

**THOMAS ECONOMETRICS**

**quantitative solutions  
for workplace issues**

**A Practical Guide to  
Compensation Self Audits**

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## Introduction

There are a variety of reasons why an employer may conduct a compensation self-audit. Regardless of the reason, the steps necessary to construct the analysis framework are similar. The first step in developing a successful self-auditing program is to gain a thorough understanding of how employees are compensated and why they are compensated at different rates.

In most organizations, the answers to these questions will differ across employee groups; sales workers may be paid a commission, administrative employees may be paid a salary, and production workers may be paid an hourly rate, perhaps, governed by a collective bargaining agreement. These differences in the how and why of compensation will guide nearly every step of the self-audit process, from the decisions about which factors should be included in the model to the appropriate manner for follow-up.

## Why Conduct a Compensation Self-Audit?

Employers conduct compensation self-audits for a variety of reasons, ranging from obligations as a federal contractor to a desire for a deeper understanding of their compensation practices. Compensation self-audits are also frequently found as part of an employer's risk management plan; self-audits allow an employer to identify potential problem areas and assess the extent of exposure in the event of compensation litigation.<sup>1</sup>

Regardless of the employer's motivation for conducting a self-audit of employee compensation, it provides the organization with an opportunity to identify which measurable characteristics drive compensation differences amongst comparable employees. It enables the employer to uncover any potential problem areas, and can provide directions as to what follow-up research is needed. Additionally, it can provide guidance as to any corrective action that may be necessary. Finally, a compensation self-audit can serve as the basis of an ongoing compensation monitoring program. Such a monitoring program is considered to be a "best practice" which allows the organization not only to examine its current position with respect to compensation, but also to track any changes in position through time.

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<sup>1</sup> If the compensation self-audit is a part of the risk-assessment plan, it is typically conducted through the legal department. There are legal issues relating to privilege of work product that need to be considered. It is recommended that corporate counsel and/or outside counsel provide guidance on these issues, and remain involved in the self-audit throughout the entire process.

## The Self-Audit Framework

In developing the framework for the self-audit, the following two questions need to be answered:

1. How are individuals compensated?
2. Why are individuals compensated at different rates?

### *How Are Individuals Compensated?*

Answering the first question – how – requires an understanding of the compensation structure across the organization. Some employers utilize a system under which compensation is strictly determined by employee grade and step, while others use structures with higher degrees of discretion, such as guidelines for minimum and maximum compensation for a given position. Frequently, the compensation structure will vary across business lines, sectors, etc. For example, administrative and support staff may be paid a fixed annual salary, while the sales team may receive commission earnings in addition to an annual base salary.

An examination of how employees are compensated allows the organization to examine its practices and policies with respect to transparency and consistency. Ideally, compensation decisions “should be based on a consistent, articulated set of factors... Benchmarks should be

set so that no one passes certain points in the pay range without satisfying certain skill, competency, and experience thresholds.”<sup>2</sup>

If this initial investigation reveals a lack of consistent, articulated set of factors, this must be addressed before launching into the full-scale audit. Failure to identify such factors should raise a red flag; this may indicate that compensation decisions are made with discretion and are not based on tangible, measurable criteria. This is extremely problematic, for obvious reasons. Should an organization find itself in this situation, efforts to develop a systemic process for compensation decision-making should be undertaken immediately.

### ***Why Are Individuals Compensated At Different Rates?***

After understanding how individuals are compensated, the employer needs to understand why individuals are compensated at different rates. There are two aspects to be considered here: (a) which employees should be grouped together for comparison purposes, and (b) what factors explain pay differences within each group of comparable employees.

Classifying employees into appropriate comparison groups is an essential prerequisite to a successful analysis. To illustrate this, consider the following example. Assume that an employer is interested in examining pay equity with respect to age, and that the employer compares all

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<sup>2</sup> “Pay Equity is No Longer Only A Government Contractor Issue: How to Prepare For and Avoid Pay Discrimination Claims”, Jon Geier, Paul Hastings Janofsky & Walker, LLP, 2000.

employees as a single large comparison group, encompassing all job titles and functions, business lines, etc. Under these circumstances, is it likely that the employer would find that the compensation of “older” workers is greater than the compensation of “younger” workers. This finding, in isolation, could inappropriately be interpreted as “evidence” of age bias against “younger” workers. However, further examination would reveal that such an interpretation is likely incorrect.

Based on available information about the earnings “life-cycle” and labor market dynamics, we know that “younger” employees are typically more likely to hold “entry level” positions, whereas “older” employees are typically more likely to hold more “senior level” positions. We would also expect that “entry level” positions generate compensation below that of “senior level” positions. We would in fact expect that “older” workers, who are more likely to hold “senior level” positions, would be compensated at a higher rate than “younger” workers, who are more likely to hold “entry level” positions. In this case, a distinction between “entry level” and “senior level” positions, perhaps based on job function, level of supervisory responsibility, or some other factor, is important in assessing compensation across employees.

## **Similarly Situated Employee Groupings**

In order for the compensation self-audit to generate meaningful results, it is important that the employees being compared against one another are “similar”. It would be inappropriate to compare the compensation of the CEO of the organization against the compensation of

entry-level administrative support staff; we would expect differences in compensation between the CEO and the administrative support staff because they serve completely different purposes within the organization, have differing levels of responsibility, etc. The grouping of employees, or construction of “similarly situated employee groupings” must be performed with the utmost care. The manner in which employees are grouped can have a very strong effect on the results generated from the compensation self-audit.

There are no definitive rules for constructing similarly-situated employee groupings, or SSEGs. However, the Office of Federal Contract Compliance Programs (OFCCP) proposed the following definition of an SSEG: “groupings of employees who perform similar work, and occupy positions with similar responsibility levels and involving similar skills and qualifications”.<sup>3</sup>

The OFCCP notes that other ‘pertinent factors’ should also be considered in the formation of SSEGs:

... otherwise similarly-situated employees may be paid differently for a variety of reasons: they work in different departments or other functional divisions of the organization with different budgets or different levels of importance to the business; they fall under different pay plans, such as team-based pay plans or incentive-based pay plans; they are paid

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<sup>3</sup> Federal Register, Department of Labor, Employment Standards Administration, Office of Federal Contract Compliance Program: Voluntary Guidelines for Self-Evaluation of Compensation Practices for Compliance with Nondiscrimination Requirements of Executive Order 11246 With Respect to Systemic Compensation Discrimination; Notice, Part V., p. 35114 (Vol. 71, No. 116, June 16, 2006).

on a different basis, such as hourly, salary, or through sales commissions; some are covered by wage scales set through collective bargaining, while others are not; they have different employment statuses, such as full-time or part-time...<sup>4</sup>

In addition to those mentioned above, other “pertinent factors” may include geography<sup>5</sup>, business unit or department<sup>6</sup>, or some other measure of location.

## Edge Factors

After the SSEGs are constructed, the employer then needs to consider why employees within the same SSEG may be paid differently. That is, the factors used to determine compensation levels among similarly situated employees must be identified. Typically, these factors include such things as length of service, time-in-job or time-in-grade, relevant experience in previous employment, education and certifications, and performance evaluation ratings. Collectively, these factors are commonly referred to as “edge factors”.

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<sup>4</sup> Ibid, p. 35115

<sup>5</sup> For example, locality adjustments or cost of living adjustments may be given to employees working in certain geographic locations.

<sup>6</sup> Payroll budgets may differ by business unit to department. This, in turn, may lead to differing compensation amounts between employees performing identical tasks with identical job titles but working in different business units or departments.

As with the compensation structure – the how – it may be the case that the edge factors – the why – differ throughout the organization. For example, while a CPA certification may be an edge factor for employees working in the accounting department, it probably will have no importance for those employees working in the sales and marketing department. It is important to understand which edge factors apply to which groups of employees, and to build these edge factors into the compensation modeling process as appropriate.

In the above example, the model for the accounting department would include a variable for the possession of a CPA certification, whereas the model for the sales and marketing department would not. Model structures across SSEGs do not have to be identical; if different edge factors exist for different SSEGs, the model structures should reflect this.

## **Data Measurability and Availability**

After understanding the how and why of the compensation structure and identifying all relevant edge factors, the question then becomes whether these factors can be measured, and whether data for these factors readily exists within the organization.

Some factors will be relatively easy to quantify using readily-available data. For example, length of service can be calculated using date-of-hire, a measure that is commonly maintained in human resources databases. Other factors, such as relevant prior experience, may be difficult to quantify because of data limitations. The employer may not maintain information on prior relevant experience in an easily accessible computerized format. If,

for example, the only available source of prior experience information is hard-copy resumes, and these resumes exist for only some, but not all, employees, the costs involved in data collection and data entry may be prohibitive.

Finally, some edge factors do not lend themselves to quantification because of their subjective nature. For example, assume that one of the edge factors identified for a particular SSEG is the number of publications authored by an individual that are published in a “top tier” peer-reviewed journal. While it may be easy to count the number of articles an individual publishes, defining the array of “top tier” journals may be a more difficult task.

If an edge factor cannot be easily quantified, or if data collection would be prohibitive, a proxy variable is often substituted. A good proxy variable is one that is easily measurable and is highly correlated with the edge factor for which it is being substituted. In some cases, a good proxy variable will be easy to identify. In other cases, a proxy variable may be difficult to identify and/or may be less than perfect. In the example above, where relevant experience in prior employment is difficult and/or costly to measure, age-at-hire *could* be (and often is) used as a proxy variable.

However, the use of age-at-hire has both positive and negative aspects. On the positive side, it is easily measurable. Date of birth is commonly maintained in human resources databases, and along with date of hire, date of birth can be used to calculate age at hire. Furthermore, one would expect age at hire to be somewhat correlated with prior experience, since older workers typically have more prior experience than younger workers.

On the negative side, age at hire may or may not reflect *relevant* prior work experience. If an individual has recently changed occupations, prior experience may be completely irrelevant. For example, twenty years of experience as an elementary school teacher is likely irrelevant to someone who is currently employed as a litigation attorney.

Further, this metric does not consider periods of absence from the labor market for reasons such as illness, education, etc. The use of age at hire may introduce a gender bias into the model, as women typically experience greater absence from the labor force than men due to childbearing and child rearing. Therefore, using age at hire as a proxy may overstate the *true* prior experience.

The upshot of this is that the selection and use of proxy variables should be carefully considered, and the implications and limitations of each proxy variable should be weighed against their accessibility.

## **Data Collection**

After defining the SSEGs, identify edge factors, and carefully considering proxy variables, the data is collected and assembled. At this point, the data should be reviewed for potential problems. All problems should be identified and, if possible, corrected. If, for example, the compensation rates for a given SSEG contain a mixture of hourly rates and annual salary figures, it is necessary to convert the hourly rates to annual salaries, or vice versa. Adjustments to “full time equivalents” may be necessary if the standard number of hour per day differ across employees. The point here is that the data should be internally consistent within

SSEGs. If there are any “holes” in the data that can be filled, this additional data should be collected and integrated into the data set. If the “holes” are sufficiently large and/or are unable to be filled, and no suitable proxy variables exist, it may be necessary to remove that factor from the analysis.<sup>7</sup>

## Multiple Regression Analysis

Once the data is collected, assembled, and “cleaned”, attention can then be turned to the actual framework for the analysis. The most commonly used framework is multiple regression analysis. Multiple regression analysis is a generally accepted and widely used statistical technique. It shows how one variable – in this case, compensation – is affected by changes in another variable. In the current context, it provides a dollar estimate of the “effect” of the edge factors on compensation.

Multiple regression analysis is one of the preferred techniques because the calculations involved in estimating the effects are relatively simple, interpretation of the estimated “effects” is straightforward, and the entire compensation structure can be expressed with one equation.

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<sup>7</sup> For example, if age at hire is to be included in the model and date of birth is missing for some employees, date of birth information should be collected and integrated. Entering “0” for those individuals with no date of birth in the data set can potentially have a strong impact on the estimated effect of age at hire on compensation, leading to inaccurate estimation.

The beauty of multiple regression analysis is that it estimates these effects net of all of the other edge factors in the model. In other words, multiple regression analysis allows one to estimate how many more dollars of compensation an individual would be expected to receive if (s)he had one additional year of length of service, holding all other edge factors constant. The effects of each of the edge factors can be separated out, and a separate effect is estimated for each of the individual edge factors.

However, multiple regression analysis does have some limitations. One limitation is that the sample size (i.e., the number of individuals being studied in each of the SSEGs) must be “sufficiently large”.

The definition of “sufficiently large” is somewhat subjective. At a minimum, there must be more individuals being studied than there are explanatory factors. If there are more explanatory factors than individuals being studied, the “effects” of each of the factors simply cannot be estimated.

Assuming that the sample size meets this minimum threshold, determining whether the sample size is “sufficiently large” becomes a question of judgment. For example, assume that compensation is thought to be a function of total length of service with the organization and time in grade.

The minimum threshold in this case would be three employees (since there are two explanatory variables – length of service and time in grade). However, the minimum threshold sample size of three is not “sufficiently large” to generate any *meaningful* results. In general, more observations (in this case, each employee is an observation) used in the estimation generate more powerful statistical tests and more robust results.

The OFCCP offers the following comment on the interpretation of “sufficiently large”: “... SSEGs must contain at least 30 employees and at least 5 employees from each comparison group (i.e., females/males, minorities/nonminorities).”<sup>8</sup> Thus, the number of employees grouped together should be kept in mind when constructing the SSEGs.

There may be instances, however, in which the number of employees appropriately grouped together (because of location, job function, etc.) does not meet the above guidelines, and including these individuals in another SSEG would be inappropriate. Under these circumstances, multiple regression analysis should not be used; an alternative methodology is required. Some alternative methodologies commonly used are mean analysis, median analysis, and the DuBray method (popularized by the OFCCP desk audits).<sup>9</sup> As with multiple regression analysis, each of these alternatives had both advantages and drawbacks that should be considered.

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<sup>8</sup> Federal Register, Department of Labor, Employment Standards Administration, Office of Federal Contract Compliance Program: Voluntary Guidelines for Self-Evaluation of Compensation Practices for Compliance with Nondiscrimination Requirements of Executive Order 11246 With Respect to Systemic Compensation Discrimination; Notice, Part V., p. 35114 (Vol. 71, No. 116, June 16, 2006).

<sup>9</sup> The “DuBray method” was instituted by Joseph DuBray, OFCCP Regional Director in Philadelphia. This method was first introduced in 1993 and attempted to measure “human capital” variables such as company seniority. DuBray’s approach declared that all employees in the same pay grade were automatically similarly situated. Therefore, analysis of the individual jobs was not required. Under the DuBray method, *any* difference in pay was enough to provoke an allegation of discrimination.

## Practical and Statistical Significance

When reviewing and evaluating the results of the multiple regression analysis, it is important to keep two issues in mind: (a) practical significance, and (b) statistical significance. Practical significance refers to the size of the estimated effect relative to (in this context) compensation. Statistical significance refers to whether the observed effect is the likely outcome of random chance. An effect can be:

- both practically and statistically significant;
- statistically significant but not practically significant;
- practically significant but not statistically significant
- neither practically nor statistically significant.

The two “significance” measures are independent of one another.

An estimated effect is said to be practically significant if it is “big enough to matter”.<sup>10</sup> This is best demonstrated through the following example. Assume that the multiple regression analysis generates the following effects:

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<sup>10</sup> The determination of whether an estimated effect is “big enough to matter” is based on the judgment, experience, and expertise of the person reviewing the results. There are no generally accepted “rules” for assessing whether an estimated effect is practically significant.



In this example, the only statistically significant effect is time in grade. Neither length of service nor having a CPA license is statistically significant. It is important to note that if the effect is not statistically significant, the effect is not distinguishable from zero (\$0) in a statistical sense. Any estimated effects that are not statistically significant, despite the size of the effect, are statistically equivalent to zero. In the above example, even though the estimated effect of having a CPA license is \$1,500 (a practically significant effect), from a statistical perspective the effect is \$0.

It is often the case that compensation self-audits are undertaken to assess the degree of compensation equity between “minority” and “majority” employees (or “protected” and “non-protected” employees). For example, an organization may want to explore compensation equity between men and women. In this case, gender can be directly incorporated into the multiple regression model:

SSEG #1 – Accounts Receivable Clerks

$$\text{Salary} = \$57,300 + \$1 \text{ (length of service)} + \$3,000 \text{ (time in grade)} + \$1,500 \text{ (CPA license)} - \$2,300 \text{ (female)}$$

(p=0.58)
(p=0.03)
(p=0.25)
(p=0.04)

In this example, the estimated coefficient on the gender variable is - \$2,300. This implies that women earn \$2,300 less than males with identical length of service, time in grade, and CPA license status. Here, additional follow-up work should be done to try to understand why female accounts receivable clerks earn (on average) \$2,300 less than male accounts receivable clerks with identical length of service, time in grade, and CPA license status. It may be the case that there is an edge factor affecting compensation that was not originally identified, and that this edge

factor is correlated with gender. Thus, it would *appear* as though there is a gender disparity because not all of the relevant edge factors have been incorporated into the model. On the other hand, it could be the case that, even after follow-up, no explanation for the gender difference can be found, and salary adjustments are warranted.

## **Follow Up Investigations**

There are various methods of follow-up, such as review of personnel files, review of performance ratings, and discussions with managers and human resources personnel. This follow-up may be conducted jointly with an organization's legal department and/or outside counsel. It is not uncommon for outside consultants to also become involved. The important point regarding follow-up is that if potential problem areas are identified, action should be taken to further investigate those areas, and corrective action should be taken where appropriate. If the corrective action includes compensation adjustments, it is highly recommended that these adjustments are fully discussed with counsel before they are implemented. What may appear to be a minor change can have wide-sweeping implications for the compensation structure of the entire organization. It is important to understand the ramifications of the proposed adjustments before implementing them.

## Ongoing Compensation Monitoring

While a one-time compensation self-audit is certainly a good business practice, an ongoing compensation monitoring program is a better business practice. The one-time audit approach outlined above easily lends itself to an ongoing monitoring program. The information gained from the initial audit can be used to improve upon the analysis going forward. For example, assume that the follow-up discussions with managers and subsequent review of personnel files indicated that relevant prior experience was an important factor in determining compensation, but this information does not exist in a readily-accessible data format. In the immediate term, a proxy variable may have to be substituted for relevant prior experience. However, once this data need is identified, steps can be taken to develop a data collection and capture process, thus making this information available for future audits.

An ongoing process also allows the organization to monitor initial pay rate differences. It could be the case that everyone – regardless of job function, grade, etc. – receives a 3% annual increase in pay. On the surface, it may seem as though this policy would allow no opportunity for any compensation differences by race, gender, age, or other characteristic. However, if initial pay rates are set at different levels for protected and non-protected individuals with the same skills and experience hired into the same job at the same time, across-the-board increases will only serve to perpetuate – and in fact increase – the difference over time. Consider the following example:

John and James are hired on the same day for the same job, have the same prior employment experience and education, and are identical

with respect to all measurable criteria. Further assume that John is hired at \$10.00 per hour and James is hired at \$10.50 per hour. The table below illustrates how the difference in pay rates increases over time, even if John and James receive the same annual percentage increases:

	<u>Pay Increase</u>	<u>John</u>	<u>James</u>	<u>Difference</u>
Year 1	n/a	\$10.00	\$10.50	\$0.50
Year 2	3%	\$10.30	\$10.82	\$0.52
Year 3	3%	\$10.61	\$11.14	\$0.53
Year 4	3%	\$10.93	\$11.47	\$0.54
Year 5	3%	\$11.26	\$11.82	\$0.56

The difference in pay rates has increased from fifty cents per hour to fifty six cents per hour over the course of the five year period. This difference will continue to increase over time, even if John and James continue to receive identical percentage increases each year.

As can be seen from this simple example, initial pay determination is critical for determining the compensation landscape of the organization. Understanding how initial pay is determined is a critical component of understanding the overall compensation process as a whole.

The frequency at which self-audits should be undertaken depends on the characteristics of the organization. If the company has attained its “steady state” (i.e., regular sustained growth, stable workforce, no changes to compensation decision-making processes, etc.) an annual self-audit is likely to be sufficient. If, however, the organization is experiencing rapid

growth, dramatic employee turnover, a change in the heading of the business, or other such structural change, quarterly or bi-annual self-audits may initially be warranted.

## Conclusion

Compensation self-audits are performed for a variety of reasons, but the underlying questions addressed by these audits are the same: how are individuals compensated, and why are individuals compensated at different rates. The answers to these questions provide valuable insight into the organization, illuminating the policies and procedures – both formal and *de facto* – used in the compensation process. The self-audit highlights any potential problem areas that may require further investigation and provides a mechanism for periodic follow-up on those areas over time.