

THOMAS ECONOMETRICS

**quantitative solutions
for workplace issues**

**The Fair Pay Act:
Implications for
Compensation
Modeling**

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Introduction

The Fair Pay Act of 2009 amends the Civil Rights Act of 1964, and states that the 180-day statute of limitations for filing an equal pay claim regarding pay discrimination resets with each new discriminatory paycheck. This Act is a direct response to the Supreme Court's decision in *Ledbetter v. Goodyear Tire & Rubber Co.*, which held that the statute of limitations for presenting an equal pay claim begins at the date on which pay was agreed upon, not at the date of the most recent paycheck.

From an econometric or statistical perspective, the Supreme Court's decision in *Ledbetter* required that Courts focus on changes in compensation during the relevant class period. The Fair Pay Act, however, shifted the focus from changes in pay to current compensation levels. This Act requires the examination of not only compensation decisions made during the class period, but also compensation decisions and "all other employment practices" that affect compensation, regardless of when in the course of the individual's employment such practices began.

So how exactly does one construct a model of compensation decisions? There are two primary approaches: human capital theory and the "direct determinants" approach.

Human Capital Theory

According to human capital theory, an individual's compensation is a function of his or her human capital. Human capital includes such factors as education, prior experience, and seniority. Using this approach, the econometrician models compensation as a function of human capital variables:

$$\text{Compensation} = f(\text{education, prior experience, seniority, etc.})$$

The central assumption underlying this model is that, on average, employees should be compensated the same, regardless of gender or race. For example, if two employees have identical human capital, their compensation should be identical. According to human capital theory, an adverse gender or race disparity must be due to "compensation decisions" or "other employment practices" that are applied in a discriminatory manner.

This approach, however, does not allow the identification of any *specific* compensation decision or other employment practice that created the gender or race disparity. Because of this, the human capital approach was often rejected by the Courts prior to the original *Ledbetter* decision.

”Direct Determinants” Approach

An alternative to the human capital model is to construct a model that includes all of the factors that directly determine compensation. Under this approach, the econometrician includes in the model all of the factors that directly determine compensation (the “direct determinants” of compensation. In order to build such a model, it is critical to have a full understanding of how compensation decisions are made. Some common direct determinants of compensation include:

- Pay grade;
- Job title or job function;
- Demotion / red-circling of pay;
- Initial penetration in grade when hired;
- Time in grade;
- Performance ratings;
- Department or business segment.

Theoretically, if one had access to all of the data on the direct determinants of compensation and ran an ideal model, one would find that compensation is perfectly predicted by these factors. No protected class status variable would enter the model. That is, the model would show no gender or race effects on compensation.

Under these conditions, could one infer that no discrimination exists?
No – discrimination may exist either as disparate impact or disparate treatment.

Disparate Impact

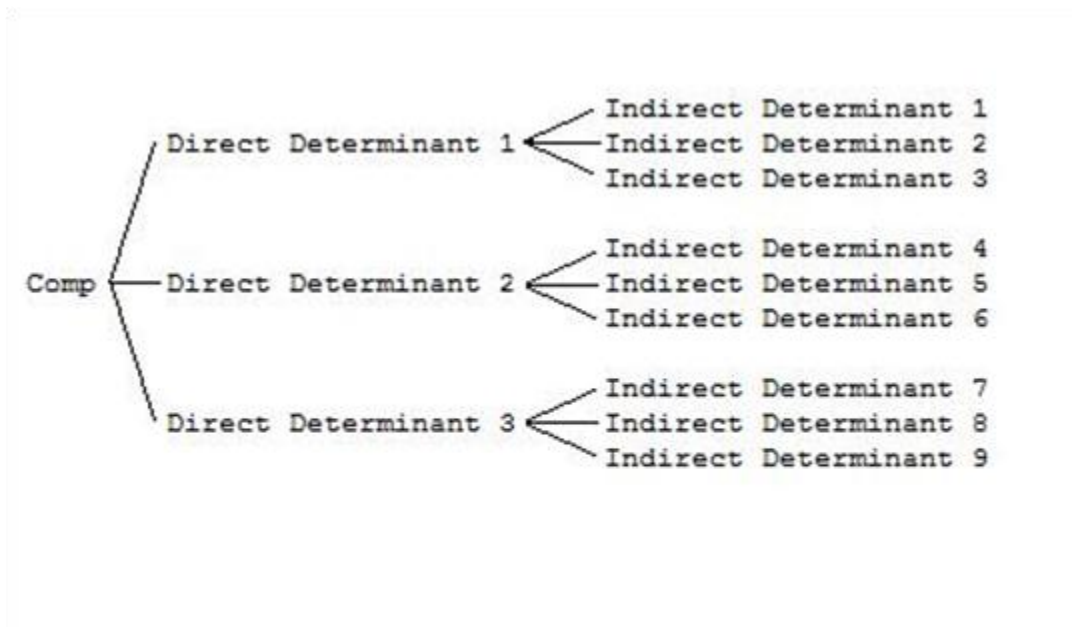
Disparate impact occurs when a neutrally applied practice differentially affects the protected and unprotected classes. In the above scenario, we cannot infer that no disparate impact exists. Each of the factors (the “direct determinants”) in our model represents a compensation decision or “other practice”. One could look at any of the factors in the model and may be able to show that the underlying decision or other practice had a disparate impact on the protected class.

Statistically, one would be able to determine whether or not disparate impact exists by simply removing one of the factors from the model and adding in its place a variable for protected class status. The protected class status coefficient would then measure the average effect of the removed factor on the compensation of the protected class member. If the model shows that protected class status is statistically and practically significant, one can infer that the removed factor has a disparate impact.

This would shift the burden to the employer, requiring the employer to demonstrate that there is a valid business necessity for the use of the factor and that no equally valid alternative factor with less impact is available. Assuming that the employer could validate the use of such a factor, the analytical inquiry into disparate impact may continue.

Consider the case of “department”. Assume that department is deemed to be an “other factor” under the Fair Pay Act. There may be a valid business justification for considering department in compensation decisions, but assume that the plaintiff offers *prima facie* evidence that the decisions regarding the department into which an employee is assigned considers factors that cause disparate impact on the protected class.

The practice being challenged as having a disparate impact would then shift from a “direct determinant” (i.e., department) to an indirect determinant (i.e., the factors considered in assigning an employee to a department).



It would seem as though if an indirect determinant has a disparate impact on a direct determinant, and that particular direct determinant has a disparate impact on compensation, one could infer disparate impact. That is, if any direct determinant has a disparate impact, it would raise the question of whether any of its indirect determinants has a disparate impact.

An interesting question arises if the direct determinant of compensation does *not* have a disparate impact, but the indirect factor *does* have a disparate impact on the direct determinant (i.e., the impact of the indirect factor is offset by the effects of other indirect factors on the direct factor). The decision of whether this would constitute actionable disparate impact is one the courts must eventually resolve. In the context of the classical theory of the disparate impact of “testing”, one could consider the direct determinant to be the “test” and the indirect determinants to be the components of which the test is constituted. Under that concept, the components themselves would not be subject to challenge, unless the “test” (i.e., the direct determinant) has a disparate impact.

All of this, however, assumes that perfect data exists for all factors affecting compensation decisions and all other employment decisions. In reality, this is seldom the case; data on some factors simply may not exist, and data for other factors may not be found in any reasonably accessible form.

In the case in which we infer disparate impact, the protected class status variable will enter into the model along with all of the measurable direct determinants of compensation. The coefficient associated with the protected class status variable will measure the disparate impact on the protected class as a result of all of the unmeasured determinants – both direct and indirect – of compensation. The protected class status coefficient expresses the “bottom line” impact of all of the determinants for which no data exists. The effects of each of the unmeasured determinants are not, and in fact *cannot*, be separated from one another. Under the 1991 Civil Rights Act, this would be an acceptable statistical analysis *if and only if* data on these determinants was not available.

Disparate Treatment

Disparate treatment refers to the case in which a practice is applied differently for the protected and unprotected class members. An employee may claim disparate treatment on an individual basis by claiming that, but for the alleged discrimination, (s)he would have achieved a “better” value on the direct determinant of compensation. The central question here is whether the action at issue is an “other factor” under the Fair Pay Act.

With respect to the question of disparate treatment on a class-wide basis, the econometric issue is whether or not there is *prima facie* evidence that similarly-situated protected and unprotected class members, on average, do not have the same values on a direct determinant or an indirect “other factor”, and whether or not the data support a claim of commonality. That is, the analysis of disparate treatment is essentially the same as it has always been, except that the outcome variable for which disparate treatment is alleged is if the outcome on the direct determinant of compensation.

Little should change in the analysis of disparate treatment claims as a result of the Fair Pay Act. The plaintiff will allege that some intentionally discriminatory employment decision (either a direct or indirect determinant of compensation) resulted in his or her compensation being “too low”. However, under the Fair Pay Act, this event could occur *at any* time in the employee’s career with the employer. An employee could provide evidence that if (s)he would have scored “better” on any direct or indirect determinant of compensation, but for the alleged intentional discrimination. As long as that event reflects an “other employment practice”, the event would no longer need to occur within the relevant time period.

For a class claim, the disparate treatment question concerns whether similarly-situated protected and non-protected employees, on average, have different “bottom-line determinant scores”. This could be examined by studying compensation as a function of (a) protected class status (the coefficient of which indicates possible disparate treatment), (b) all of the measurable determinants of compensation, and (c) all of the factors making protected and non-protected class members similarly situated with respect to the unmeasured, un-measurable, omitted factors affecting compensation. Since we are dealing with an amalgam of unmeasured, un-measurable, and omitted factors, defining “similarly situated” may become very complex.

Conclusion

In conclusion, the Fair Pay Act returns the statistical analysis of disparate impact and disparate treatment to where it was prior to the Supreme Court’s ruling in *Ledbetter*. However, going forward, cases will force the court to specify exactly what is meant by “other factors”. This, in turn, will determine the focus of the statistical analysis performed.