information can often be converted into computer readable data and used by the analyst. However, one must be cautious when using information on subjective processes, such as performance evaluations, as explanatory variables in a RIF analysis. One might claim that the subjective nature of such evaluations causes the data to be "tainted." In other words, if the employer is operating in a discriminatory manner, the same

discriminatory animus that affected the RIF process might similarly affect the performance evaluation process. Therefore it is extremely important to understand the processes by which these types of data are generated in order to assess whether it is appropriate to use them in an analysis.

Once the sources of available data have been identified, there are a number of questions the analysis seeks to address through use of the data.

### **WHO MIGHT BE DISPROPORTIONATELY AFFECTED BY A RIF?**

It is most often the case that employees differ in their “availability” for termination. If employees were equally likely to be laid off, then one would expect that the number of terminations among a particular protected group to be proportional to the representation of that group in the workforce population. For example, if women make up 40 percent of a workforce, in the simplest case one would expect 40 percent of the RIFed employees to be female. In this case, the benchmark is “parity,” *i.e.*, the expected number of terminations is equal to the representation of the protected group in the population of interest.

However, there are often other confounding factors which can cause the benchmark to deviate from parity. For example, suppose an employer decided to eliminate a particular job group. In this case, it is obvious that only those in that particular job group are “available” for termination by the RIF. The analysis of a RIF must involve delineation of the population available to be laid off. Such sub-populations can differ significantly from the employer’s workforce as a whole. In these cases, the analyst might conduct what is called a “stratified” analysis, studying segments of each employee sub-population separately.

### **BY WHAT CRITERIA ARE EMPLOYEES SELECTED FOR RIFS?**

In the case of a RIF, the key is to analyze layoff probabilities among similarly situated employees. If all employees are equally likely to be laid off, but the analysis shows Hispanics are disproportionately laid off, then the claim may have some merit. If business needs require that some jobs are more likely to be cut back than others, then the impact of the layoffs on Hispanics has to be measured only among those employees in the relevant jobs. These characteristics may include, but are not limited to: job title, division, department, the decision-maker in charge of selecting employees for the RIF, job location, and exempt status. The reason these details matter is because it affects how the analysis is conducted. In particular, how employees are defined as “similarly situated.”

## **WHICH EMPLOYEES ARE SIMILARLY SITUATED?**

Similarly situated employees would be those who are identical with regard to all characteristics which relate to the RIF selection process. It is not valid to mix together employees who are not similarly situated with respect to their likelihood of termination. Once groups of similarly situated employees have been identified, one can put them into groups, or “pools,” and analyze the extent to which similarly situated pools of employees fare the same or differently in the RIF. Each pool will contain a group of employees who should have equal termination probabilities. If the pool has been properly defined and includes only similarly situated employees, then the within-pool benchmark is taken to be parity, *i.e.*, one should expect equal proportions of terminations for both the protected group and the unprotected group employees.

## **ARE THERE AGGREGATION ISSUES?**

One generally seeks to define the pools at a level of aggregation consistent with the decision-making process. However, the nature of statistics is such that as the number of observations increases (*i.e.*, the size of the pool increases), so does the probability of making a statistically significant finding. Small differences for a number of individuals can be magnified into large aggregate differences when they are added together. Therefore, the analyst should take steps to ensure that the employee pools identified for analysis are based on the decision-making process of the RIF.

It is not proper to aggregate for analysis all employees of a company simply because it will produce a significant result or expand the class. In other words, the pools should reflect reality as closely as possible. This requires careful study of the RIF process itself, the business rationale behind the RIF, and the decision-making process to identify RIF candidates.<sup>17</sup> In some cases, the RIF process might provide potential terminees with the option of applying for other, non-RIFed positions at the company. In others, the employer might offer a generous severance package to workers who volunteer to be RIFed. In the last case, the analyst would want to remove these volunteers from the pool for employees available for termination. However, in the case of incentives offered to induce workers to quit, one should also confer with counsel regarding the legality of such programs.

## **IS THERE A STATISTICALLY SIGNIFICANT IMPACT ON A PROTECTED GROUP?**

The first question economists and statisticians ask themselves when undertaking the analysis of a RIF is: What would be the expected outcomes of the RIF if discrimination were not present? In other words,

one seeks to quantify the number of terminations that would apply to a particular group (or groups) in a world free of discrimination. One then compares what was “expected” with what actually happened (the “actual” numbers of terminations), and conducts an analysis to determine if the difference between the actual and the expected outcomes can be deemed “statistically significant.”<sup>18</sup>

The results of most outcome-generating processes have a central tendency, which is called the “average” or the “mean.”<sup>19</sup> For example, when RIFs are conducted, one can calculate the average age of those who are RIFed, and those who are not. In the context of actual vs. expected outcomes, one would then seek to compare the average age of RIF terminees with the average age of those who are not terminated. In this case, the outcome-generating process is the RIF, and the outcome is the average age of those RIFed and not RIFed. In the absence of discrimination, and assuming that all workers are identical (this assumption will be relaxed later), one would expect the average age of terminees not to differ from the average age of those who were not terminated. In the real world, however, these two averages are unlikely to be identical, though they may be close.

It is the concept of statistical significance, which looks at the distribution of all possible outcomes and their probabilities,<sup>20</sup> that is used to determine if the difference between the averages is “large enough” to rule out the conclusion that the difference between actual and expected outcomes is due to discrimination or to random chance. If the analyst shows that these differences are due to random chance, *i.e.*, they are not statistically significant, this suggests that the terminations generated by the RIF were carried out in a nondiscriminatory fashion.

Economists and statisticians have developed methodologies which allow one to test whether or not differences between actual and observed terminations are due to random chance or not. This involves the calculation of a “standard deviation.” Standard deviations are standardized units which measure the relative dispersion of a particular outcome around the average (for example, average age plus or minus a certain amount). As such, one can then assess the resulting probability of the observed outcome’s occurrence, and determine whether that probability is small enough to conclude that the results provide evidence of a discriminatory process, or are simply due to random chance.

Economists and statisticians have traditionally used a standard of two standard deviations to indicate statistical significance. This corresponds to a probability of less than 5 percent that the difference between the actual and expected outcomes is due to random chance. The Supreme Court in *Hazelwood* determined that a range of two to three standard deviations is sufficient to make the finding that differences between actual and expected outcomes is large enough to rule out the possibility that the differences are due to random chance.<sup>21</sup>

## **STAYERS AND LEAVERS: THE SPECIAL CASE OF AGE DISCRIMINATION**

Most employees' individual characteristics do not change over time. Race and gender, for example, are usually fixed. As a result, employees who are members of a protected group will remain a member of that group for the duration of their lives. They will not move in and out of the group over time. Age, however, is different. For as time passes, people get older. Age, then, is a special case, because employees generally begin their careers before the age of 40, and for a time are not protected. However, when they turn 40, their status changes and they become protected under the ADEA.<sup>22</sup>

Analysis of matters alleging race or gender discrimination is more straightforward—employees can easily be put into groups by race or gender. However, some 40 and above employees may have worked for the employer long enough that they have spells of employment during which they are under-40 *and* 40 and above. To complicate matters further, some employees may turn 40 during the RIF.

One particular issue with the study of age discrimination is the fact that age may be correlated with several of the variables that define availability for being RIFed. Most notably, within a particular job grade, age may be correlated with performance. Consider a case where employees are hired into entry-level positions, and are promoted according to performance. Over time, the better performing employees will be promoted, leaving behind the poorer performers, who are at the same time aging. Under this scenario, one would expect to find that performance and age are correlated. Now suppose a company decided to conduct a RIF in which the lowest 10 percent of performers were to be terminated. If older workers make up 20 percent of the employees in a particular position targeted for RIF, that does not mean that one then should expect 20 percent of the terminations to affect older workers. If older workers are over-represented in the lowest 10 percent of performers as a result of lower performers not being promoted, one would also expect that older workers will constitute more than their pure representation suggests. Using the terminology from the section above, in this case the benchmark would not be parity. The benchmark would therefore have to be re-evaluated to incorporate the fact that older workers' availability for RIF exceeds their representation in the population due to their lower average performance within their job class.<sup>23</sup>

## **HOW IS THE DEFENSE OF BUSINESS REASONS EVALUATED FROM A STATISTICAL STANDPOINT?**

The analyst's job is to come up with a reasonable benchmark against which outcomes can be compared. Suppose that one wants to determine whether a particular RIF plan disproportionately impacts female employees. Suppose further that the employer has instituted a new requirement that supervisors have engineering degrees, and that the

addition of this requirement can be shown to have a valid business reason. When one looks at employees in this position, however, one finds that women are less likely to possess an engineering degree.<sup>24</sup> In this case, a simple benchmark of parity would potentially understate the expected number of terminations that would impact the female employees.

### **SIMPLE EXAMPLE OF A RIF STATISTICAL ANALYSIS**

Assume that Company XYZ is in the airline industry and employs 400 flight attendants and 200 pilots. Due to business conditions, the company must lay off 200 flight attendants and 100 pilots. If flight attendants are comprised of 240 employees age 40 or above (60 percent) and if older and younger employees share the same chance of layoff, then of the 200 flight attendants laid off, one would expect 120 of the laid-off flight attendants to be age 40 or above.<sup>25</sup> Similarly, if pilots are comprised of 80 employees aged 40 or above (40 percent) and if older and younger employees share the same chance of layoff, then of the 100 pilots laid off, one would expect 40 of the laid off pilots to be aged 40 or above.<sup>26</sup>

Of course, it is unlikely that the reduction in force will result in exactly 120 flight attendants and exactly 40 pilots age 40 or above being laid off. Suppose that, in fact, 125 flight attendants and 48 pilots age 40 or above were laid off. If the reduction in force was actually conducted without a bias against older employees, what is the likelihood or chance of observing 125 flight attendants and 48 pilots aged 40 or above being laid off during the reduction in force?

Using statistical approaches, it can be shown that the probability of observing 125 flight attendants age 40 or above laid off, given that 60 percent of the incumbent flight attendant population was age 40 or above is approximately 36.0 percent.<sup>27</sup> Similarly, it can be shown that the probability of observing 48 pilots age 40 or above laid off, given that 40 percent of the incumbent pilot population was age 40 or above is approximately 3.0 percent.<sup>28</sup> The probability for the flight attendants corresponds to a standard deviation of less than the necessary “2 or 3” established by the courts and thus the observed outcomes can be attributed to chance variation and not to bias on the part of Company XYZ. However, the probability for the pilots corresponds to a standard deviation of between “2 or 3” established by the courts and thus the observed outcomes cannot be attributed to chance variation.

Of course, while the observed outcomes of the reductions in force for flight attendants and pilots *individually* could be attributed to chance variation, it is also necessary to determine if the entire RIF is potentially biased against older employees. Again, statistical techniques can be used to make this determination. Using statistical approaches, it can be shown that the probability of observing 125 flight attendants age 40 or above laid off, given that 60 percent of the incumbent flight attendant population was age 40 or above *and* observing 48 pilots age 40 or above laid off, given that 40 percent

of the incumbent pilot population was age 40 or above is approximately 3.8 percent.<sup>29</sup> This probability corresponds to approximately 2.1 standard deviations, which falls within the “2 or 3” established by the courts. Thus, the observed outcome of the RIF process, accounting for the two distinct groups of employees laid off, *cannot* be attributed to chance variation alone.

## SUMMARY

The statistical analysis of a RIF can be relatively straightforward or rather complicated, depending on the goals of the RIF and the processes implemented to identify those who will be RIFed. Simple comparisons of stayers and leavers, utilizing tests of statistical significance, can provide valuable information on the likely impacts of the RIF on groups of protected employees. In all cases, it is the analyst’s responsibility to obtain information on the decision-making process that guides the RIF so that pools of employees who are available for termination can be properly constructed. In sum, keeping in mind that one cannot predict every outcome that might result, simple statistical analysis can provide extremely valuable information to an employer contemplating a RIF.

## NOTES

1. See [http://www.marketwatch.com/news/breaking.asp?id=news/story/2007/08/layoffs\\_page.html](http://www.marketwatch.com/news/breaking.asp?id=news/story/2007/08/layoffs_page.html).
2. See [http://www.examiner.com/a-1500244~United\\_\\_Frontier\\_announce\\_more\\_job\\_cuts\\_for\\_Colo\\_.html](http://www.examiner.com/a-1500244~United__Frontier_announce_more_job_cuts_for_Colo_.html).
3. See <http://www.msnbc.msn.com/id/24855246/>.
4. See <http://www.bls.gov/news.release/mslo.nr0.htm>.
5. Older Workers Benefit Protection Act, Public Law 101–433.
6. Civil Rights Act of 1991, P.L. 102–166.
7. See “State Age Protection Laws and the Age Discrimination in Employment Act,” by Joanna Lahey, Working Paper, Center for Retirement Research at Boston College wp2006–24, Center for Retirement Research, revised Nov 2006.
8. *Griggs v. Duke Power Co.*, 401 U.S. 424, 429–430 (1971).
9. *Wards Cove Packing Co. v. Antonio*, 490 U.S. 642 (1989).
10. *Connecticut v. Teal*, 455 U.S. 903, (1982).
11. *Goodman v. Lukens Steel Co.*, 482 U.S. 656, 668–669 (1987) and *Rucker v. Higher Educational Aids Bd.*, 669 F.2d 1179 (7th Cir. 1982).
12. *Meacham et. al. v. Knolls Atomic Power Laboratory, et. al.*, *certiorari* to the United States Court of Appeals for the Second Circuit, US Supreme Court Case No. 06–1505, argued April 23, 2008—decided June 19, 2008, <http://www.scotusblog.com/wp/wp-content/uploads/2008/06/06-1505.pdf>.

13. *Thomas v. Eastman Kodak Co.*, 183 F.3d 38, 42, 59–61 (1st Cir. 1999).
14. *International Brotherhood of Teamsters v. United States*, 431 U.S. 324, 336–340 (1977).
15. Cal. Government Code § 12920.
16. Idaho Government Code § 67–5901.
17. Joan Haworth and Charles T. Haworth, “Employment Decisions: Does Your Analysis of Selections Match the Real Process?,” *Employee Relations Law Journal*, vol. 12, no. 3, pp. 352–369.
18. See, e.g., “Employment Litigation,” in *Litigation Services Handbook, Fourth Edition: The Role of the Financial Expert*, by Ali Saad, Ed. Roman L. Weil, Peter B. Frank, Christian W. Hughes, and Michael J. Wagner, John Wiley & Sons, 2007, pp. 1–34.
19. This is covered in any introductory statistics text. See, e.g., *Statistics*, by David Freedman, Robert Pisani, and Roger Purves, W.W. Norton & Company, 1978.
20. *Ibid.*
21. *Hazelwood School District v. United States*, 433 U.S. 299 (1977).
22. See <http://www.eeoc.gov/policy/adea.html>.
23. Paul Grossman Paul W. Cane, and Ali Saad, “Lies, Damned Lies, and Statistics: How the Peter Principle Warps Statistical Analysis of Age Discrimination Claims,” *The Labor Lawyer*, vol. 22, no. 3, Winter/Spring 2007, pp. 251–270.
24. See <http://www.engtrends.com/IEE/0506C.php>.
25. This calculation is simply the total number of flight attendants laid off (200) multiplied by the percentage of flight attendants over the age of 40 (60 percent).
26. Again, this calculation is simply the total number of pilots laid off (100) multiplied by the percentage of pilots over the age of 40 (40 percent).
27. The statistical approach used is the hypergeometric z-score test with continuity correction. See Michael J. Piette and Paul F. White, “Approaches for Dealing with Small Sample Sizes in Employment Discrimination Litigation,” *Journal of Forensic Economics*, 12(1), 1999, pp. 43–56.
28. *Ibid.*
29. The statistical approach used is the hypergeometric z-score test with continuity correction aggregated by the Mantel-Haenszel aggregation process. *Ibid.*

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