

fffSA webinar 2022-11-08: <https://attendee.gotowebinar.com/recording/56696744077177347>

SA webinar – advanced 2022-11-22: <https://attendee.gotowebinar.com/recording/2838802011267755521>

XA webinar – <https://attendee.gotowebinar.com/recording/654798084085642241>

-----  
-Data for geographic location is defined by user input. When survey participants fill out surveys they include the address of the surveyed employees. Our survey providers include breakdowns of data by geographic location and this information is incorporated in the Salary Assessor.

I hope this answers your questions. If you have any further please let me know.

I would like to start out by saying that I have the upmost respect for the BLS and their surveys. There are specific applications (such as job counseling) where the use of their data does an excellent job fulfilling the needs of their customers. However, elements of the data collection process introduce error into the data which can create problems for market pricing tasks. I'll briefly outline these limitations below.

1. The BLS questionnaire collects wage data by ranges. I have attached the questionnaire with this email. On page thirteen you will see physical therapist (SOC: 29-1123). Looking at the columns of ranges we see that the value reported for Physical Therapist falls within the \$36.00-\$45.24 range. Because data collection is based on ranges of about \$10.00 per hour, the absolute accuracy of this salary survey is limited.

2. Within the BLS salary survey, wage data are collected by job family instead of unique job. Within a single job family there may be jobs of multiple levels and multiple functions. The BLS publishes a list of "Lay Titles" which provides information on the unique jobs within each job family (as defined by the BLS). I have provided the jobs reported within the Physical Therapist job family below.

29-1123.00 Physical Therapists Kinesiotherapist  
29-1123.00 Physical Therapists Licensed Physical Therapy Assistant  
29-1123.00 Physical Therapists Pediatric Physical Therapist  
29-1123.00 Physical Therapists Physical Therapist (PT) AC  
29-1123.00 Physical Therapists Physiotherapist  
29-1123.00 Physical Therapists Pulmonary Physical Therapist  
29-1123.00 Physical Therapists Sports Physical Therapist  
29-1123.00 Physical Therapists Treatment Coordinator

Note that there are assistant PT, PT, and PT coordinator level jobs included with this family. One potential problem arises when job family results are applied to individual level jobs. Essentially, this is comparing the average of several (related) jobs to a single occupation. If a greater proportion of the jobs in the family have higher (or lower) wages than your job of interest the value of the job family will be higher (or lower) than the job of interest. Unfortunately, without an external data source for individual level jobs, there is no way to tell if job family values are higher or lower than the job of interest. Statisticians refer to a comparison between an individual level variable and a group (family) level variable as a "levels of analysis" problem. Statisticians consider this a major problem.

3. There are three job families associated with Physical Therapists: Physical Therapist Aides (312021), Physical Therapist Assistants (312021), and Physical Therapists (291123). This creates a potential problem for the Physical Therapist job family. Specifically, there is overlap between the lower end of Physical Therapists and Physical Therapist Assistants. The Physical Therapist job family is conceived of as having three primary levels: PT assistant, Physical Therapist, and PT coordinator. However, participants may be expected to place data for the PT assistant in the PT assistant job family as opposed to the PT job family. However, because there is no PT coordinator job family, participants may be expected to place those positions within the PT job family. This reduces the number of observations on the lower end of the job family and can be expected to increase the value reported by the survey. This is a statistical phenomenon called range restriction and is a well known confound of survey data.

These are the reasons why I am very conservative with my use of the BLS survey. There is useful information within the survey, but it must be used with full knowledge of the limitations.

-----  
I understand your client's concern. We use several methods of data collection to ensure that we have consistent data coverage from an industry and geographic perspective. I'll begin this email with a discussion of sampling within salary surveys and then move into our methodology.

Standard salary surveys collect data from and report from a single unique sample each year. This is a valuable approach to researching compensation but has a number of potential problems. First, because the data reported in salary surveys are collected and reported independently each year, the year over year salaries have a relatively high level of variance. I have seen year over year variations in excess of 15,000 pounds for specific jobs, which makes accurate benchmarking challenging. This variance can also be seen between occupational structures. For example, it is not uncommon to see a level two accountant have a higher reported salary than a level three accountant, which is clearly not a reflection of reality. However, it is an accurate reporting of the data as it was collected that year. One of the reasons for this inconsistency is because surveys do not consider jobs in context. The true salary value for any job is influenced by the previous years' salaries for the individuals in that job. There are also relatively consistent relationships between a job's salary and the wages of a boss or subordinate. Beyond these two examples, there are many other contextual variables that provide information relevant to a job's wages. I think about the data provided by salary surveys as a data point in space. It is a data point that has no relation to data collected in the past and no relationship with the reality of the job in an organizational structure. Salary survey data are very valuable, but they are one part of the overall picture for a job. We can be more accurate, and provide better coverage if we consider each job in context.

At ERI, we use salary survey data, but we examine those data in the context of a given position. Specifically, we examine each job in relation to historical data, geographic data, industry data, and in relation to other jobs. Historical, geographic, and industrial relationships are relatively simple computations. If you need further clarification of this research please let me know.

I believe our quantification of the relationships between jobs require greater explanation. This is because any comparison of jobs, while valuable, has some potential pitfalls that need to be addressed before identification of structure can be successful. Specifically, we don't necessarily trust job structures defined by individual judgment. Specifically, individuals can be expected to have too many biases to reliably identify structures across many industries and job families. In order to reach these ends we acquired the job analysis firm PAQ. The data collected by this firm allows us to mathematically quantify the similarities and differences between jobs and more effectively identify hierarchical structures within job families. By examining all the Salary Assessor jobs with this job analysis tool across multiple cultures we are able provide an objective and quantifiable context for these jobs.

In sum, we are able to provide the job coverage you indicated by examining salary survey data over time and within the context of its structure, industry, and geography. It is true that we may not have salary

survey data for every location every year, but by building an historical picture of the full context of the job we are able to provide an accurate and reliable analysis of salaries in various locations.

To answer your specific questions:

I was not able to replicate your finding of a lower salary in London as opposed to Coventry. I have attached a PDF showing the report. If your product shows different numbers would you mind forwarding a copy?

---

#### Answers:

The Salary Assessor is a higher level data analysis of compensation surveys. Essentially, we gather salary surveys from multiple industries and locations and analyze the data to provide reliable salary information for our customers. We run roughly 300 separate analyses on the data contained in our databases so it is a little challenging to provide an extremely concise methodology, but I will hit the high points of how we reach the results that are provided in the product.

#### Data:

Data are primarily collected through three survey companies that are owned by ERI (ERI Salary Surveys, Abbott Langer Surveys, and PAQ). We also collect compensation data through publicly traded organization's proxies. Additionally, we purchase data through third party salary survey vendors. Overall, our databases represent roughly 60 million incumbents.

Analyses: We have multiple analyses (each with unique data) that address the compensation of a specific occupation from multiple perspectives and act as checks and balances. Methodologically, we're establishing something called convergent validity. The occupations found in SA are those with a high level of convergence (or agreement) between analyses. Essentially, if multiple analyses independently reach the same answer we can have a high level of confidence in that answer. This is a well-established and accepted methodology within the research community.

1. Our primary analyses are conducted using several different types of analytical methods. We use cubic spline regression for years of experience and revenue. This is a type of analysis allows for wages to increase at different rates for different years of experience/revenue. Standard regression is used for differentiation between geographic areas. We differentiate between industries with polynomial regression.
2. One of the main advantages of our data analysis method is that we use multiple years of data to develop a longitudinal perspective on the data. We have found that salary survey data can fluctuate from year to year due to sampling error (if 100 companies exist in a sector and 10 are surveyed one year and 10 different ones the next there will likely be differences in the wages reported). To minimize the effects of sampling error we examine new data within the context of past data. This results in a more accurate wage result.
3. We also examine jobs within a hierarchical perspective. By examining the relationship of a job to its supervisor and subordinate we are better able to triangulate where a job sits in relation to other positions. Again, the historical perspective is critical for this analysis. We must know the historical relationships between jobs to evaluate new data.
4. There are several other analyses that we use to establish convergent validity that are proprietary

#### Answers to specific questions:

a. I am working to find the specific citation for that survey. I suspect it is an older survey, but I will let you know when I find it in hard copy or digital form.

- a. part b. I would suggest using the HRSDC source as well as ours. I understand that there are differences between our data, but that doesn't mean that either source is incorrect. All surveys are susceptible to sampling error so it is common practice to seek out multiple surveys to gain different perspectives on the same question.

b. Statistics Canada data are used and we are very careful with issues of age and job families, but unfortunately I am not able to provide specific methodologies that are used to analyze any one survey.

c. The data in the “participant data” tab comes from our Salaries Review database. Essentially, these are data that are collected directly by ERI. Employers sometimes want to purchase a single report and we provide discounts if they will tell us what they are currently paying employees in that position. As a result, this database is not nearly as extensive as our survey database, but still contains a significant amount of data. If there is no data for a specific position in a specific location it merely means that no employers from that location have purchased a one time report from us. It doesn’t mean that we don’t have data for the position and location.

d. the quote from our methodology accurately represents how data are collected and analyzed within the Salary Assessor. We do have data for PEI, but as may be expected, it is thinner than an area like Toronto. In situations such as this, supplementing existing data with other locations that are similar in size, SES, etc. and close in proximity will greatly increase the accuracy of our results. I am not able to provide the precise algorithms, but we have spent a substantial amount of time ensure that they yield more accurate results than a small sample survey.

e. “Observations” refers to the incumbent count from the largest survey. We don’t provide a sum of incumbent counts to avoid potential double counts.

f. population standard error is the error rate associated with our analyses. This is the average distance of each point from the regression line. Every survey has a rate of error or standard deviation associated with their data collection and reporting methods, but to my knowledge, we are the only organization that provides this information.

g. Naturally, if you so desire, it can be turned off.

h. It is understandable that data from different sources may have different results. The issues related to sampling error noted above are well known and many compensation education institutes recommend using 3 sources of data. We believe that we go farther than any other organization to minimize these effects, but it is still something of which to be aware.

## Questions:

Recognizing ERI confidentiality constraints, if any, the following questions were compiled based on my own observations and resulting questions, in anticipation that a given stakeholder may ask the same. I could sign a non-disclosure agreement for anything sensitive... and we could figure out how to communicate related info.

### 1. Published salaries

- a. The Wages and Working Conditions Survey for PEI is listed as a survey source for PEI salaries. I cannot locate this specific survey on the HRSDC web site. In the event I am asked, I need to know the specific reference.
- a. The HRSDC LMI published mean wages (see attached shortcut link) are generally lower than ERI published wages for PEI. Their methodology is stated as “Wage data for the 2010 wage survey is derived from several sources including: - Direct contact with employers - Employment Insurance data (Insurable earnings as shown on records of employment) - Job bank (vacancies posted by employers) - Labour Union wage scales - Existing wage data from Labour Market Information Data Bases. Direct contacts with employers are carried out usually in the three or four months prior to the publication of the report, Other data is extracted mostly over the previous 12 months. A weighted average system is used to determine a final estimate. Methodology and

weighting factors were developed by the economists at RHQ in PEI and Nova Scotia. This may be a key 'challenge source'

- b. Census Positions Experienced Earnings – Statistics Canada, is 2006 data. What is provided relative to the census, how is it used, and how is it adjusted for currency.
- c. There are no "participant data" for ChTown for IT occupations checked. It was indicated previously that participant data did exist for PEI. Should we assume the survey(s) are associated with other sectors? What sectors?
- d. Because the '# of employees in position' for all checked IT occupations is '0-20' range, the 'Contiguous Area' method may be utilized for ChTown IT salaries. What EXACTLY is the approach used for ChTown salaries? ERI documentation states: "If the "Employee Survey Population" drops too low for a given job in a given area, data from the closest/contiguous geographic area may be factored into the wage analysis. Such data is adjusted by a geographic differential so as to express the resulting wage data in terms of the original city/area being analyzed, but does not affect the number of employees reported"
- e. The 'Reliability Statistics' provide 'Observations'. What exactly are observations?
- f. What is the 'Population variance' provided with the 'Reliability Statistics'. What does the 'Population & SE Source' mean and/or what is the rationale for referencing Statistics Canada?
- g. What is the 'annualized salary trend' data and how is it used?
- h. The below charts portray salary ranges based on a 2008 IT employee survey. Although it was limited to ranges, it appears that the means could be lower than what ERI is reporting. How could we manage this issue? The federal gov't pays higher than the provincial gov't and private sector on PEI. Charts portray additional profiles.

Q: With so many surveys, how do ERI decide how to compare the data across surveys such that they are describing the same level or function?

A: Before we include the survey data for any given job in our product we go through a process called job matching. First, multiple independent raters go through the job descriptions in the surveys and match the jobs in the surveys to ERI jobs we have developed. These initial matches are conducted based on job descriptions. After the initial match, we reconcile discrepancies, and come to a consensus as to whether a particular survey job actually matches our internal job. We do consider factors such as level, education, industry and 97 additional hard metrics for each job. These factors are found in the "Job Characteristics" tab and are derived from the job analysis component of our business.

Additionally, we have been using some of the same surveys with the same jobs for over 30 years. Using these surveys for this length of time has allowed us to become familiar with the jobs in the surveys and given us time to evaluate and re-evaluate these matches.

Q: Is there any internal restriction of the age of a survey (i.e.: how would we know the information is up to date?)

A: No, there is no age limit to the data, which allows for much higher precision in our data. We use historical wage data to examine the growth trends for specific jobs over time. This allows us to put new salary survey data into a historical context and helps mitigate one of the major limitations of survey data (Chance). One of my favorite statisticians, Robert Abelson, has a saying: "chance is lumpy". What he means by this is that any sample of data taken from a given population may have a higher or lower mean than the true mean found in that population, and because chance is random, the amount of deviation from the population mean of a given sample (called sampling error) does not follow any particular pattern. In practice, there may be five or more samples that report data higher than the true mean before a sample is collected that reports data close to, or below the true mean. Of course, in the long term, survey results will cluster around the true mean. Because of this, we collect multiple surveys for each job every year. By collecting multiple samples each year and then examining the results of those samples in the context of samples from previous years we are able to greatly reduce the effects of chance (sampling error).



If a job is showing in the SA we have current data for that job. We currently have data for 4,249 titles in the UK, which seems like a lot. However, this number only represents about 4% of the jobs that we track. We maintain a research list of ~100,000 titles and of this list only the 4,249 titles that show in SA meet our criteria for inclusion. Specifically, we require stable, long term data sources for a job to show in SA. As a result of this strict requirement, we are able to consistently collect data for each job every year.

Q: What criteria do ERI use to determine which surveys they include in the database?

A: The simple answer is methodological rigor. We examine the specific methods of each survey we use to determine whether the researchers used sound methodological principles to conduct their survey. Many textbooks and several peer-reviewed journals are dedicated to this subject, so a full description of what makes a survey methodologically rigorous is somewhat out of the scope of this email. If you are interested in determining the quality of surveys and other forms of research I can suggest *Essentials of Behavioral Research: Methods and Data Analysis* by Robert Rosenthal. This is a classic work on the subject and is very comprehensive.

1. In cases where a specific job in is not surveyed in a specific city, ERI will utilize pay relationships of nearby comparable or contiguous areas in its analysis of geographic pay patterns. The normative data from these sources permit us to derive geographic pay differential patterns which can be applied to the specific job which was not surveyed. This concept is based on the principle of relative value patterns of jobs of nearby comparable or contiguous areas. Thus, the wage values ERI shows for the job not surveyed is calculated based on the same relative value of the job in question to other jobs as they exist in comparable/contiguous areas. Over the years, the accuracy of extending the relative value to a specific job not surveyed has been demonstrated to be quite accurate. The accuracy has been demonstrated by later salary surveys which have included the job in question and company/customer feedback.
2. The Idaho Occupational Employment & Wage Release reports data by job family whereas the Salary Assessor provides data by individual occupation. Essentially, these two data sources report data at a different levels of granularity (e.g. comparing apples to apple trees). Because each job family contains many unique occupations it is not uncommon for the mean salary of a single occupation to not match the mean of the job family. For a more in depth discussion of the differences between these two research methodologies please see the attached white paper.
3. We are not able to directly use the OES data within the Salary Assessor. The OES data are reported at the job family level and the use of these types of data would create problems for our analyses. All of the primary analyses in the Salary Assessor come from occupation level, employer provided Salary Surveys. We do use the OES survey as a quality control tool. We track each occupation in the Salary Assessor against the OES data and if there is a sudden change in the in the relationship between the two it's a sign that there may be a problem. We will then examine the underlying data to determine the cause of the change and what remedy, if any, is required.

## **Geography by Industry**

Our analysis of salary survey data for unique locations and industries is dependent on the occupation being analyzed. This is because industry and location have different amounts of influence over an occupation's salary depending on the occupation. These differences generally exist between executive and non-executive occupations. I'll address each in the following text.

Non executive occupations are frequently influenced by geography more than industry. This is because organizations will frequently have to compete for labor across industries. An accountant may search for work in multiple industries as their skills are transferrable. We are able to provide local data for these occupations by expanding our analysis to other industries that would be competing for the same labor. We are then able to capture any differences that may exist between the industries by examining the differences between those industries within other local labor markets.

Executive occupations are frequently influenced by industry more than geography. This is because competition for executive labor frequently exists on a national level, and also because industry knowledge is more frequently critical to success in these occupations. We are able to accurately capture the market rate for these occupations by expanding our analysis to other comparable organizations within the same industry. We are then able to capture geographic differences by examining relative value patterns within an industry to other, related industries.

These methods give us a clear picture of how an occupation exists within a labor market, while accounting for differences which may exist between the industries. Over the years, the accuracy of these methods have been found to be quite accurate. The accuracy has been demonstrated by later salary surveys which have included the occupation, industry, and location in question and from company/customer feedback.

### **Reliability Statistics Vs Employee Populations**

Thank you for your question. It is not surprising that the numbers you are seeing in the reliability statistics window are higher than you expected. This window is designed for a purpose other than pure sample size reporting. The window “Employee Populations” is a more accurate measure of sample size for each occupation. I’ll provide information on what each window reports below.

#### **Reliability Statistics:**

The reliability statistics window is designed for use in court to assist in passing the Daubert Challenge. Expert witnesses need a measure of error to pass this challenge, which is the primary function of this window. To reach this end, we provide the reliability information from the largest survey used in our research efforts: the BLS survey. I should note: the BLS survey is not a central data source for the Salary Assessor, but it is still used as a quality control measure. The reliability statistics from the BLS survey represent a conservative (and defensible) measure of error for the Salary Assessor. The sample size is larger because the occupation is defined by SOC as opposed to occupation in this particular window. In sum, this metric is tailored for reporting error rates in a courtroom and is not the best tool for assessing database scope for a particular occupation.

#### **Employee Populations:**

The “Employee Populations” window provides a range estimate of sample size for that occupation. We report sample sizes as range estimates for two reasons:

1. Reporting sample sizes by range is necessary because we have many surveys which are used consistently over multiple years. Within these surveys, the same organization may participate over multiple years. This consistency is desirable as it gives us a cleaner look at salary growth; however it makes reporting sample sizes more complicated. We could report unique observations with or without taking the organization into account, but neither value will be truly representative of the volume of data behind the salary figure.
2. We purchase or trade data with third party salary surveys. These survey firms generally provide lists of participating organizations for the entire survey, not by job. Because of this, we have to estimate the amount of year to year organizational overlap per job in these surveys.

These complications in sample size reporting are why we provide ranges instead of a single number for sample sizes. We feel that this is the most accurate and transparent method for communicating the scope of our databases to customers.

For your purposes I would suggest using the “Employee Populations” window to examine database scope. If you have any further questions please let me know.

In consideration of your recent request for additional information regarding the sources of data used in our Canadian research efforts, I have drafted the following letter. ERI does use data from government sources for the Salary Assessor in Canada. We have four sources of data in Canada. First, we purchase a custom data extract from Statistics Canada which provides us with greater detail than is available to the general public. Second, we use data published by individual provinces when it is available. Third, we conduct our own surveys through our survey arm, ERI Salary Surveys. Fourth, in places where we have a need for more data, we purchase salary survey data from reputable salary survey providers. The data we lease from Statistics Canada is our largest data source in Canada.

In the 26 years that we have been analyzing compensation data we have found that the use of multiple data sources yields more accurate results than any single data source. This increased accuracy is due to the larger volume of data that our methodology provides. Two of the strongest metrics pointing to the validity of our data are the number of subscribers, both corporate and government, who rely on our data, and our longevity. Approximately 10,000 entities subscribe to our databases and we have been providing data for 26 years, numbers that would likely not be possible with inaccurate data.

-----  
Our goal with the Salary Assessor and Executive Assessor is to provide results which accurately reflect the reality of compensation for an occupation by revenue/experience, industry, and geography. To reach this end, we collect and analyze salary survey and proxy data to accurately capture labor markets. Our methods do not rely on the calculation of simple means/medians with specific geographic boundaries or industries. We feel that this method is the purview of traditional salary surveys and is different from our analytical approach. Our analyses are designed to account for the fluid relationships between industry and geography when defining a labor market. When the labor market for executives such as CEOs is considered, the interaction between industry and geography changes in comparison to lower-level occupations. Specifically, our research has shown that executive occupations are frequently influenced by industry more than geography. This is because competition for executive labor frequently exists on a national level and industry knowledge is more frequently critical to success in these occupations. We are able to accurately capture the market rate for these occupations by expanding our analysis to other comparable organizations within the same industry. We are then able to capture geographic differences by examining local relative value patterns within the industry in question to other, related, industries.

These methods give us a clear picture of how a specific occupation exists within a labor market while accounting for differences which may exist between specific locations and industries. Over the years, the accuracy of these methods has been found to be quite accurate. The accuracy has been demonstrated by later salary surveys which have included the job in question and company/customer feedback.

#### **9-11-14**

The data in the Salary Assessor for Union, SC is indicative of the market rates for that location. I think some of the confusion may come from a misunderstanding of our methodology. The Salary Assessor is an analysis of salary survey data. Our goal is to accurately capture the current market rates for each occupation in each location. To reach this goal, we analyze our data with the understanding that Union, SC does not exist in a vacuum. By allowing our analyses to consider how this location fits into its broader geographic context we are able to provide salary figures for Union, SC that more closely match reality. In this manner, the results shown represent Union, SC, but we did not only use Union, SC data to reach those results.

#### **9-23-14**



## Data

- Data sourced from internal surveys, third party surveys, and public sources provide a robust sample.
- Validation has shown 99% agreement between Salary Assessor Results and time matched survey responses.
- ERI currently tracks 116,408 unique job titles. Only 5.7% or 6,682 of these titles meet our criteria for inclusion in the Salary Assessor.

## Experience

- **ERI does not consult. Our only business is data and we have built a reputation for excellence in that field. We would not have stayed in business for 27 years if we offered an inferior product.**
  - **We do not branch out from data because doing so would introduce conflicts of interest. We pride ourselves on our independence and objectivity.**
- **The underlying math requires specialized skills.**
  - **ERI continues to invest in the human capital required to properly conduct compensation research by employing PhD level researchers and MS level research analysts.**
- **ERI has the data, expertise, independence, and experience to conduct quality compensation research.**

The most recent data in the Salary Assessor is 90 days old at the time of publishing. This 90-day lag is required by law under the Sherman Antitrust Act and is something we follow to ensure that our customers don't run afoul of that law. This is one reason we use a time series methodology for the Salary Assessor. This method allows us to accurately report data that reflects the current market while still following the law. I recently did a study comparing salary surveys with the results of the Salary Assessor and found that the Salary Assessor predicted the results of our surveys with 99% accuracy. Please let me know if you have any additional questions.

## 11-18-14

The data in the Salary Assessor come from two distinct sources: internal and external salary surveys. We conduct the research for the internal salary surveys ourselves and we purchase or trade for external salary survey data with third party survey vendors. I can provide organization lists from surveys that we have collected internally, but due to confidentiality reasons I'm not able to share participant lists from the third party surveys. I'm happy to provide all of the information that is open, but I can't provide organization names from lists that are under confidentiality agreements. Please find this list of Canadian organizations attached with this email. If you have any additional questions please let me know.

## 1-21-15-like above, but more general

The data in the Salary Assessor come from three distinct sources: salary surveys that we conduct, salary surveys that we purchase, and publicly available data (proxies/10Ks, and 990s). We conduct the research for the internal salary surveys ourselves and we purchase or trade for external salary survey data with other survey vendors. Unfortunately, due to confidentiality reasons I'm not able to share participant lists from the third party surveys. Our confidentiality agreements with third party survey providers increase the volume of data that we are able to bring into the Salary Assessor. While I wish that we didn't have to rely on them to solicit data, the improvement in data quality that these agreements provide is a worthwhile compromise.

### **General description of the Salary Assessor**

The Salary Assessor is a time series analysis of salary survey data. The data in the Salary Assessor come from three distinct sources: internal salary surveys, external salary surveys, and publicly available data (e.g. form 990s and Proxies/10ks). We conduct the research for the internal salary surveys ourselves and we purchase or trade for external salary survey data with third party survey vendors. These data are employer provided and represent the occupation level (as opposed to job family data).

### **ERI's credibility**

In regards to credibility, ERI is highly regarded in the compensation community. In addition to our large databases, we view ourselves as independent researchers. This means that we do not engage in consulting activities to avoid conflicts of interest. We employ PhD level applied statisticians to ensure that our data are held to a consistent standard, and our 28 years in business have provided the experience to effectively analyze compensation data in varying market conditions. In sum, we have the data, independence, expertise, and experience to accomplish our mission. I view our reputation as a side effect of these details.

### **Commuting distance**

Larger cities, such as New York, have a real and measurable effect on surrounding communities. These effects are strongest for communities that are within commuting distance to the large city, and is something that our analyses take into account. Of course, salaries in New Jersey are not the same as those found in New York, but the city does exert salary pressure on local cities within commuting distance of New York. For our analyses, we examine data collected from individual cities and the amount of wage pressure exerted by New York on each city within commuting distance, which yields higher quality results than if we were to examine each smaller town in isolation.

### **Participant List letter**

Thank you for your question. The data in the Salary Assessor come from three distinct sources: internal salary surveys, external salary surveys, and publicly available sources (e.g. proxies/10Ks, 990s). We conduct the research for the internal salary surveys ourselves and we purchase or trade for external salary survey data with third party survey vendors. Due to confidentiality agreements, we are not permitted to release participation lists from third party vendors. However, I am happy to send you lists of all the information that I am permitted to provide. I created a list of the data you requested (eSIC: 8711) and attached it with this email.

### **Participant List Letter – No organizations**

Thank you for reaching out to us. The data in the Salary Assessor come from three distinct sources: internal salary surveys, external salary surveys, and publicly available sources (e.g. proxies/10Ks, 990s). We conduct the research for the internal salary surveys ourselves and we purchase or trade for external salary survey data with third party survey vendors. Due to confidentiality agreements, we are not permitted to release participation lists from third party vendors. Unfortunately, the data for this specific cut come from data that is governed by confidentiality agreements, so I am not able to provide this information. Please let me know if you would like to discuss this further and I'll be happy to speak with you.

---

## **The Annualized Salary Trend**

The annualized salary trend is an aging factor within the Salary Assessor. Essentially, we publish our data on the first day of each quarter and then those data are aged throughout the quarter using the annualized salary trend. The Rate values found in the Annualized salary trend window come from the Salary Increase Survey and represent the structure increase (as opposed to budget increase). You'll also notice that there is a salary range next to each percentage. This is how we determine which percentage to use for each job. If the mean salary for a given occupation falls within a given salary range on in the Annualized Salary Trend window, then the corresponding percentage is applied to that occupation as the aging factor. Of course, the actual percentage applied is based on the actual time between the date of publication and the planning date chosen. Thus, if an occupation is expected to grow at an annualized rate of 4% and 3 months have elapsed, then the occupation would actually be adjusted by 1%.

---

## **11-17-15**

Our goal with the Salary Assessor is to provide results which accurately reflect the reality of compensation for an occupation by revenue/experience, industry, and geography. To reach this end, we collect and analyze salary survey data to accurately capture labor markets. Our methods do not rely on the calculation of simple means/medians with specific geographic boundaries or industries. We feel that this method is the purview of traditional salary surveys and is different from our analytical approach.

There are a number of factors that enable us to report accurate salary figures for occupations in low population locations. Specifically, our research into the context of how each occupation fits into organizational structures, the influence of surrounding locations on compensation, and the varying relationship between industry and geography all give us information on the market conditions for an occupation in a single location. Below, I'll break down each aforementioned point and describe how it may be used to triangulate salaries in low population occupations.

### **Occupational Structure:**

The relationship of one occupation to its subordinate and superior are relatively consistent across geographies. By examining how occupations fit into larger scale organizational structures we can better understand how various occupations influence each other's compensation. For example, if we have data on the relationship between HR Manager, HR Director and VP HR for 1,000 organizations within a specific industry, we have a pretty good idea of what the salary of an HR Director should be given the salaries of an HR Manager and VP HR. In sum, we have found that an analysis that treats occupations as entities that exist within a larger structure is superior to analyses that only consider a single occupation.

### **Commuting distance:**

Similar to occupations, cities do not exist in a vacuum. The compensation in Ithaca is affected by the compensation practices of cities that are within commuting distance (about 1 hr drive). Cities that are within an hour of each other trade labor as residents of one city travel to another for work. Thus, organizations in the two cities compete for overlapping labor pools, which influences compensation practices in both places. The cities within commuting distance of Ithaca are influenced by Ithaca, and other cities within commuting distance. This means that Syracuse is within commuting distance of Ithaca and Rochester is within commuting distance of Syracuse. Thus, Rochester has an indirect effect on compensation practices in Ithaca. The influence of this network of commuting distances decreases as the number of steps from the central city increases, but there is still an effect. This role in the

relationship between geography and compensation helps us identify how an occupation fits into a local labor market.

#### **The varying relationship between occupational level and industry/geography:**

We have found the geography and industry both influence compensation, but the extent of their influence changes depending on the level of the occupation. Geography plays a very small role in the compensation of a CEO, but industry plays a significant role. This is because competition for executive labor frequently exists on a national level and industry knowledge is more frequently critical to success in these occupations. Conversely, the compensation of custodians is greatly influenced by geography, but the industry has little influence over compensation. Custodians in different industries are all paid similarly because the organizations are competing for the same local labor. Our analyses are designed to account for this fluid relationships between industry and geography when examining how an occupation exists in a labor market.

Taken together, these methods give us a clear picture of how a specific occupation exists within a labor market while accounting for differences which may exist between specific locations and industries. Over the years, the accuracy of these methods has been found to be quite accurate. The accuracy has been demonstrated by later salary surveys which have included the job in question and company/customer feedback. Please let me know if you have any additional questions.

#### **Budget increase vs Structure increase**

“Budget” and “Structure” represent two perspectives of salary growth. Budget is if we look at salary growth from an individual employee perspective and Structure is if we look at salary growth from an overall organization perspective.

I’ll provide an example to help clarify this. Let’s say a company has 10 accountants. They budget salary increases of 3% for 2017 and each accountant receives a 3% raise (This is the budget Increase). However, during this year one employee retires and another is leaves the company to work somewhere else. These two employees are then replaced with new employees who have lower salaries than the two individuals who left. At the end of 2017, when the company calculates the salary increase, they find that the average accountant salary has increased by 2% (This is the Structure increase).

#### **Refined Commuting distance:**

Here is a bit more information on this topic. The short answer is no, the data for Redwood city do not only come from Redwood city. However, I should note that our geographic analyses lead to higher quality data than if we analyzed each location in isolation.

Here’s a brief description of the logic behind our methodology and the process used:

Cities do not exist in a vacuum. They exist within the context of their local and regional economies. Specifically, compensation in Redwood Forest is affected by the compensation practices in cities that are within commuting distance (1 hr drive). Cities that are within an hour of each other trade labor as residents of one city travel to another for work. Thus, organizations in the two cities compete for overlapping labor pools, which influences compensation practices in both places. If the organizations in one of the cities neighboring Redwood city start paying higher rates, the citizens of Redwood City will commute and local companies will not be able to adequately hire talent without raising salaries. Of course, each city also has internal dynamics that shape the local labor market, which leads to real

differences in compensation between cities. We start with local data for each city and then analyze the similarities and differences between locations that are within the commuting distance. This allows us to put local data into a greater context.

### **Context discussion for Geography**

#### **How are you able to provide survey data for just about any city in the U.S.?**

We're able to provide this information because we do not analyze cities in isolation or in a vacuum. They exist within the context of their local and regional economies. For example, compensation in a city is affected by the compensation practices in cities that are within commuting distance (1 hour drive). Cities that are within an hour of each other trade labor as residents of one city travel to another for work. Thus, organizations in the two cities compete for overlapping labor pools, which influences compensation practices in both places. If the organizations in one of the cities neighboring the target city start paying higher rates, the citizens of the target city will commute and local companies will not be able to adequately hire talent without raising salaries. Of course, each city also has internal dynamics that shape the local labor market, which leads to real differences in compensation between cities. We start with local data for each city and then analyze the similarities and differences between locations that are within the commuting distance. This allows us to put local data into context and results in higher quality data. This idea of using data in context is a strategy we use throughout the Salary Assessor. We examine occupations in the context of time, geography, organizational structure, industry and other macro/micro economic conditions.

Overall, our goal with the Salary Assessor is to provide results which accurately reflect the reality of compensation for an occupation by revenue/experience, industry, and geography. To reach this end, we collect and analyze salary survey data to accurately capture labor markets. Our methods do not rely on the calculation of simple means/medians with specific geographic boundaries or industries. We feel that this method is the purview of traditional salary surveys and is different from our analytical approach.

### **Maturity Curves**

#### **How are you able to provide survey data for different size companies in all of these cities?**

We use maturity curves to calculate the rate of compensation growth as revenue increases for different occupations and industries. Specifically, we use a statistic called Cubic Spline Regression to examine how compensation grows as revenue increases. This maturity curve is then applied across geographies.

### **Salaries by Level**

When we analyze data by levels, we do not take years of experience into account. The level refers to the functional level of the employee within each occupation. Level 1 is analogous to a junior level and level 3 would be a more senior level. Years of experience are correlated with level, but there isn't a one to one relationship. For example, one employee might make level 3 within 5 years whereas another employee might spend 10 years at level 1. However, most employees will move up the levels as they increase in experience.

The underlying data and analyses for Salaries by Level are separated at the source from those in Salaries by Experience. The Salaries by Level data are based on employer-reported values within the surveys we utilize. We originally exclusively gathered years of experience data in the 1980s, but have collected level data since the late 1990s—we added these data to the Assessors in 2003. The Salaries by Level data are based on matching ERI Survey Descriptions with job/survey descriptions of available salary survey sources on a job-by-job basis.

For reference, below are the definitions we use:

Level 1 – Employees in this first (1st) level satisfy the basic job requirements. As the employee gains knowledge and experience, the work reviews, checks, and supervision may be reduced. Complexity or variety of work is typical, and there are no additional technical, mathematical, or scientific requirements beyond the basic requirements at this first (1st) level. Some organizations refer to level 1 as the entry level of the job.

Level 2 – Employees in this second (2nd) level require greater knowledge, training, and/or experience than level 1. The amount of work review, checks, and supervision are less for an employee at level 2 than at level 1. Complexity or variety of work is moderately higher than level 1 and may involve greater technical, mathematical, or scientific skills than level 1. Some organizations refer to level 2 as the intermediate level.

Level 3 – Employees in this third (3rd) level require greater knowledge, training, and/or experience than level 2. The amount of work review, checks, and supervision are less for an employee at level 3 than at level 2. Complexity or variety of work is higher than level 2 and may involve greater technical, mathematical, or scientific skills than level 2. The scope of assignments may vary when compared to level 2. Some organizations refer to level 3 as the senior level.

### **Extrapolation Example**

While we don't have 20 – 30 years of experience for this job it is possible to extrapolate the data. I should note, the maximum year of experience shown in the Salary Assessor is the highest year of experience for which we have sufficient data. For employees that have higher years of experience, a comp analyst may want to do an extrapolation of our data themselves. Extrapolations are less accurate, and the accuracy degrades the further a person extrapolates. Extrapolating 3 years may be reasonably accurate, but 15 years may not. You must weigh this before deciding whether to do an extrapolation of our data. Of course, ERI is not able to speak to the accuracy of data that has been extrapolated.

If you weigh these factors and decide to extrapolate years of experience, the following demonstrates how it's done. Please note that salaries do not increase at a steady rate over time. The yearly increase is generally smaller over time. The below formula takes this into account. I also created a dummy extrapolation in .xls to demonstrate this. Please find it attached.

Here's the math:

A=Salary at previous year (e.g. 18 years of experience if extrapolating to year 19)

B=Salary at previous year minus 1 (e.g. 17 years of experience if extrapolating to year 19)

C=Salary at previous year minus 2 (e.g. 16 years of experience if extrapolating to year 19)

Formula for each additional year of experience:

$A + ((A - B) - ((B - C) - (A - B)))$



**Default Years of Experience in Benchmark/Geo list**

Thank you for reaching out to us about this. The default salary level reported in the Benchmark List is the salary figure at the median years of experience, which can be thought of as the average salary for each occupation. This can be verified by clicking on the "Salaries by Experience/Size" tab and looking at the middle year of experience for each job. The reason the default year of experience changes for each job is because each job has a different maximum year of experience (based on data availability). Please let me know if you would like any additional detail on this.

**Number of organizations in X market**

We don't explicitly track the number of organizations in each market from survey to result. When we compile the salary surveys for the Salary Assessor we use the organization weighted average from each of the underlying surveys. The actual compilation process then uses the incumbent count to weight the survey results in the final analysis. The organization count doesn't make it through the analysis to the final tables. Unfortunately, this is not something we have available.

**Why is experience or revenue used?**

ERI analyzes data for lower level non-profit jobs by experience instead of budget. This is because we have found experience to be a better predictor of compensation for non-executive jobs. We could add budget to this analysis, but it is not worth the cost in terms of accuracy. Data analysis is a balancing act. Adding more variables allows for more targeted analyses, but the volume of data behind each result is smaller (which reduces accuracy). The key to maximizing accuracy is to target the variables that influence compensation, while avoiding variables that do not make a meaningful difference. In terms of lower levels jobs, we have found that budget does not have a meaningful impact on compensation, so we do not include that variable.

The size of an organization matters for executives, but competition is less size focused for lower level employees. If an accountant can make more money at a larger non-profit down the street, they will make that move. This is borne out in the data.

**Cubic Spline Explanation:**

The compensation figures at 500 million reflect compensation rates at that point. We analyze how compensation grows by revenue with an analysis called Cubic Spline Regression. Regression is a conditional mean, which tells us the mean at a given revenue point (revenue is the condition). The other two components of the analysis, cubic and spline, show us the growth curve across revenue (cubic), and insulates small (and large) organizations from differing compensation practices along the growth curve (spline). Please let me know if you have any additional questions.

**Cubic Spline – Less technical**

The data reported at 500 million represents organizations with 500 million in revenue. This figure is based on an analysis we conduct on compensation and revenue. Essentially, we analyze the data to determine how compensation changes as revenue grows. We also take a number of extra steps in this analysis to ensure accuracy. For example, we ensure that large and small organizations are insulated from one another and we account for curved growth patterns within the data. These analyses result in

figures that are more accurate than simple means. This is because we are accounting for additional factors that influence the data. Please let me know if you have any additional questions.

### **State Level Participant Lists**

We provide participant lists at a more general level to protect our customers' privacy. Many of our participants are very concerned about the security of their data so we maintain a streamlined participant list structure. Specifically, the data used for participant lists are stored on our servers with only company name, state, and eSIC code in a publicly available format. All other data unique to organizations are stored in an offline data vault.

---

### **Incentives**

- Yes, incentives are analyzed as a percentage of base salary. Percentage of base is a common method of reporting incentives and it works well for our specific analyses. We find that customers prefer nominal figures for incentives, so we do the calculation in our reporting.
  - Incentives are regressed against years of experience using a form of cubic regression. This allows us to examine how incentives change based on years of experience.
  - The distribution for each occupation is further examined to determine specific distributional features such as Standard Error, Skew, Kurtosis, and Heteroskedasticity.
- 

### **The participant list I received only has 5 companies on it, but the employee populations says there were 860-994 surveys incumbents. Why don't these match up?**

The participant lists we send out only include the disclosable participants we have in the system (participants from whom we've directly collected information). We often have many undisclosable participant data which we get from third party sources—these are locked by confidentiality agreements, and we are not able to share identifiable information from these companies for privacy concerns. That is why we show the values in the app, because we are able to separate the compensation data out without providing company-identifying information from our third-party data collection. In this effort, we are able to collect much more data for our analyses than we might be able to do directly—which provides us the pertinent information used in our analyses.

The data in our system come from two distinct sources: internal and external salary surveys. We conduct the research for the internal salary surveys ourselves, and we purchase or trade for external salary survey data with third party survey vendors where necessary. Industries and areas where we don't have much directly-collected data are targeted for survey purchases, and this is one of those industries. Due to confidentiality agreements, we are not permitted to release participation information from third party vendors.

We don't explicitly track the number of organizations in each market from survey to result. When we compile the salary surveys for the Salary Assessor, we use the organization weighted average from each of the underlying surveys. The actual compilation process then uses the incumbent count to weight the survey results in the final analysis. The organization count doesn't make it through the analysis to the final tables. More information on our methodology can be found in the SA Methodology document found in the help dropdown at the top-right corner of the app.

---

**What is the minimum number of companies that ERI requires before it develops geographical data. For instance, would they require responses from five employers prior to developing a scale for a particular market? Or, could a market be developed with one company response?**

ERI follows the industry standard of using data from a minimum of 5 companies in our Assessors. We achieve this by conducting internal surveys to get compensation information directly from employers and by purchasing or trading for trusted third-party surveys when necessary.

We abide by the Safe Harbor guidelines set-up by the Department of Justice and Federal Trade Commission in their Statements of Antitrust Enforcement Policy from 1996. You can read more about our interpretation of it in our blog post here <https://www.erieri.com/blog/post/how-to-select-and-use-compensation-surveys> (under the Safe Harbor header). I've also attached the antitrust guidance pdf put out by the DOJ for additional reference.

---

**For each city that ERI reports data out on, is there a minimum headcount that is used before ERI will show any data for a particular city?**

The minimum guidelines for a given city are 5 organizations. I should note, there are locations with data from 5 or 10 organizations that we do not publish. While the minimum is 5, the actual decision to include a location is based on multiple factors, including data quality, normality, and of course, volume.

---

**If you take a look at the attached reports, how can you justify the Assistant Controller's salary in comparison the Controller's salary? We feel like the Assistant Controller's results are high in this case.**

This is due to converging executive structures. As organizations decrease in size executive structures converge. Organizations at 4.9 million in revenue have fewer executive levels than large organizations and one or two people in the accounting function. Indeed, small organizations will generally not have Assistant Controllers at all. This is one of the reasons why revenue is less relevant to this occupation and why we analyze this job by years of experience. In this case I recommended that she use the Controller data because it is more tailored to an organization with 4.9 mil in revenue.

---

[HR Manager at 8yrs/med compared to HR Director at \$11M budget] **A subscriber reached out as he noticed that Human Resources Manager is benchmarking higher than Human Resources Director for most percentiles and he wanted to confirm if this was a discrepancy or if he can be provided an explanation as to why it might be appearing that way. His benchmark list is attached. May I please kindly have confirmation on the data?**

I understand that this may be surprising, but this scenario is surprisingly common. The first thing to note is that Human Resources Manager is analyzed by years of experience while the Human Resources Director is analyzed by the organization size (budget for the selected industry), so the two titles are shown using different scales. The second point is a matter of smaller leadership structure within smaller organizations. As organizations decrease in size, executive and management structures tend to converge. Smaller organizations tend to have fewer executive levels (paired with fewer

managerial/supervisor titles overall) than larger organizations. Indeed, small organizations may not have an HR Director along with an HR Manager, as one of those alone might feasibly handle the responsibilities of overseeing the department. With fewer than 100 employees, we might expect a single HR leader instead of 3 or 4 HR levels. This is one of the reasons why revenue is less relevant to the HR Manager occupation and why we analyze this job by years of experience.

---

[Sales Account Manager at 1yr/mean compared to Account Dir at \$2.5M] **The Account Director makes considerably less than the Account Manager. I tried running Director, Client Services as well and it also comes out as a lot less. Looking at base salaries only. Why might that be happening? Trying to explain the outcome to a client.**

I understand that this may be surprising, but this scenario is surprisingly common. The first thing to note is that Account Manager Sales is analyzed by years of experience while the Account Director is analyzed by the organization size, so the two titles are shown using different scales. The second point is a matter of smaller leadership structure within smaller organizations. As organizations decrease in size, executive and management structures tend to converge. Smaller organizations tend to have fewer executive levels (paired with fewer managerial/supervisor titles overall) than larger organizations. Indeed, small organizations may not have an Account Director along with an Account Manager Sales, as one of those alone might feasibly handle the responsibilities of overseeing the department. With fewer than 100 employees, we might expect a single department leader instead of 3 or 4 levels. This is one of the reasons why revenue is less relevant to the Account Manager Sales occupation and why we analyze this job by years of experience.

---

**If part of the selection criteria is revenue size (e.g., \$300M) – at that point, is that when you do the regression analysis to adjustment for revenue size?**

The revenue regression is applied to the analysis when the user selects a revenue in the app. We use maturity curves to calculate the rate of compensation growth as revenue increases for different occupations and industries. Specifically, we use a statistic called Cubic Spline Regression to examine how compensation grows as revenue increases.

---

**How do I know your data are valid for a given job?**

Standard salary surveys collect data from and report from a single unique sample each year. This is a valuable approach to researching compensation but has a number of potential problems. First, because the data reported in salary surveys are collected and reported independently each year, the year over year salaries have a relatively high level of variance. I have seen year over year variations in excess of 15,000 dollars for specific jobs, which makes accurate benchmarking challenging. This variance can also be seen between occupational structures. For example, it is not uncommon to see a level two accountant have a higher reported salary than a level three accountant, which is clearly not a reflection of reality. However, it is an accurate reporting of the data as it was collected that year. One of the reasons for this inconsistency is because surveys do not consider jobs in context. The true salary value for any job is influenced by the previous years' salaries for the individuals in that job. There are also relatively consistent relationships between a job's salary and the wages of a boss or subordinate.

Beyond these two examples, there are many other contextual variables that provide information relevant to a job's wages. I think about the data provided by salary surveys as a data point in space. It is a data point that has no relation to data collected in the past and no relationship with the reality of the job in an organizational structure. Salary survey data are very valuable, but they are one part of the overall picture for a job. We can be more accurate, and provide better coverage, if we consider each job in context.

At ERI, we use salary survey data, but we examine those data in the context of a given position. Specifically, we examine each job in relation to historical data, geographic data, industry data, and in relation to other jobs. Historical, geographic, and industrial relationships are relatively simple computations. If you need further clarification of this research please let me know.

I believe our quantification of the relationships between jobs require greater explanation. This is because any comparison of jobs, while valuable, has some potential pitfalls that need to be addressed before identification of structure can be successful. Specifically, we don't necessarily trust job structures defined by individual judgment. Specifically, individuals can be expected to have too many biases to reliably identify structures across many industries and job families. In order to reach these ends we acquired the job analysis firm PAQ. The data collected by this firm allows us to mathematically quantify the similarities and differences between jobs and more effectively identify hierarchical structures within job families. By examining all the Salary Assessor jobs with this job analysis tool across multiple cultures we are able provide an objective and quantifiable context for these jobs.

In sum, we are able to provide the job coverage you indicated by examining salary survey data over time and within the context of its structure, industry, and geography. It is true that we may not have salary survey data for every location every year, but by building an historical picture of the full context of the job we are able to provide an accurate and reliable analysis of salaries in various locations.

We have multiple analyses (each with unique data) that address the compensation of a specific occupation from multiple perspectives and act as checks and balances. Methodologically, we're establishing something called convergent validity. The occupations found in SA are those with a high level of convergence (or agreement) between analyses. Essentially, if multiple analyses independently reach the same answer we can have a high level of confidence in that answer. This is a well-established and accepted methodology within the research community.

If a job is showing in the Salary Assessor, we have current data for that job. We currently have data for 11,073 titles in Canada, which seems like a lot. However, this number only represents about 10% of the jobs that we track. We maintain a research list of 116,408 titles and of this list only the 11,073 titles that show in SA meet our criteria for inclusion. Specifically, we require stable, long term data sources for a job to show in SA. As a result of this strict requirement, we are able to consistently collect data for each job every year. We analyze nonprofit data with the same standards and consistency as with all for-profit industries; these data are broken out in our widely-used Nonprofit Comparables Assessor as well as used within the Salary Assessor.

---

### **Does eri track the percentage of companies from privately held vs publicly traded companies?**

It depends on the specific industry and revenue. Some industries have more publicly traded organizations and larger revenue sizes are generally public as well. However, our data are more

weighted towards private firms as a general rule. This is due to the size of each group. There are only about 6,000 publicly traded companies in the US and ~1 million private organizations with at least 50 employees. We have data for all publicly traded companies, but it's a smaller portion of our datasets because there are so few of these organizations.

---

**As I understand, the data that ERI uses comes from both Public and Private entities. Is there a way to filter the data to only look at one or the other?**

There is no way to filter the estimates to include only private or only public entities. The research that we have conducted indicates that there is not a significant difference in the dollar amount of packages for executives in each category.

While we can't provide much information about the private organizations in our database (due to confidentiality agreements), we actually have data for significantly more private organizations than public organizations. In our internal databases, we have data for nearly 45,000 for profit US Organizations, which includes only about 5,000 for profit organizations and 40,000 private organizations. With the addition of third-party salary surveys we purchase, the number of private organization data greatly increases.

---

**When I compare to what we pay and what my other surveys pay it seems very low. Especially for sales type people. Would there be a reason for this? I haven't been able to use the incentive comp piece for analysis I have been doing.**

When evaluating compensation from various sources, we analyze data from all incumbents, including those who do not receive incentive compensation. We do this so that the total compensation figures are more accurate to the market values--especially in sales, a job family which sees large variations in compensation practices across organizations. I'd recommend using total compensation figures in the assessors to get a better comparison between market values and those used in your organization.

---

**We [ERI sales] had an example of a Production Supervisor and their [customer] concern was they call it a production supervisor and provide wage data for it but in reality it would match to our production foreman and skew the data for this position. They were basically asking how we match participant descriptions to our descriptions. How do we match participant data to jobs in SA?**

The job matching question is a good one. Inaccurate job matching is the single largest opportunity for error in our research and we take the process seriously. We use a double blind matching process when matching survey data to the jobs in our database. Each job is assigned to two analysts who match the occupation to our database independently. When both analysts match the same ERI job, the job enters the database. Disagreements are then discussed before a final match is made based on mutual agreement. The data are discarded if there is no mutual agreement or if no match is made. Of course, all matches are made based on job description instead of job title. Job matching is one of our strengths. We spend considerable time training our analysts, and we have members with 25 years of experience matching. I don't get much of a chance to talk about it often, but I'm proud of our team's job matching



ability. The time and effort that we put into this process is one of the major reasons that our data are so accurate.

---

**Can you provide ERI's definition for "area" and "hybrid area"? and if possible an explanation why ERI provides Area wage data vs. CBSA wage data? For example ERI Area Abilene, TX vs. Abilene, TX Metropolitan Statistical Area (which incorporates Abilene, Clyde, Merkel, Stamford).**

ERI defines each city in the Assessors by latitude and longitude at the center point of each city. Compensation data are then associated with each location by participant response. Organizations know their location better than us, so we rely on participant input for the assignment of specific compensation data to a given city. We have found this method to result in more accurate data than other methods, like polygons. Government-defined areas, like the MSA, use polygon definitions that are a bit more general than our cities. Specifically, MSAs generally encompass a larger area than is typically defined by city boundaries. In this manner, an organization that considers itself in one city may be inadvertently assigned to another city because they are a mile or two over a neighboring MSA's boundary. User-defined averages, colloquially termed "Hybrid Areas", are the average of the outputs from the user-selected input areas. These are in place to allow users flexibility in their analytical needs.

---

## Questions

I was wondering if you may be able to help me out with another Salary Assessor scenario that I have run into recently that has warranted further investigation on our side.

I have a claim where the claimant is working in Sioux Falls, SD, as what was classified as a Light Truck Driver (906.683-022), and has been in the position for 3 years making slightly under \$21.00/hr. When using Salary Assessor for the area of Sioux Falls, SD and 3 yrs. of experience, it reflects the Median hourly wage of \$16.05 (7/1/20 version) and for 1 yr. of experience \$14.88/hr. (7/1/20 version). With further research the Median Hourly wage using 2019 BLS data is \$17.17/hr., which is over a \$2 difference from the Assessor's data for 1 yr. of experience. Due to such a discrepancy, a Labor Market Survey was conducted for the occupation within the Sioux Falls labor market, which resulted in the wage being identified as over \$21.00/hr. for a majority of the employers contacted.

1. How does Salary Assessor account for such a difference between 2019 BLS data and its own wage data with there being over a \$2.00 difference for 1 yr. of experience?
2. With including someone's experience (3 years in this example) how does the wage data in the Salary Assessor still come out below 2019 BLS data?
3. How often is the Salary Assessor wage data updated/surveyed to reflect current wages in a labor market?
4. Was there another way that I should have been using the Salary Assessor to reflect the true wages that were identified in the Sioux Falls Labor Market to reflect the wages being over \$21.00/hr.?

Thank you for any help you are able to provide. If any additional information or explanation from my ended is needed, please do not hesitate to reach out.

## Reply

This is a large question, so I have tried to be detailed in my answer. It's useful to consider the full scope of data sources when examining the differences between sources. For this reason, I want to provide some relevant background on ERI data and BLS data before discussing both sources together.

### ERI Data background:

Our data are reviewed and published quarterly to ensure accurate figures – more often when necessary, such as several mid-quarter pushes during the current circumstances. Our goal with the Salary Assessor is to provide results which accurately reflect the reality of compensation for an occupation by revenue/experience, industry, and geography. To reach this end, we collect and analyze salary survey data to accurately capture labor markets. Our methods do not rely on the calculation of simple means/medians with specific geographic boundaries or industries. Rather, we analyze data to understand the labor market in which an occupation is found. Specifically, our research focuses on the context of how each occupation fits into organizational structures, the influence of surrounding locations on compensation, and the varying relationship between industry and geography.

We use several methods of data collection to ensure that we have consistent data coverage from an industry and geographic perspective. Standard salary surveys collect data from and report from a single unique sample each year. This is a valuable approach to researching compensation but has a number of potential problems. First, because the data reported in salary surveys are collected and reported independently each year, the year over year salaries have a relatively high level of variance. We have seen year over year variations in excess of \$15,000 for specific jobs, which makes accurate benchmarking challenging. This variance can also be seen between occupational structures. For example, it is not uncommon to see a level two accountant have a higher reported salary than a level three accountant, which is clearly not a reflection of reality. However, it is an accurate reporting of the data as it was collected that year. One of the reasons for this inconsistency is because surveys do not consider jobs in context.

The true salary value for any job is influenced by the previous years' salaries for the individuals in that job. There are also relatively consistent relationships between a job's salary and the wages of a boss or subordinate. Beyond these two examples, there are many other contextual variables that provide information relevant to a job's wages. I think about the data provided by salary surveys as a data point in space. It is a data point that has no relation to data collected in the past and no relationship with the reality of the job in an organizational structure. Salary survey data are very valuable, but they are one part of the overall picture for a job. We can be more accurate and provide better coverage if we consider each job in context.

At ERI, we use salary survey data, but we examine those data in the context of a given position. Specifically, we examine each job in relation to historical data, geographic data, industry data, and in relation to other jobs. Let's examine our geographic analyses for an example of these context analyses. Similar to occupations, cities do not exist in a vacuum. The compensation in Sioux Falls is affected by the compensation practices of cities that are within commuting distance (about 1 hr drive). Cities that are within an hour of each other trade labor as residents of one city travel to another for work. Thus, organizations in the two cities compete for overlapping labor pools, which influences compensation practices in both places. The cities within commuting distance of Sioux Falls are influenced by Sioux Falls as well as other cities within commuting distance. This means that Brookings is within commuting distance of Sioux Falls and Watertown is within commuting distance of Brookings. Thus, Watertown has

an indirect effect on compensation practices in Sioux Falls. The influence of this network of commuting distances decreases as the number of steps from the central city increases, but there is still an effect. This role in the relationship between geography and compensation helps us identify how an occupation fits into a local labor market while considering the target city with context.

#### BLS data background:

There are specific applications (such as job counseling) where the use of BLS data does an excellent job fulfilling the needs of their customers. However, elements of the data collection process introduce error into the data which can create problems for market pricing tasks. The BLS questionnaire collects wage data by ranges, which means that the absolute accuracy of this salary survey is limited. Within the BLS salary survey, wage data are collected by job family instead of unique job.

Within a single job family, there may be jobs of multiple levels and multiple functions. The BLS publishes a list of “Lay Titles” which provides information on the unique jobs within each job family (as defined by the BLS). One potential problem arises when job family results are applied to individual level jobs. Essentially, this is comparing the average of several (related) jobs to a single occupation. If a greater proportion of the jobs in the family have higher (or lower) wages than your job of interest the value of the job family will be higher (or lower) than the job of interest. Unfortunately, without an external data source for individual level jobs, there is no way to tell if job family values are higher or lower than the job of interest. Statisticians refer to a comparison between an individual level variable and a group (family) level variable as a “levels of analysis” problem.

Additionally, the OES survey relies on a “head count” methodology instead of a traditional salary survey method. This methodology asks participants to list the number of employees within each range, which can limit the absolute accuracy of the results. I have attached a copy of the questionnaire with this email for your review.

#### Summary:

As noted above, there are significant differences in the methodologies between these two sources and it is not surprising that the results are different as well. We report the results of our analyses based on the data that have been provided through participation, as does the BLS. We believe that our methods give us a clear picture of how a specific occupation exists within a labor market while accounting for differences which may exist between specific locations and industries. Over the years, the results of these methods has been found to be quite accurate. The accuracy has been demonstrated through validation studies comparing time matched surveys. I have attached a copy of the most recent validation study with this email.

---

#### **Participant List – No Orgs**

Unfortunately, this is one of the industry-area combinations where we couldn't directly collect data, and had to purchase external surveys, where participants' details are locked by confidentiality agreements. Only participants from whom we directly collect data, and who have given explicit consent, go into our disclosable participant lists.

The data in our system come from two distinct sources: internal and external salary surveys. We conduct the research for the internal salary surveys ourselves, and we purchase or trade for external salary survey data with third party survey vendors where necessary. Industries and areas where we don't have

much directly-collected data are targeted for survey purchases, and this is one of those industries. Due to confidentiality agreements, we are not permitted to release participation lists from third party vendors.

---

### **Participant List – Changed Area to US**

This is an area-industry combination for which we've had to purchase 3rd party data in the area-industry combination requested, so I've attached the directly-collected participant list for the US instead.

Unfortunately, this is one of the industries where we couldn't collect data directly from participants to our level of expectation, and had to purchase external surveys where participants' details are locked by confidentiality agreements. Only participants from whom we directly collect data, and who have given explicit consent, go into our disclosable participant lists. The data in the Salary Assessor come from three distinct sources: salary surveys that we conduct, salary surveys that we purchase, and publicly available data (proxies/10Ks, and 990s). We conduct the research for the internal salary surveys ourselves, and we purchase or trade for external salary survey data with third party survey vendors where necessary. Industries and areas where we don't have much directly-collected data are targeted for survey purchases, and this is one of those industries. Due to confidentiality agreements, we are not permitted to release participation lists from third party vendors.

---

### **Participant List – Unavailable industry-area combination**

This is an industry-area combination we've had to target for survey purchase through third-party vendors. Industries and areas where we don't have much directly-collected data are targeted for survey purchases, and this is one of those cases. Unfortunately, this means that we are unable to release a participant list since the participants' data from these purchases are locked under confidentiality agreements we hold with the survey vendors. Our confidentiality agreements with third party survey providers increase the volume of data that we are able to bring into the Salary Assessor.

---

### **How do you classify High Incentive jobs?**

High incentive titles are not all held to the same standard in their analyses, they are created and maintained on a title-by-title basis. We analyze all incentives for titles as a percentage of base salary. In cases where we observe bi-modal distribution of incentive pay during an individual title's compensation analysis, and were able to clearly identify one mode as a higher incentive classification, we've created a new title as "High Incentive" for the given title. The distribution for each occupation is then further examined to determine specific distributional features such as Standard Error, Skew, Kurtosis, and Heteroskedasticity.

---

### **How do you age your market data or where to go get the information to age it?**

There are two main methods that ERI uses to age data. The first method is conducted prior to data publication and is found in the data published on the first day of each quarter. The second is designed to age the data throughout the quarter after data publication. I'll outline each approach below.

#### Published Data - Released Quarterly:

ERI uses a time series analysis to determine the growth rates for individual occupations. This analysis is essentially a longitudinal meta-analysis of multiple salary surveys, which allows us to predict compensation rates more accurately. The data going into these analyses are updated twice per quarter. Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well. There is a bit of calculus involved, but the question we're answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. I recently conducted a validation study to measure the accuracy of these methods, which indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email.

#### After data have been published:

Data are aged within the software using the "annualized salary trend" tool. Essentially, we publish our data on the first day of each quarter and then those data are aged throughout the quarter using the annualized salary trend. Clicking on the "Adjust" button under the Annualized Salary Trend will allow you to follow the following logic. The Rate values found in the Annualized salary trend window come from the Salary Increase Survey and represent the structure increase (as opposed to Budget increase). You'll also notice that there is a salary range next to each percentage. This is how we determine which percentage to use for each job. If the mean salary for a given occupation falls within a given salary range on in the Annualized Salary Trend window, then the corresponding percentage is applied to that occupation as the aging factor. Of course the actual percentage applied is based on the actual time between the date of publication and the planning date chosen. Thus, if an occupation is expected to grow at an annualized rate of 4% and 3 months have elapsed, then the occupation would actually be adjusted by 1%.

---

**I would have thought there would be differences between all education levels and even between years of experience since years of experience can replace education. Why are there some education levels with no change and some with changes?**

We analyze the rate of change across education levels for each occupation using an analysis that considers each education level for each job independently. For example, there is a measurable difference in compensation between BS and MS for Program Manager, but a doctoral degree doesn't increase compensation further. Likewise, there is no difference in compensation for lower levels of education. This lack of difference at lower levels is found because there are so few Program Managers with education lower than a BS.

Also, for some occupations there is no significant change in compensation across the full range of education levels. This is generally found in lower-level occupations that have a narrow focus. A Cab Driver with a Ph.D. will earn the same as a Cab Driver without. Cab Driver is a more dramatic example of this principle, but there are many other occupations that follow this pattern.

---

## **Why are these compensation values decreasing year over year?**

The slow movement of some compensation values and dipping of others isn't surprising. We often note that jobs don't all increase or decrease as a consistent rate; overall, jobs move independently of each other, not together all in a straight line which the inflation rate may suggest. This is why we review and release our data quarterly, making sure we keep up with current figures across all jobs, industries, and areas.

### **> Low-level specific**

I've looked into the figures and this is a standard pattern to be expected, especially for lower-level jobs such as those you've noted on these reports. There are ups and downs with many occupations, some taking years before seeing an increase. Lower-level jobs are often more susceptible to competition in their respective markets. The slow movement of some compensation values and dipping of others isn't surprising. We often note that jobs don't all increase or decrease as a consistent rate as seen by the increases of some jobs and areas where others are declining year-over-year. Overall, jobs move independently of each other, not together all in a straight line. This is why we review and release our data quarterly, making sure we keep up with current figures across all jobs, industries, and areas.

---

## **Comp values are high YOY**

We don't know an exact reason for why YOY values are high for any particular year, but we can make some educated guesses. For example, the unemployment rate is at 4.4%, low by historical standards. This can force organizations to compete for talent, and we might see this manifest in compensation rates. Right now, we are seeing companies likely being forced to increase compensation rates to acquire or retain quality talent. You're right on the money, so to speak, about supply and demand being the most likely reason for these rate spikes. While surprising, it is expected to see some compensation rates increase sharply during highly competitive quarters, particularly for those of very in-demand titles.

---

## **Why is ERI data higher than competitors?**

Thank you for forwarding this note. We have noticed the difference you mentioned and it appears that this is due to differences in methodology. ERI uses employer-reported data and the two sources you mentioned use an employee reported methodology. To research the difference in these two methodologies ERI set up a website called SalaryExpert.com. This website asks visitors for their salaries in return for market data for the occupation in question. We found that the data collected from employees was lower than the data collected from HR departments. This difference appears to be due to differences in the types of employees targeted. HR departments send data for the full range of employees within an organization, but it appears that employee focused websites are more likely to attract employees who are paid under market. Employees at the higher end of the compensation spectrum do not appear to visit the SalaryExpert site at the same rate as those at the opposite end of the spectrum. For this reason, ERI has elected to continue focusing on employer reported data.

.....



**When using our current salary assessor module, we're noticing that the comp is significantly higher compared to other surveys he has seen. Do you know why this might be and do you think that would be the case for the executive assessor also?**

There are a number of aspects that account for the differences in reported compensation between salary surveys. Other salary survey sources and software appear to source data from employee-reported data as opposed to employer-reported data. We have examined this methodology, and we started the SalaryExpert.com website to collect employee-reported data. However, we found that data collected from employees tends to be lower than compensation figures collected from Employers. We believe this is because Employer reported sources come from HR departments and reflect the full range of compensation in an organization, which is not found with employee-focused methodologies. Higher compensated employees appear to be less likely to visit employee-focused sites, which tend to attract employees who are at the lower end of the pay scale for a given occupation. This is why we continue to focus on employer-reported data. Furthermore, other salary surveys sometimes conflate one job with a similar job and average the salaries – i.e. grouping salary of a Vice President with a Chief Executive Officer, which would lower the estimated salary for a Chief Executive Officer in this case. ERI data are specific to the surveyed job. Also, many surveys report the national average compensation for a job, whereas with the ERI platform, there are several criteria factored into the compensation estimates (specific location, industry, planning date). ERI data are more granular – the national average that is often reported on other surveys is typically lower than a specific location, particularly if the specific location is a metropolitan area with a competitive job market.

.....

**We did a Civil Engineer to Denver, and she was surprised by how much higher the numbers are than their current Payscale data is showing.**

We have noticed this difference Rebecca noted with Payscale, and we conducted some research into why this is occurring. It appears that this is due to differences in methodology. ERI uses employer reported data and the source she mentioned uses employee reports for a portion of their data. To research the difference in these two methodologies ERI set up a website called SalaryExpert.com. This website asks visitors for their salaries in return for market data for the occupation in question. We found that the data collected from employees was lower than the data collected from HR departments. This discrepancy appears to be due to differences in the types of employees targeted. HR departments send data for the full range of employees within an organization, but it appears that employee focused websites are more likely to attract employees who are paid under market. Employees at the higher end of the compensation spectrum do not appear to visit the SalaryExpert site at the same rate as those at the opposite end of the spectrum. For this reason, ERI has elected to continue focusing on employer reported data.

The ACEC Colorado Survey contains multiple highlighted sections: compensation for Engineering Interns 3 (EI-3) and compensation for Project Engineer (PE-1). Based on the supplied job descriptions in the survey, our Civil Engineer role is more like a Senior Project Engineer (PE-2), especially at 5 years of experience. I've attached a result for our Civil Engineer at the Colorado State average, and the estimates are pretty close to the (PE-2) in the Civil engineering discipline from that report. While I've attached our full methodology for Rebecca to review, it is worth noting that the Salary Assessor is a higher-level data analysis of compensation surveys. Essentially, we gather salary surveys from multiple industries and locations and analyze the data to provide reliable salary information for our customers. We run roughly

300 separate analyses on the data contained in our databases. Data are primarily collected through three survey companies that are owned by ERI. We also collect compensation data through publicly-traded organization's proxies. Additionally, we purchase data through third party salary survey vendors. Overall, our databases represent roughly 60 million incumbents. I've attached a participant list of the 79 companies in Colorado in eSIC 8710 from which we've directly collected compensation data. Please note that this list represents a subset of the companies whose compensation data we've gathered directly. We cannot disclose names of companies surveyed in the third-party surveys we purchase due to confidentiality agreements we have entered with those vendors.

---

**What are the total number of organizations from which you've collected data? How can I trust ERI data if I don't have these numbers?**

We do not explicitly track the number of organizations in each market from survey to result. When we compile the salary surveys for the Salary Assessor we use the organization weighted average from each of the underlying surveys. The actual compilation process then uses the incumbent count to weight the survey results in the final analysis. The organization count doesn't make it through the analysis to the final tables.

We provide participant lists at a more general level to protect our customers' privacy. Many of our participants are very concerned about the security of their data so we maintain a streamlined participant list structure. Specifically, the data used for participant lists are stored on our servers with only company name, state, and eSIC code in a publicly available format. All other data unique to organizations are stored in an offline data vault. We are able to share participant lists for those from whom we've directly collected data, but we are not able to track total number of organizations or public vs private totals as that is not within the practice of our methodology.

Our goal with the Salary Assessor and Executive Assessor is to provide results which accurately reflect the reality of compensation for an occupation by revenue/experience, industry, and geography. To reach this end, we collect and analyze salary survey and proxy data to accurately capture labor markets. Our methods do not rely on the calculation of simple means/medians with specific geographic boundaries or industries. We feel that this method is the purview of traditional salary surveys and is different from our analytical approach. Traditional salary surveys report participant data for their direct participants, and we do the same at ERI by releasing participant lists containing the organizations from whom we've directly collected data.

The data in the Salary Assessor come from three distinct sources: salary surveys that we conduct, salary surveys that we purchase, and publicly available data (proxies/10Ks, and 990s). We conduct the research for the internal salary surveys ourselves and we purchase or trade for external salary survey data with other survey vendors. Due to confidentiality reasons, we are not able to share participant lists from the third party surveys. Our confidentiality agreements with third party survey providers increase the volume of data that we are able to bring into the Salary Assessor.

In regards to credibility, ERI is highly regarded in the compensation community. In addition to our large databases, we view ourselves as independent researchers. This means that we do not engage in consulting activities to avoid conflicts of interest. We employ PhD level applied statisticians to ensure that our data are held to a consistent standard, and our 30 years in business have provided the experience to effectively analyze compensation data in varying market conditions. In sum, we have the

data, independence, expertise, and experience to accomplish our mission. I view our reputation as a side effect of these details.

We have taken the time to conduct a validation study on our methodology and I've attached the results of the study to this email for your reference.

---

**Are your salary reports accepted by the Department of Labor (DOL) for a Labor Condition Application and for an H-1B visa application?**

The DOL does not accept ERI or any other source (beyond the OES survey) for H1-B purposes.

Our data analysts confirmed that the DOL does not accept ERI surveys and they are not aware of any sources beyond the ones that they typically accept for immigration proposes. I apologize we may not be of more help for your intended survey needs.

---

**If private clinics data are in the survey, are dividends from the clinics included in the results?**

Dividends aren't included in these compensation figures.

---

**Why doesn't the compensation for ECG Technician change when I change the industry or area?**

With the title ECG Technician, the "industry breakout not available" warning will appear regardless of selected location and industry. This is because the occupation ECG Technician does not have an industry analysis breakout for various industries. Some occupations, such as this one, only have meaningful numbers in a single industry and can't be analyzed by different industries. This is denoted by the message "Industry Breakout not available" in the Salary Assessor. Because this title only exists in the healthcare industry, the compensation data will not change based on the industry selected.

---

**Industry breakout not available - general**

The "industry breakout not available" warning will appear when the occupation selected does not have an industry analysis breakout for various industries. The warning will appear regardless of selected location and industry. Some occupations, such as this one, only have meaningful numbers in a single industry and can't be analyzed by different industries. This is denoted by the message "Industry Breakout not available" in the Salary Assessor.

---

**Where does the data come from? I know three sources but additional clarification would be appreciated on each. I understand updated data is available each quarter and it is aged in between based on the annual salary increase survey information. But anything else I can share with my boss to**

**assure him this is current and applicable information? How is the data calculated when there isn't enough data results for a specific area?**

There are a lot of components to hit when talking about our data background and methodology, so I've formatted the response below to try to reflect the parts of the questions in your original email. Please feel free to let us know if you have any other questions.

#### Data Sources and Background

Our data are reviewed and published quarterly to ensure accurate figures – more often when necessary, such as several mid-quarter pushes during the current circumstances. Our goal with the Salary Assessor is to provide results which accurately reflect the reality of compensation for an occupation by revenue/experience, industry, and geography. To reach this end, we collect and analyze salary survey data to accurately capture labor markets. Our methods do not rely on the calculation of simple means/medians with specific geographic boundaries or industries. Rather, we analyze data to understand the labor market in which an occupation is found. Specifically, our research focuses on the context of how each occupation fits into organizational structures, the influence of surrounding locations on compensation, and the varying relationship between industry and geography.

The data in the Salary Assessor come from three distinct sources: internal salary surveys, external salary surveys, and publicly available data (e.g. form 990s and Proxies/10ks). We conduct the research for the internal salary surveys ourselves and we purchase or trade for external salary survey data with third party survey vendors. These data are employer provided and represent the occupation level (as opposed to job family data).

In regards to credibility, ERI is highly regarded in the compensation community. In addition to our large databases, we view ourselves as independent researchers. This means that we do not engage in consulting activities to avoid conflicts of interest. We employ PhD level applied statisticians to ensure that our data are held to a consistent standard, and our 30 years in business have provided the experience to effectively analyze compensation data in varying market conditions. In sum, we have the data, independence, expertise, and experience to accomplish our mission. I view our reputation as a side effect of these details.

#### Data Availability and Aging

There are two main methods that ERI uses to age data. The first method is conducted prior to data publication and is found in the data published on the first day of each quarter. The second is designed to age the data throughout the quarter after data publication. I'll outline each approach below.

##### **Published Data - Released Quarterly:**

ERI uses a time series analysis to determine the growth rates for individual occupations. This analysis is essentially a longitudinal meta-analysis of multiple salary surveys, which allows us to predict compensation rates more accurately. The data going into these analyses are updated twice per quarter. Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well. There is a bit of calculus involved, but the question we're answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. We've conducted a validation study to measure the accuracy of these methods, which indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email.

After data have been published:

Data are aged within the software using the “annualized salary trend” tool. Essentially, we publish our data on the first day of each quarter and then those data are aged throughout the quarter using the annualized salary trend. Clicking on the “Adjust” button under the Annualized Salary Trend will allow you to follow the following logic. The Rate values found in the Annualized salary trend window come from the Salary Increase Survey and represent the structure increase (as opposed to Budget increase). You’ll also notice that there is a salary range next to each percentage. This is how we determine which percentage to use for each job. If the mean salary for a given occupation falls within a given salary range on in the Annualized Salary Trend window, then the corresponding percentage is applied to that occupation as the aging factor. Of course, the actual percentage applied is based on the actual time between the date of publication and the planning date chosen. Thus, if an occupation is expected to grow at an annualized rate of 4% and 3 months have elapsed, then the occupation would actually be adjusted by 1%.

#### Contiguous Area Calculations

In cases where we see a need to analyze more data for a specific job-area combination, ERI will utilize pay relationships of nearby comparable or contiguous areas in its analysis of geographic pay patterns. The normative data from these sources permit us to derive geographic pay differential patterns which can be applied to the specific job which was not surveyed. This concept is based on the principle of relative value patterns of jobs of nearby comparable or contiguous areas. Thus, the wage values ERI shows for the job not surveyed is calculated based on the same relative value of the job in question to other jobs as they exist in comparable/contiguous areas.

We’re able to provide this information because we do not analyze cities in isolation or in a vacuum. They exist within the context of their local and regional economies. For example, compensation in a city is affected by the compensation practices in cities that are within commuting distance (1 hour drive). Cities that are within an hour of each other trade labor as residents of one city travel to another for work. Thus, organizations in the two cities compete for overlapping labor pools, which influences compensation practices in both places. If the organizations in one of the cities neighboring the target city start paying higher rates, the citizens of the target city will commute, and local companies will not be able to adequately hire talent without raising salaries. Of course, each city also has internal dynamics that shape the local labor market, which leads to real differences in compensation between cities. We start with local data for each city and then analyze the similarities and differences between locations that are within the commuting distance. This allows us to put local data into context and results in higher quality data. This idea of using data in context is a strategy we use throughout the Salary Assessor. We examine occupations in the context of time, geography, organizational structure, industry, and other macro/micro economic conditions.

---

**[like above, replace geo with regression explanation] Do you have any other information I can provide my boss on the methodology on how this data is collected? He didn’t give me any specific questions yet. He’s a very analytical person so I’m sure it’s about how the data is collected and how authentic is it.**

I’ve attached our methodology document to this email which will provide additional details for the topics I discuss below; this document can also be found in the help dropdown of the Assessors, in case

you need to download it at a later time. Because there are a lot of topics to cover, I've broken the following response into sections for more clarity.

#### Data Sources and Background

Our data are reviewed and published quarterly to ensure accurate figures – more often when necessary, such as several mid-quarter pushes during the current circumstances. Our goal with the Salary Assessor is to provide results which accurately reflect the reality of compensation for an occupation by revenue/experience, industry, and geography. To reach this end, we collect and analyze salary survey data to accurately capture labor markets. Our methods do not rely on the calculation of simple means/medians with specific geographic boundaries or industries. Rather, we analyze data to understand the labor market in which an occupation is found. Specifically, our research focuses on the context of how each occupation fits into organizational structures, the influence of surrounding locations on compensation, and the varying relationship between industry and geography.

The data in the Salary Assessor come from three distinct sources: internal salary surveys, external salary surveys, and publicly available data (e.g. form 990s and Proxies/10ks). We conduct the research for the internal salary surveys ourselves and we purchase or trade for external salary survey data with third party survey vendors. These data are employer provided and represent the occupation level (as opposed to job family data).

In regards to credibility, ERI is highly regarded in the compensation community. In addition to our large databases, we view ourselves as independent researchers. This means that we do not engage in consulting activities to avoid conflicts of interest. We employ PhD level applied statisticians to ensure that our data are held to a consistent standard, and our 30 years in business have provided the experience to effectively analyze compensation data in varying market conditions. In sum, we have the data, independence, expertise, and experience to accomplish our mission. I view our reputation as a side effect of these details.

#### Analyses Methodology

Our primary analyses are conducted using several different types of analysis. We use cubic spline regression for years of experience and revenue. This is a type of analysis allows for wages to increase at different rates for different years of experience/revenue. Standard regression is used for differentiation between geographic areas. We differentiate between industries with polynomial regression.

ERI uses a time series analysis to determine the growth rates for individual occupations. This analysis is essentially a longitudinal meta-analysis of multiple salary surveys, which allows us to predict compensation rates more accurately. The data going into these analyses are updated each quarter. Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well. There is a bit of calculus involved, but the question we're answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. We've conducted a validation study to measure the accuracy of these methods, which indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email.

We use maturity curves to calculate the rate of compensation growth as revenue increases for different occupations and industries. Specifically, we use a statistic called Cubic Spline Regression to examine how compensation grows as revenue increases. This maturity curve is then applied across geographies. Regression, as a conditional mean, tells us the mean at a given revenue point (revenue is the condition).



The other two components of the analysis, cubic and spline, show us the growth curve across revenue (cubic), and insulates small (and large) organizations from differing compensation practices along the growth curve (spline).

---

**This organization has a fiscal year budget (operating budget) of \$4.5M. So, when I pull in data on Director level and above roles, is the data I'm looking at for median, etc. based on other organizations within that industry (non-profit services) and geo area, am I looking at data for only organizations that have reported \$4.5M for fiscal year budget, or is organizations that have reported a fiscal year budget around some range...with \$4.5M being in the middle?**

We use maturity curves to calculate the rate of compensation growth as revenue increases for different occupations and industries. Specifically, we use a statistic called Cubic Spline Regression to examine how compensation grows as revenue increases. The data reported at \$4.5 million represents organizations with \$4.5 million in revenue. This figure is based on an analysis we conduct on compensation and revenue. Essentially, we analyze the data to determine how compensation changes as revenue grows. We also take a number of extra steps in this analysis to ensure accuracy. For example, we ensure that large and small organizations are insulated from one another and we account for curved growth patterns within the data. These analyses result in figures that are more accurate than simple means. This is because we are accounting for additional factors that influence the data.

---

**Today I had a demo for a client looking at the Salary Assessor - specifically for non profit data (all positions). While sorting the salaries by # of employees, he mentioned in other systems he's typically seen them grouped by a range of employees rather than a number. IE 0-50 employees, 50-100, etc.**

**What exactly does the system do here when provided with a count within a small delta of a number of employees? Can you help provide some insight into how these numbers are crunched on the back end when handling these relatively small deviations in employee count for non profits?**

This is a common question, because many users are familiar with salary surveys, where a range of organization sizes are included for each compensation estimate. Our analysis does not work in this way. The Salary Assessor and Executive Compensation Assessor are a higher-level data analysis of compensation surveys. Essentially, we gather salary data from multiple industries and locations and analyze the data to provide reliable salary information for our customers. Our data comes from internal salary surveys, salary surveys we purchase from third parties, and publicly available data. Overall, our databases represent roughly 60 million incumbents.

We use regression with all the data, by job, to create a relationship between company size and executive pay. When you set the Number of Employees to 500, your answer is the result of our regression line at exactly 500 employees. Thanks to the beauty of regression, those companies with organization sizes near 500 employees are more heavily weighted in your answer than are companies far away from 500 employees.

---

## **What is the renter's cost of living displaying in the Geographic List?**

The Renter's Cost of Living value is influenced by the selection of Position, Area, and Industry. There are no effects from years of experience, but revenue does have an effect for revenue-based positions. In the Salary Assessor's Geographic List, the Renter's Cost of Living comes from analyses which feed ERI's Relocation Assessor. It represents a comparison for a given area to the National Average given the mean salary for the selected occupation. This field allows users to compare salary to cost of living given a common benchmark (National Average).

ERI collects, compiles, and analyzes data relating to cost of living from available sources and researches areas which are not commonly surveyed individually. A different regression model is used for each of the separate cost-of-living categories to predict the movement of costs across size, spending level, time, etc. We download actual housing data from commercially available sources. Gasoline, consumables, medical care premium costs, and effective income tax rates are also just as accurately collected from authoritative online databases, and ERI research staff audit these sources with special area research projects.

---

**We used the transformer assembler as a benchmark for our positions as that is exactly what we do, however in Canada there are not a significant number of facilities that build transformers so we are looking to better understand how the comparators would work as we know in some of the areas the transformer manufacturers would be limited.**

The short answer is that we will utilize job compensation data from comparable organizations and locations to fill in gaps where we aren't able to directly collect survey data for a given job-area combination. We also apply time series analyses to salary survey data in order to put jobs into context using past and present data points—thus, even if we aren't able to collect survey data for a job in a specified location in a single year, we are able to contextualize it using data from past years. These multifaceted analyses are a cornerstone of how we provide data coverage for all the titles and areas within the Salary Assessor.

In cases where we see a need to analyze more data for a specific job-area combination, ERI will utilize pay relationships of nearby comparable or contiguous areas in its analysis of geographic pay patterns. The normative data from these sources permit us to derive geographic pay differential patterns which can be applied to the specific job which was not surveyed. This concept is based on the principle of relative value patterns of jobs of nearby comparable or contiguous areas. Thus, the wage values ERI shows for the job not surveyed is calculated based on the same relative value of the job in question to other jobs as they exist in comparable/contiguous areas.

We are able to provide the job coverage by examining salary survey data over time and within the context of its structure, industry, and geography. It is true that we may not have salary survey data for every location every year, but by building an historical picture of the full context of the job we are able to provide an accurate and reliable analysis of salaries in various locations. We have multiple analyses (each with unique data) that address the compensation of a specific occupation from multiple perspectives and act as checks and balances. Methodologically, we're establishing something called convergent validity. The occupations found in SA are those with a high level of convergence (or agreement) between analyses. Essentially, if multiple analyses independently reach the same answer,

we can have a high level of confidence in that answer. This is a well-established and accepted methodology within the research community.

If a job is showing in the Salary Assessor, we have current data for that job. We currently have data for 11,630 titles in Canada, but this number only represents about 10% of the jobs that we track overall. We maintain a research list of 116,408 titles and of this list only the 11,630 titles that show in SA meet our criteria for inclusion. Specifically, we require stable, long term data sources for a job to show in SA. As a result of this strict requirement, we are able to consistently collect data for each job every year. These methods give us a clear picture of how a specific occupation exists within a labor market while accounting for differences which may exist between specific locations and industries.

---

**I'm just curious to when you pull a report (for example I am looking at a Director of HR and a VP of HR in Sacramento) the 10th and 25th percentile is lower for the VP of HR than it is for the Director. I was just trying to understand the methodology behind the computation as I would have expected the VP to be higher in each percentile.**

I understand that this may be surprising, but this scenario is surprisingly common. There are two factors going on here. Increased variability in compensation at higher executive levels and decreased executive structures as organizations get smaller. These two factors work together to create the below situation. I'll outline each point below.

1. We have found that the range of compensation (low to high) increases as individuals move up an organization's hierarchy even though the mean compensation tends to increase.
2. Smaller organizations tend to have fewer executives than larger organizations. This means that there is a smaller executive structure in these organizations. With 150 employees we might expect a single HR executive instead of 3 or 4 HR executive levels.

You'll notice that these two jobs have mean salaries that are very close, which means that the compensation levels have started to converge. It is likely that the organizations who provide data for each of these employees do not overlap. On average, the title will carry a slight increase over the director, but not in every case. In some cases, organization will compensate employees with larger titles instead of compensation. This title inflation is likely why the low end of VP HR is lower than the Director level. We're seeing compensation with titles instead of dollars. This strategy is particularly common in smaller non-profits.

---

**I saw that ERI partners with Guidepost [nonprofit] and I feel that the salaries I'm seeing aren't as relevant to non-profit salaries. I'd like to see the guidepost non-profit information, if possible.**

While we aren't able to provide specific organizations' data in the Salary Assessor, I'd recommend narrowing down the compensation variables as much as possible by taking a look at the industry and area where the requested organization is found. In this case, I'd suggest taking a look at the industry code eSIC 8661 - Christianity Entities. Narrowing down the industry and area are the best ways to get the most accurate compensation information for a specific title in our system. I've attached the participant list for eSIC 8661 in Connecticut to this email for your reference and I've put a screenshot

from the Assessor below my signature for the Area and Industry customization areas I recommend narrowing down. The industry code for capturing Nonprofit Services is eSIC 7400, and all industries can be searched using the Browse button under the Industry selection area.

Our goal with the Salary Assessor and Executive Assessor is to provide results which accurately reflect the reality of compensation for an occupation by revenue/experience, industry, and geography. To reach this end, we collect and analyze salary survey and proxy data to accurately capture labor markets. Our methods do not rely on the calculation of simple means/medians with specific geographic boundaries or industries. We feel that this method is the purview of traditional salary surveys and is different from our analytical approach. Traditional salary surveys report participant data for their direct participants, and we do the same at ERI by releasing participant lists containing the organizations from whom we've directly collected data. We analyze nonprofit data with the same standards and consistency as with all for-profit industries; these data are broken out in our widely-used Nonprofit Comparables Assessor as well as used within the Salary Assessor.

---

**I know that you had said that you compare your data to previous quarters and use external surveys, but I was wondering if you could speak a little more as to how you are validating the data you collect, especially from the external surveys? Do you have independent validation, ie do you call companies? Do companies report the data or do individuals? Are there follow up questions that are asked by ERI such as, who gets the survey, why are they responding to the survey, what do they get for the survey? How do you validate to ensure the data is accurate? Also, what type of data review does ERI do? Do they clean the data to get rid of outliers? How does ERI ensure data integrity?**

This is a great question. There are many dimensions of validation to consider, ranging from survey selection to the accuracy of final results. If we want to have any expectation of quality, then we need to carefully consider this question at each step of our process. Below, I outline each main step of our process and how we ensure accuracy in each.

#### **Underlying Surveys:**

We conduct our own surveys and we purchase surveys from other survey firms. The decision to include a survey depends on methodological rigor and both ERI's surveys and the surveys we purchase must adhere to these standards. We examine the specific methods of each survey we use to determine whether the researchers used sound methodological principles to conduct their survey. All the surveys we reference source their data from companies and data are collected through questionnaires and we confirm that the survey teams follow up with participants if there appear to be issues with data (e.g. Outliers). There is quite a bit more that goes into determining the validity of a survey. Many textbooks and several peer-reviewed journals are dedicated to this subject, so a full description of what makes a survey methodologically rigorous is somewhat out of the scope of this email. The reference we use most frequently is *Essentials of Behavioral Research: Methods and Data Analysis* by Robert Rosenthal & Ralph Rosnow. This comprehensive book is a classic work on the subject.

#### **Matching jobs from the surveys to ERI jobs:**

Before we include the survey data for any given job in our product, we go through a process called job matching. First, multiple independent raters go through the job descriptions in the surveys and match the jobs in the surveys to ERI jobs we have developed. These initial matches are conducted based on job descriptions. After the initial match, we reconcile discrepancies, and come to a consensus as to whether a particular survey job actually matches our internal job. Additionally, we have been using some of the

same surveys with the same jobs for over 30 years. Using these surveys for this length of time has allowed us to become familiar with the jobs in the surveys and given us time to evaluate and re-evaluate these matches.

**Raw data quality:**

After the survey has been processed and matched, we go through a data cleaning process. We want to ensure that the data we have collected for a given job is actually for that job. The first step is job matching, but job matching isn't foolproof. There are statistical processes that can identify if a given data point is likely not part of a group (an outlier). The standard definition of an outlier is any value 4 standard deviations from the mean. We flag those outliers for review, but we can also examine whether there are other values that are having a disproportional impact on the mean. This is called leverage and there are a number of measures of leverage that we use to identify these values. The flagged values are then evaluated and handled on a case-by-case basis. We might fix a job match or call the participating company/survey firm to verify the data. In some cases, we may not be able to validate a problem data point, which requires removal.

**Analysis:**

After the data are collected, processed, and cleaned, we run the analysis. This analysis is a multi-step process based in longitudinal meta-analysis and references multiple salary surveys, which allows us to predict compensation rates more accurately. Over time, we have optimized this analysis based on validation studies and new advancements in the field of statistics.

**Analysis validation:**

After the data are analyzed, trained analysts audit the results for each job, every quarter. We examine the results of the analyses for signs of potential issues like increased standard error, convergence issues, or decreasing trends. This audit allows us to identify potential issues for occupations before the data are released.

**Result validation:**

In the previous steps we went through the process of collecting, matching, cleaning, analyzing, and auditing the data, which give us a final result. Is that final result accurate? One way to measure the level of accuracy is to ask a single question two different ways. If both give a similar answer, then we can have greater confidence in the accuracy of both methods. This is called a convergent validity study, which I conducted recently. I attached a copy of this study for review.

---

**What about the quarterly update to the data? How does ERI update it by asking clients to re-submit? By updating by a %?**

The short answer is that we do both. ERI performs routine data collection coupled with multiple analyses to ensure accurate figures. We consistently purchase and trade for third party surveys to update our data sets throughout the year. Participants are also invited to resubmit data on an annual basis for our internal surveys.

Rather than a simple percentage increase of the data, which we feel would lead to inaccurate reporting, our primary analyses are conducted using several different analysis types. We use cubic spline regression for years of experience and revenue. This is a type of analysis allows for wages to increase at

different rates for different years of experience/revenue. Standard regression is used for differentiation between geographic areas. We differentiate between industries with polynomial regression.

We use a time series analysis to determine the growth rates for individual occupations. This analysis is essentially a longitudinal meta-analysis of multiple salary surveys, which allows us to predict compensation rates more accurately. The data going into these analyses are updated twice each quarter. Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well. There is a bit of calculus involved, but the question we're answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. We've conducted a validation study to measure the accuracy of these methods, which indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email.

---

**Do you have any updated pay increase trend data? I've seen articles recently with wages increasing from 4.9-7.4% in the last 3 months so am hoping for some additional data to use. The current annualized trend is still at 2.5%.**

We are seeing growth and some occupations are growing at the rate mentioned, but the recovery is a bit more uneven. For example, occupations like Forklift operator and truck drivers are seeing this type of growth, but we're not seeing much growth in mining.

Overall, we're seeing 1.23% growth over the past three months. That's 5% on an annualized basis, which higher than average.

---

**Could you kindly provide the list of company surveyed incumbents for Sales Engineer (High incentive) to me?**

We don't provide participant lists by job because this type of list doesn't represent the data we report. Occupations don't exist in isolation within organizations, and we don't analyze them in that manner. We analyze occupations within the context of occupational hierarchies and competitive peer groups, which allows for a better picture of rates within specific labor markets. We find that industry specific lists are better at capturing the scope of data we offer.

---

**What does usSEC stand for? Why does ERI use 3 different industry codes?**

Below are the definitions for the three industry acronyms we use in the Assessors. We utilize three industry codes in order to provide users with the flexibility to use the code they're most comfortable working with. Users have requested to be able to use the various available industry classification systems, so we have designed that within the Assessors by way of the three industry code options.

eSIC - Enhanced Standard Industrial Classification  
NAICS - North American Industry Classification System  
usSEC - United States Securities and Exchange Commission

---

[Using historical assessor when someone (incorrectly) reports our data from the past] **I have been diving into the salary assessor to make some immediate recommendations for staff and plan to make updates to the rest of our staff in the upcoming months. I wanted to address something that seemed off to me but might possibly be accurate given we haven't updated this data in a couple of years (2017 – 2018 timeframe.)**

**Comparing the ERI data for Biologists/Scientists group from 2017 to 2021, there has been a drastic shifts in salaries. Specifically, I am assessing the salary of a Biologist Level 2 in Boulder, CO. Based on prior data level 2 range was between \$40,800 - \$81,600. In most recent data, level 2 range is from \$64,982 - \$94,200. The 10th percentile or Min is nearly a \$25K swing. I wanted to ensure I am interpreting the data correctly and also checking if any major occurrence happened in reporting in the last couple of years.**

I looked into this question, and I have two findings to report.

1. I wasn't able to replicate the findings reported in the below spreadsheet. We reported a level 2 range of \$54,807- \$70,248 for Biologists in July 2017, which is smaller than the range reported below. The Mean reported in the below spreadsheet is close to what we reported. It looks like the primary issue is in the tails. Please find a copy of this report attached.
2. The mean increase between 2017 and 2021 is significant (\$62,065 to \$77,385). I reviewed these figures, and I can confirm that the mean increase for Biologist in Boulder Colorado is accurate.

---

**A customer asked about the frequency of our data collection from our sources e.g. daily, monthly, quarterly, etc. Also asked if we can provide a percentage breakout as well such as % from purchased surveys, % from in-house surveys, etc. She wanted to know this on a position level, but I think that's too granular to speak on. Do you have any data about the proportion of data we get from the various sources?**

When customers ask this I'll generally say something like: "The surveys we purchase are published on an annual or quarterly basis. Most salary surveys are published on an annual basis and a smaller number on a quarterly basis.

These surveys are published throughout the year, and they are entered into the Salary Assessor at the time of publication. We're not able to provide a specific breakdown of percentage.

It needs to be fleshed out a bit, but this is the flavor of the message.

---

**Who is ERI's cloud hosting provider is?**

We are hosted on AWS. It's ok to tell customers this.

---

**We are looking for the salary based on years of experience for an IT Quality Assurance Director based in Los Angeles, CA. The problem is that the system is only offering the salaries based on levels. Is there a way to pull this information by years of experience?**

In the Salary Assessor, jobs are either analyzed by years of experience or company size, based on the job selection. If our analyses show that the correlation between experience and compensation is strongest for a given job, the assessor will use experience to calculate compensation estimates. On the other hand, if our analyses show that the correlation between organization size and compensation is strongest for a given job, the assessor will use organization size to calculate compensation estimates. Typically, we see that organization size drives compensation in positions at the director level and above, although there are a few exceptions (i.e. Program Director).

.....

There's no way to pull this specific title by years of experience.

The analyses of most directors show a direct correlation between compensation and revenue. Our analyses of the IT Quality Assurance Director indeed showed that it follows revenue-based trends opposed to the year of experience trends that lower-level titles follow. We analyze higher-level titles by revenue as we've found this to be a better predictor of compensation for director and above roles. The size and revenue of an organization matters for higher-level positions, but competition is less revenue-focused for lower-level employees, so we analyze those titles by years of experience. Revenue can be customized within the Assessor to ensure the appropriate cut points are used.

---

**I had a question on the data that's included on the salary assessor. Are government and not for profit companies included in the aggregate data**

While Government data sources (BLS) are not used in our primary compensation analyses, there are some government agencies who have participated in our surveys. For example, a number of state level departments of transportation are found in the transportation industry. Likewise, non-profit organizations are found in our non-profit industry. The "All Industries – Diversified" option is an aggregate of all industries found in the industry tree, which includes non-profits and any governmental organizations who have participated. In sum, yes, those two groups of organizations are included in the overall average.

---

**I work for the Defense Contract Audit Agency (DCAA). Someone asked me if ERI used data from BLS. I'm assuming you do since your website says you collect salary survey data from internal surveys, third-party salary surveys, and public sources to calculate geographic salary differentials and assist with compensation planning, and BLS is certainly one of the most well-known public sources of labor data, but I figured it would be best to ask you rather than just assuming it.**

Thank you for reaching out to us about this. We do reference BLS data, but it is not a primary data source for our compensation analyses. Rather, it's used as a quality control measure. We track the



relationship of each ERI occupation to the BLS job family, and significant changes in the relationship will throw a flag. The BLS data are actually incompatible with our occupation analyses. The BLS reports data at the job family level and ERI reports at the Occupation level. For example, the SOC 132011 represents all Accountants and Auditors, and we research individual occupations like "Budget Accountant".

"Accountants and Auditors" doesn't provide enough detail to directly inform us on the salary of a Budget Accountant, but it can alert us to problems if the relationship between the two suddenly changes. Please let me know if you have any additional questions.

---

**I spoke to a customer a little earlier today who wanted to confirm the number of companies we have in our database. He heard we have 400k in our database. Is this info correct? If not, what is the real number?**

The total number of companies in our database is 1,940,760 as of August 17, 2021.

---

[salaries by level export does not display currency] **We pull the data for UK, the salary value in British Pounds. However, there is no sign or value in the exported file about this. In the Salary Assessor, is there any way we could convert the salary value to USD?**

All values are reported in local currency and there isn't currently a mechanism to adjust based on the exchange rate. We avoid reporting compensation for other countries in US dollars because the compensation rates we report would fluctuate as a function of the exchange rate, and not local labor market changes. Our goal is accurate reporting of compensation by market, and we avoid processes that could create problems for that goal.

---

**We ran the attached compensation data from ERI, and it says that the currencies for the U.S. location and Canadian location are USD and CAN respectively. However, the close proximity of the Median amounts for both locations leads me to believe that the amounts might already be converted to USD, even though the Excel sheet says they are in CAN. We ran data for the same locations in a separate comp benchmarking system (screenshot below), and the proximity of the post-conversion dollar amounts is very similar to that between USD and CAN dollar amounts in ERI. Can you please confirm whether the data for the Canadian location is actually being displayed in USD or CAN, regardless of the label of in the Excel data export?**

All values are reported in local currency and there isn't currently a mechanism to adjust based on the exchange rate. We avoid reporting compensation for other countries in US dollars because the compensation rates we report would fluctuate as a function of the exchange rate, and not local labor market changes. Our goal is accurate reporting of compensation by market, and we avoid processes that could create problems for that goal.

We have four sources of data in Canada. First, we purchase a custom data extract from Statistics Canada which provides us with greater detail than is available to the general public. Second, we use data published by individual provinces when it is available. Third, we conduct our own surveys through our survey arm, ERI Salary Surveys. Fourth, in places where we have a need for more data, we purchase salary survey data from reputable salary survey providers.

---

**For most roles, we are utilizing the Levels 1-3 data. When pulling hybrid roles, only one range is given, as opposed to being broken out into 3 levels. I'd love to understand 1) how the hybrid roles are calculated and 2) what is the best way to marry that to the levels we are using from the other ERI data we've pulled.**

ERI's hybrid function is not calculated when using jobs by level. This is because we can't ensure that we're conducting an apples to apples comparison with levels. Occupations can be reliably combined across years of experience (e.g. year 1 on job A to year 1 on job B), but the same logic isn't true for levels. Level 1 for job A may be different from level 1 for Job B. There may be cases where combining jobs across levels is appropriate, but there are other cases where it is not. For this reason, we do not have a programmatic tool to run this aggregation. In this scenario I would recommend pulling the underlying jobs into excel and combining outside of the Assessor.

---

**We have a concern about the salary value for salary assessor and global salary calculator. I also attach the Laser Technician in Stockport as the reference. The salary average value is different in same location. Which value is more reliable for the position?**

There are two main reasons for these differences.

1. A difference in industry selection. The Global Salary Calculator (GSC) collapses across all industries whereas the Salary Assessor (SA) is industry specific
2. All incumbents vs levels. The GSC provides overall averages across all incumbents whereas the Salary Assessor breaks compensation down by the employee's level. The all incumbent average is higher than the level 2 value because of the nature of compensation distributions. Specifically, the "Bell curve" for compensation is generally positively skewed, which means that there are more outlier employees at the high end than the low end. This pulls the mean above the level 2 average. Below, you'll notice that the "All incumbent Average" in SA is close to the overall average in the GSC. There is still a small difference in values, and that is due to some sample differences between the GSC and SA.

In terms of reliability, both values are reliable. However, there are differences in specificity. The values in the SA are more detailed and allow you to drill down to a specific scenario, whereas the GSC values are more broad. The value to use depends on how you define your competitive market. If you would like to be more specific, I'd suggest using the Salary Assessor. You may want to use the Global Salary Calculator value if you're targeting a broader market.

---

[specific survey request] **A customer wanted to know if we have data from Mercer's IHN Survey incorporated into our SA?**

I'm sorry, but due to confidentiality agreements we are not allowed to provide confirmation of specific purchased surveys. Our vendors are concerned that they will lose sales if it is known that their data can be purchased through ERI, so they ask us to maintain their privacy. Unfortunately, we can't provide this information.

---

**We understand ERI has quarterly updates available: Jan 1st, April 1st, July 1st, and October 1st. We utilize those each quarter. But I'm seeking to find what time period the updates are based on? The previous quarter? Or 2 quarters ago? Or...?**

The most recent data in the Salary Assessor is 90 days old at the time of publishing. This 90-day lag is required by law under the Sherman Antitrust Act and is something we follow to ensure that our customers don't run afoul of that law. This is one reason we use a time series methodology for the Salary Assessor. This methodology predicts current market rates by examining the rate of growth over time. We then use a leading indicator analysis to account for changing markets in the 90 days since the data freeze. We have examined the accuracy of this methodology through a convergent validity study, which showed a predictive accuracy of over 99%. Please find the results of this study attached with this email.

---

**Thank you for letting us know that the data is updated every quarter. What time period is that new data based on? For example, is it based on the prior quarter's data, or for a rolling quarterly period, or a snapshot in time? Or data from a snapshot in time 2 quarters ago? Can you confirm that the refreshed data is based on a snapshot in time or based on rolling period?**

ERI uses a time series analysis of multiple quarters' data in our analyses. This analysis is called a longitudinal meta-analysis and references multiple salary surveys, which allows for a larger sample size. The data going into these analyses are updated each quarter with the newest data being 90 days old at the time of publication (to comply with antitrust laws). Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well with a leading indicator analysis. The question we are answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. I recently conducted a validation study to measure the accuracy of these methods. This study indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email.

---

**If I am looking at Salary data which is marked "Data as of 7/1/2021," from what dates does the data come from? Is it 7/1/2020 to 7/1/2021? ... Can you be more specific as to the time span "multiple quarter's data" covers. In other words, how many quarters?**

The specific length of the timeseries we use depends on the job and growth trajectory of the market. Most of the time series have a length of about ~3 years. I should note, historical survey data don't reflect the current marketplace, but they tell us where compensation was at a given point in time. Our timeseries allows us to determine the trajectory of growth for a given occupation across time. Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well with

a leading indicator analysis. The question we are answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. I recently conducted a validation study to measure the accuracy of these methods. This study indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email.

---

**When we price our hourly jobs with ERI, we always price based upon years of experience. When we are looking at one (1) year of experience – is the definition truly defined as an employee that has already completed one year of experience -OR- is this simply defined as an entry level rate of pay?**

"Experience: 1" means 0-1 year of experience in the given occupation. Naturally, we aren't able to provide compensation estimates for no experience in a given position, so this represents incumbents with some experience up to a single year for the selected title.

---

**Two of the ERI #s have the SAME PD and SAME Data, but different #s - why?**

For searching purposes, ERI lists multiple possible job titles for the same root (Primary) job, which you will see reflected on the Alternate titles tab. Multiple jobs will have the same eDOT# and Job Description, though each alternate title will have their own respective ERI# assigned. The choice of title to use for surveys is to your discretion, though you can use the Primary Title tab if you would like to view a more concise list of titles.

---

**I am trying to understand how a title such as CEO gets adjusted back historically. It was explained to me that these "Top 6" categories do not present an annualized trend rather it says "data driven".**

The data driven values use the average growth of the past 3 quarters at the national average to calculate a job specific growth rate. This value is then used as a static growth rate to age the data backwards. This is a more accurate aging factor for each of these jobs, but it has the same limitations as other aging factors in that it becomes less accurate over time.

---

**A customer would like to know if we have anything like a retail center owner, someone who makes the decisions for the property but doesn't necessarily do any of the paperwork. They said that CEO would not suffice and I do not see anything like owner of retail etc. available in program.**

We don't have an explicit owner of a retail establishment. Most owners don't participate in salary surveys, so we just don't have the data. You might go with an operations director or another more generic title, but it will be for employees of organizations instead of owners. I don't think that information exists anywhere.

---

**Can I upload ERI data into our other compensation analysis tool, MarketPay? (Can also use this answer for CompAnalyst from Salary.com)**

Yes, it is possible to download an excel list of data from our system for upload into MarketPay. Our data manager reports that you need only to use the Advanced Reports Tab to select the jobs, locations, and criteria that you would like in your Salary Assessor survey. Then export using the “Long Format” export option. This is the format that MarketPay is expecting.

---

**[commission titles having base salary] She is looking for some insight into the salary for Real Estate Sales Agent. She said she doesn't know any that are not paid by commission, I let her know in ERI this job is listed as having base salary and that incentive may reflect sales commissions for this job. Is it possible for someone to provide an explanation in writing to forward for her to share with her bosses? She said she keeps getting asked about why there is salary for this particular job.**

The base salary for this title is a question of data input limitations. We conduct internal surveys to get compensation information directly from employers and by purchasing or trading for trusted third-party surveys when necessary. Within these surveys, some participants may enter commissions as base salary inputs (because this is the full compensation) or as incentive values. For titles which are commission based, we suggest using the Total Cash without attention to the other two compensation types—this will ensure the most appropriate benchmarking. Our system is built for analyses on a variety of jobs. While the base and incentive compensation figures are appropriate for many titles, this is not the case across the board. Since we aren't able to fully change the way participants enter their data into all of the surveys we utilize, we use this Total Cash methodology as a standard way to compare apples to apples, especially for highly commission-based titles such as this.

---

**[employee population/incumbents in exports] When running reports in ERI, is there a way to add the # of incumbents and/or # or companies to the report?**

Unfortunately, the incumbent counts are not available in the exports. This functionality is only available within the Employee Populations modal in the Assessors.

.....

Sorry, those figures are currently not available in the downloads.

---

**I was prepping the data to send over to our analytics team and noticed that some of the city and states are not aligning with the zip codes. The zip codes don't align but these locations are very close to each other when you view them on a map. Does this mean that the data is being pulled from the locations that ERI list in the Area Name vs the actual location tied to the postal code?**

We report data by city, not zip code. If they search by zip code, then we will pull the closest matching location that we have in the system. We don't have every town, but searching by zip will locate the closest to a given zip. This distance calculation is done by latitude/longitude midpoints.

---

**I couldn't find anywhere in our Help about why we don't have levels for directors and execs. Is there something I can tell him about why we don't have levels for these jobs?**

I've spoken to customers who have multiple executives within their organization who are matched to the same ERI job but oversee different departments or groups. In these scenarios, they typically use the revenue level of the group each executive manages, rather than using the full organization size, to differentiate the compensation of the executive.

---

**Wondering where the number comes from for the All incumbent average? Is there any way to have that number included in the advanced reports?**

The All Incumbent Average is the Mean compensation value at the median year of experience. In Job Report, if you set the Years of Experience option to Default, the one right in the middle will be the median year of experience. In Advanced Reports, there's no way to do this for multiple jobs at the moment since jobs have unique years of experience, but it is in development so that we can show the Median year of experience per job. Currently, the way to show that number in Advanced Reports for multiple jobs is to use All in Years of Experience options and Mean in the percentile options.

Below is the example from Job Report to show from where that number originates.

## Accountant

All Incumbent Average: \$87,759 | ERI: 4001 | eDOT: 160162018 | SOC: 132011

### Salaries By Experience/Size

### Salaries By Level

Compensation Type Pay Period

Base Salaries ▾

Annual ▾

🕒 Years of Experience

📊 Percentiles

Years of Experience	10th Percentile	25th Percentile	Survey Mean	75th Percentile	90th Percentile
16	85,496	92,745	102,365	111,836	121,836
12	79,620	86,304	95,230	104,030	114,030
8	73,514	79,593	87,759	95,809	105,809
4	66,860	72,306	79,617	86,803	96,803
1	61,616	66,590	73,257	79,742	89,742

---

**I'm hoping to get some guidance on the occupation titles noted as (Experience) or (Revenue). Specifically, we were looking at these two occupation codes: Plant Manager (Experience) 183.117-010 and Plant Manager (Revenue) 183.117-210. Can you please explain the differences between these additions to the job title in (), and how we should evaluate and best apply to our work?**

Plant Manager (Revenue) and Plant Manager (Experience) are the same occupation. However, one is analyzed by the experience of the employees and the other is analyzed by the revenue of the

organization. This allows customers to examine this role based on which measure best fits their situation. I might suggest referencing the job with both variables set to their criteria. This will allow them to view the market from the perspective of the employee's experience and the size of the organization.

---

**I have been working with the software by creating hybrid jobs to match my company's job descriptions. I've run into a problem where I'm unable to add certain jobs to my hybrid positions. For example: HR Business Partner and Director of Operations.**

It's not possible to create a hybrid with jobs that are experience and jobs that are revenue. Director of Operations is incompatible with this hybrid since it is a revenue-based title while the others in the hybrid are analyzed by experience. Within the hybrid jobs selector, once an experience job or revenue job is selected, the list will update to show only titles of that analysis type. You can see the analysis type of the titles in the browse jobs table by viewing the Salary By Level column where "yes" indicates an experience-based title. Typically, Director and above roles will be analyzed by revenue.

ERI analyzes data for lower-level jobs by experience instead of organization revenue. This is because we have found experience to be a better predictor of compensation for non-executive jobs. In terms of lower levels jobs, we have found that revenue does not have a meaningful impact on compensation, so we do not include that variable. The size of an organization matters for executives, but competition is less size focused for lower-level employees. If an accountant can make more money at a larger organization down the street, they will make that move. This is borne out in the data. These two different analysis types are why we aren't able to create hybrids between experience jobs and revenue jobs.

---

**Is there anything we have written up about salaries by level? Not the definitions but more of an explanation about when to use levels vs experience. I have an inexperienced comp person trying to relay this to her management and was just looking for some guidance on this.**

The decision to use levels vs experience largely depends on how the organization is structured.

Salaries by Experience is the more popular option. The data are more granular and easier to tailor to individual employees. Organizations that use experience are generally flatter and more job focused.

The organizations that use levels are generally large, hierarchical organizations with a formalized grade structure. It's more straightforward to slot levels into this type of organizational structure than experience. Trying to tie individual experience levels into this type of organization can quickly become an organizational nightmare.

So, while "Salaries by Experience" is the more popular option, some organizations really need "Salaries by Level". If she doesn't know which option to choose, she should almost assuredly use "Salaries by Experience".

---

**For the insurance field (property-casualty), is premium volume available as a separate analysis factor? Or is it rolled in with assets or revenues?**

We do not track this industry by premium volume. Assets are the size measure that we use for this industry.

---

**An explanation on how data is determined by industry – for example I selected Racing, including Track Operations in Toronto, Ontario and have been questioned on how ERI gets that data given there is limited Racing in this area.**

The short answer is that industrial relationships are relatively simple computations. We are able to apply analyses to various industries in part using executive pay patterns. Executive occupations are frequently influenced by industry more than geography. This is because competition for executive labor frequently exists on a national level, and also because industry knowledge is more frequently critical to success in these occupations. We are able to accurately capture the market rate for these occupations by expanding our analysis to other comparable organizations within the same industry. We are then able to capture geographic differences by examining relative value patterns within an industry to other, related industries. Using these analyses, we can create an overall picture of industry-area relationships.

We are able to provide coverage by examining salary survey data over time and within the context of its structure, industry, and geography. It is true that we may not have salary survey data for every location every year, but by building an historical picture of the full context of the job we are able to provide an accurate and reliable analysis of salaries in various locations and industries.

---

**I have a question about data. Are you including SCA wages as part of your data provided? Thank you!**

All of the primary analyses in the Salary Assessor come from occupation level, employer-provided Salary Surveys. We do use other surveys and wage data as quality control tools for reference, but they are not used in the primary analyses. We track each occupation in the Salary Assessor against outside data and if there is a sudden change in the in the relationships, it's a sign that there may be something that we need to look into. We will then examine the underlying data to determine the cause of the change and what remedy, if any, is required.

---

**Do you have a legend or a key for the codes ERI#, eDOT, and SOC?**

ERI #: The ERI number is ERI's unique identifier for each job title we track.

eDOT #: The eDOT code is ERI's occupation code, and is the primary code for each occupation. Each job description and the compensation data are unique by eDOT code. This code also links alternate titles. For example, "Budget Accountant" and "Accountant Budget" are unique titles, and have unique ERI numbers. However, they both represent the same occupation, and both have the same job description/comp data (which is linked by eDOT code).

SOC #: The SOC code is a job family code maintained by the BLS. We place each of our occupations in the closest matching job family to make it easier to find jobs. More details on this code structure may be found here: <https://www.bls.gov/soc/>



---

## Types of Organization Size Metrics

### Number of Employees as an Organization Size Metric

The number of full-time employees on your payroll is rarely as indicative of pay in any specific industry as other size variables.

For example, a high degree of automation may lead to having fewer employees, but executive pay, revenues, assets, or operating budget may be identical to organizations in the industry with larger numbers of employees.

Outsourcing, subcontracting, and the use of temporary or contract workers can also mask the true numbers used to produce goods and services. The number of people on a payroll may not reflect the full cost of labor. Some charities have large numbers of volunteers, which allows them to operate with fewer employees than others at the same revenue levels. Also, many organizations use contractors and temporary workers to reduce their fixed costs and enhance their staffing flexibility. When this is the case, total operating budget or revenue levels tend to be much more indicative of management pay than headcounts of full-time employees.

---

### The incentives for Executive vice President at small organizations seems to be off. Can you double-check?

I reviewed the data, and I can confirm that the incentive estimates appear to be correct. We don't see any issues with the underlying data. The data do not support evidence of incentives for Executive Vice Presidents at small organizations in your industry.

---

### The growth of the jobs I have in the Salary Assessor seems very high year over year. Can you give me an explanation why this is?

I checked with my team, and we reviewed the data behind those two jobs YOY. I can confirm that those growth rates appear to be correct. We don't see any issues with the underlying data. I don't specifically know why this difference in growth exists in the data. Participants don't explicitly provide reasons behind the data they report. However, I can report that these figures appear to be correct. Please let me know if you have any additional questions.

---

Hope you two are doing well. I was wondering if you can help me make sense of a search. I searched for a Sales Supervisor and Sales Manager role. I did not narrow the industry (all industries) and it is in Indianapolis, IN. The salary data for the Supervisor role is higher than the Manager role for some reason. Typically, a Manager is higher than a Supervisor in the hierarchy. When I read the job descriptions, the Manager one seems more high level. Any idea why this would be the case? A client

**is asking me for clarity and I want to be able to validate the data and explain to them why there is a difference.**

I agree that this finding is surprising. We reviewed the data and I can confirm that the data we published matches what has been collected. Of course, it's unlikely that supervisors are paid more than managers in the same organization, so it appears that there is a sampling difference between these two jobs. Sampling from many small organizations in an area could be skewing the data as smaller organizations may not have both Sales Manager and Sales Supervisor positions. We are looking into this more closely for upcoming releases. In the meantime, I might suggest placing greater weight on the Sales Manager job since it better encompasses the results from both small and large organizations.

---

**I was reviewing the July data compared to this most recent data and I took a title that had an average of 5 years experience and compared it to the same title with 5 years experience in the same market (Birmingham, AL). Maybe it's just how the new data is being pulled now, but \$14.30 to \$13.35 seems like quite a jump. I've reviewed the data from each quarter in the past and it usually only goes up by a few cents, so curious as to why it went up nearly \$1 and if this is normal/accurate? Can you please advise?**

The data points are both accurate in this case. You're comparing the median in the July report to the mean in this report which accounts for some of the variation, but we do expect some market-title combinations to swing more than others. We often see markets fluctuation quarter-to-quarter with titles within those markets increase/decrease on top of that. Sometimes we may have to "catch up" given the most recently available data in the quarter, which seems to be the case across markets for some titles.

---

**My question is regarding the Virginia Minimum Wage increase. How does ERI take into account the minimum wage increase in Virginia? Also with inflation....I'm hearing 6-10% inflation. Even though Virginia will go to \$11 as of Jan 1....combine that with projected inflation rates.... How does ERI ensure it has the most up to date and accurate salary information?**

Thank you for reaching out to us about this. We do track minimum wage rates, and we account for changes in compensation due to minimum wage increases. From a statistical perspective, minimum wage increases restrict the range on the distribution of compensation for a given occupation. This forces the floor of an occupation up, which is reflected in our data as the change in law takes place. We have found that minimum wage increases also compress the next two levels up, but that isn't a change that happens immediately. We generally see those effects 6-12 months after the minimum wage increase and they are reflected in the data as they happen.

From an inflation perspective, the September inflation rates were just published with a rate of 5.4%. Inflation and compensation growth are correlated, with inflation leading compensation growth in most cases. We did see inflation push compensation up in the 1970s, when inflation hit 14%, but the current rate is lower and not expected to have an immediate effect on compensation growth. Of course, high inflation, high open jobs rate, and a high quits rate all point to higher rates of compensation increases over the next year.

To ensure accurate data we actively track compensation trends from salary surveys. Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well with a leading indicator analysis. The question we are answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. I recently conducted a validation study to measure the accuracy of these methods. This study indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email.

I also write a paper each quarter highlighting recent growth trends. The October 2021 version of this paper may be downloaded from this address:

[https://resources.erieri.com/whitepaper/eri\\_national\\_compensation\\_forecast\\_october\\_2021](https://resources.erieri.com/whitepaper/eri_national_compensation_forecast_october_2021)

Please let me know if you have any additional questions.

---

**Does your compensation include Medicare and social security? What is the source if I want to get better understanding of your data?**

We do not have information on Medicare and Social Security in our system. Our data includes compensation figures given by the organization such as Salary, Bonus, Non-Equity incentives, etc. Users can download the XA methodology using the help dropdown in the top-right hand of the Assessor and navigating to the Methodology option.

---

**A while back you mentioned you could help give me some insight into how to work with pay ranges / pay grades. If this is something you have time for later this week, maybe Friday, I would be appreciative.**

This online class is great for this question: <https://www.erieri.com/dlc/course/creating-a-market-competitive-salary-structure>

[to sales: The subject of how to create and work with pay grades is large. We can help with specific questions, but the question below is a bit broad. After they go through this course they may have more questions, and then we can be of more help.]

---

**Does ERI provide salaries for interns?**

ERI only reports rates from surveys. Internships, being typically temporary or seasonal work, tend not to be covered by surveys of competitive pay because their rates are set internally, usually at levels just below the lowest level for the full-time equivalent jobs they fit.

ERI recommends you pay interns around the 10th or 15th percentiles for first-year incumbents of the positions they fill. This assures these trainees do not make more than current full-time incumbents of comparable jobs.

Another option is to compare notes with other local employers in your industry, because intern rates tend to be extremely localized and customized to specific industries. Trading with rivals will assure that interns are paid comparably across organizations.

---

**On the salary assessor, I see positions for both Architect and Intern Architect. We use the term Intern Architect to mean someone that has graduated with an architecture degree, but they don't have a license yet. Once they are licensed we remove "Intern" from their title. Based on the fact that the salary assessor does not let me choose years of experience greater than 4 and does not allow me to adjust to show a bachelor's or master's degree, I'm guessing that your system uses "Intern" synonymously with co-op, as in college student still. Can you please confirm? We want to make sure that we are looking at accurate data.**

**One other question, does your position of Architect assume that the individual is already licensed? I know you can add licenses with adjustments, but I want to confirm that licenses aren't just implied by certain job titles. i.e. if I choose the position of Lawyer, does that assume someone has actually passed a bar exam? Same thing with Architects. We just want to make sure we are crystal clear about the compensation data we are looking at.**

In the ERI platform, an Intern Architect is assumed to be a college degreed individual. In the Job Characteristics section of the Job Report tab, you will find you are able to view "Education Level Required" for each job. Intern Architect has a surveyed average of 9, equivalent to college degree and prior knowledge upon entering a field. The year of experience maximum of 4 doesn't mean that no interns are in a role for more than 4 years, rather the data volume drops to a level where we are no longer able to provide reliable results.

Also, the position of Architect is not assumed to be licensed – you are correct that licenses and certifications be added. For Architect, "Member of the American Institute of Architects - AIA - American Institute of Architects" is set as a Premium certification, and additional certifications and licenses can be added at Custom salary rate at the user's discretion. In general, the job description will note a job as "paraprofessional" to help users discern whether the salary reflects an unlicensed incumbent, and for further confirmation, it is possible to check whether a certification/license is Fundamental by going to the Adjustments section and checking for prepopulated licenses/certifications.

For your particular situation, we might suggest using the Architect Intern role, and then transitioning to the "Architect" position after 4 years. There is a gap between the top of the intern and bottom of Architect, so you may need to consider lower percentiles for the Architect role for employees whom you would still consider Interns. Then, as they move up, you can begin to transition them towards the median. In your organization the transition from intern to Architect may happen at the 5-7 year mark, and this will allow you to account for that gap.

---

**What is the difference between the US government's Dictionary of Occupational Titles (DOT), the new O\*NET system, and ERI's enhanced DOT database?**

When ERI released the first Salary Assessor software application over 30 years ago, it was thought that the US Department of Labor's Dictionary of Occupational Titles (DOT) descriptions could greatly assist in

creating the format for position descriptions. But when ERI applied its position incorporation policy (that positions common enough to be found in three or more salary surveys be added to the ERI database), we found thousands of positions not covered in the DOT.

In fact, over 80% of the Salary Assessor's jobs were not found among the DOT's 12,000+ titles. By the time ERI had concluded that the DOT was too outdated to be relied upon, we had already adopted the DOT's construct. For over 30 years, ERI has been updating outmoded DOT descriptions and adding new ones, utilizing Internet technology to update all applicable worker characteristic measures.

Today, the DOT has been discontinued by the US government and replaced by a job-family approach, the O\*NET. The DOT's analysis measures have been replaced by over 600 O\*NET questions, but few of these relate to career interest, which goes to the core of rehabilitation and career changing analyses. In combination, all these O\*NET questions can't seem to answer the question of whether or not a person is disabled. Career changers, or the professionals who assist them, are not well served by O\*NET. But ERI, in connection with ERI, has been directly updating the original DOT. ERI provides hundreds of organizations with job analysis services. Combining ERI job analysis capabilities and eDOT creates synergies in understanding jobs and effectively matching people's qualifications with jobs.

ERI's enhanced Dictionary of Occupational Titles (eDOT) database provides up-to-date job titles and descriptions and filters them based on keywords, industry, DOT attributes, cross walked job codes, physical/mental abilities, and job requirements. These are used in the Occupational Assessor, with subscribers that include vocational experts, attorneys, disability insurers, and state Workers' Compensation agencies.

---

**I need some assistance in determining how to use the "Entry Level" and "Standard Deviation" information provided under the SCO's.**

The mean and standard deviation values come from the analyses of the selected job and competency. The SCOs are primarily utilized within the Occupational Assessor, where the input values are quantified and analyzed. The mean and standard deviation pulled into the SCO section of the Salary Assessor are provided as quality measures from the Occupational Assessor's analyses.

The standard deviation is an index of the amount of spread or dispersion among a set of numbers, or the average distance of each point from the regression line. One may use the standard deviation to calculate the interval within which most of the ratings will lie. Specifically, one standard deviation from the mean will contain approximately 68% of the ratings; two standard deviations will contain 95% of the scores; and three standard deviations will contain over 98% of the ratings. Every survey has a rate of error or standard deviation associated with their data collection and reporting methods, but to my knowledge, we are the only organization that provides this information.

---

**I am hoping to understand which Participants provide data for the individual state. Does that mean providing 19 separate listings? For example Bridgeport Brewing Company included on the participant list closed in 2019, why are locations that closed prior to 2020 included on a 7/1/21 participant listing?**

In terms of why there are participants in the lists which are closed or merged, the short answer is that the data are still relevant and useful when analyzing titles. We apply time series analyses to salary survey data in order to put jobs into context using past and present data points. Past participant data remains an important part of our analyses to determine the growth rates for individual occupations. This analysis is called a longitudinal meta-analysis and references multiple salary surveys, which allows for a larger sample size. The data going into these analyses are updated each quarter with the newest data being 90 days old at the time of publication (to comply with antitrust laws). Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well with a leading indicator analysis. The question we are answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. We conducted a validation study to measure the accuracy of these methods. This study indicated that this methodology predicted survey responses with an accuracy of 99.1%. The results of that study are attached to this email.

---

**Can someone save an Employee list that they made and save it for future reference? They uploaded it under the Salary Planning tab and want to save it, to go back to. Will it save correctly under the Benchmark List? They have SA11.**

The Salary Planning Sheet will not share job lists with the Benchmark list. Salary Planning is employee level data and Benchmark Job is Job level data.

However, the employee list will be maintained in the software unless they delete it, so it will be saved. Of course, the underlying data will continue to update. If they want to save the list with all the underlying data I would recommend downloading to export.

---

**I'm wondering if your hourly data contains tip information for those jobs that receive tips directly.**

Yes, tips are included in compensation rates for tipped employees. However, we have noticed some discrepancy in reporting from our participants and survey vendors. Some include tips in base, and some include it in incentive. For this reason, we recommend referencing the Total Compensation figures for these roles. This will ensure that they are doing apples to apples comparisons to their roles.

---

**What do the "incentive" amounts represent?**

Incentive refers to annual variable cash (which may include bonuses, commissions, short-term non-equity compensation, or other cash incentives). The heading of Incentive does not include stock awards, option awards, pension, or other non-cash compensation. ERI determines the amount of the Incentive by taking the average dollar amount of the Incentive for all the incumbents whether or not they are cash-incentive eligible.

For example, there are 1,000 employees in a job classification. Eight hundred employees are bonus/commission eligible. Among the 800 employees who are bonus/commission eligible, a total of \$200,000 dollars in annual bonuses/commissions is paid to 700 employees, while 100 of the bonus

commission eligible employees receive no bonus/commission pay due to their individual and or company's performance. Out of the 1,000 employees in the classification, two hundred employees work for companies without a bonus/commission plan, so they receive no bonuses/commissions. The average Incentive (or bonus/commission in this example) shown by ERI is \$200 (or \$200,000 divided by 1,000 total employees).

---

#### **How is inflation is accounted for in the ERI salary ranges it provides?**

The data in the Salary assessor are primarily derived from salary survey data. However, we do use leading indicator analyses to measure expected growth from the mandated survey cutoff date (90 days) to the publication date. The rate of inflation is one of the variables used to measure the extent of compensation growth that is expected. Of course, this is not the only leading indicator used in this analysis. Other metrics such as the Prime Age Employment Population Ratio (EPOP), Quits rate, and Open Jobs rate are considered, among others.

---

#### **In the Salary Assessor, does the asset criterion for this industry mean total assets or assets under management?**

Assets represents Assets Under Management.

---

#### **My account number is 80399 and I have a couple of questions. Can someone please help me explain why the mean for this position went down from June in the last 6 months on this analysis? Also, was your software updated to include education and skill adjustment? It was not included on my export back in June?**

Our software does allow for users to customize compensation based on the skills, certifications (including government clearance), and education of their employees. We will also be adding shift differentials in an upcoming release. These adjustments are available in select subscriptions of the Salary Assessor. I've included some links highlighting this new functionality below.

I've looked into your reports and the data are correct. The results in your report are affected by multiple factors, including what is happening with pay in general at a given time, what compensation looks like in your area at a given time, and compensation trends in your industry at a given time. When we look at each of these elements individually, the values you've noted become clearer:

1. What is happening with pay for Learning Management System Administrators in general? While the compensation for Learning Management System Administrators has been relatively flat over the past year, we did see a small overall increase in compensation for this role in the United States since the January 1, 2021 database (which was used to generate your report on 06/14/2021).
2. What does compensation in your area look like? While compensation in Big Bear Lake and Rancho Cordova are still higher than in other areas throughout the US, we've seen a decrease in compensation in these areas in the last year.
3. What does compensation look like in your industry? We've seen slight decreases in compensation in the Water Supply Systems industry since 01/01/2021.

In this scenario, the increase in overall compensation for this role were overshadowed by decreases in your area and industry.

Skill-based compensation: <https://resources.erieri.com/v2/skill-based-compensation-data-now-available>

Certification-based compensation data: <https://resources.erieri.com/v2/certification-based-compensation-data-now-available>

Education customization: <https://resources.erieri.com/v2/education-customization-now-available>

---

**We are looking at executive compensation in the Assessor Series products and want to know whether revenue is "gross" or "net"?**

In general, the revenue value shown in the Assessor Series products is gross revenue.

The Assessor Series products draw their revenue information from several sources depending on which Assessor Series product is involved. Sources include 10-K (Annual Reports) and proxies (used by for-profit organizations), Form 990s (for nonprofit entities), executive compensation surveys, etc. The size numbers will match the criteria defined by the reporting form.

While accounting practices may differ among organizations, most entities follow generally accepted accounting standards. The revenue values used in the Assessor Series products are "actual revenue," the revenue actually received (as opposed to "expected revenue"), as reported by the organizations to the Securities and Exchange Commission, to the IRS, or through executive salary surveys.

Please refer to the following websites for specific definitions of revenue terms:

[www.irs.gov/instructions](http://www.irs.gov/instructions) (US Form 990s, 990-EZs, and 990-PFs)

[www.sec.gov/edgar.shtml](http://www.sec.gov/edgar.shtml) (US 10-Ks and proxies)

[www.canada.ca/en/revenue-agency/services/forms-publications/current-income-tax-information-circulars-6.html](http://www.canada.ca/en/revenue-agency/services/forms-publications/current-income-tax-information-circulars-6.html) (Canadian information circulars)

[www.bls.gov/bls/other.htm](http://www.bls.gov/bls/other.htm) (listing of international statistical agencies)

---

**Is it possible to provide a rough makeup of the participants for the National Compensation Forecast white paper? Is public sector included in this study?**

The National Compensation Forecast is calculated using results from ERI's Salary Assessor. Our analyses for this tool represent data from ~1,200 industries, 6,300 cities, and 1,946,247 organizations. Most of the participants are not governmental organizations, but there are some who participate. For example, there are city, county, and state governments who participate, as well as federal and state entities, such as Departments of Transportation/Education. However, we don't know the specific proportion of government/non-government organizations in the analysis as they frequently don't identify themselves as such. For example, a Department of Transportation may report their data for the transportation industry.

---

**As a Government contractor, we primarily use ERI Salary Assessor to estimate labor category salaries for pricing proposals. For each proposal, we use the NAICS code established for the solicitation we're**



responding to (usually 541330) as the basis of our estimates, but another possible NAICS would be the one established for entities engaged in promoting the interests of military personnel (928110).

What would help us decide which NAICS is best is if you could provide the source of the salary data used for NAICS 928110, National Security. Does your survey for 928110 cover Federal Government employees only, commercial industry personnel (i.e., Government contractors), or both, or something else? Is this information in your methodology somewhere?

We analyze data by eSIC and crosswalk to the closest matching NAICS code. In this situation, NAICS 928110 crosswalks to the eSIC code 9680 – Military All Government. This includes both government entities who participate in surveys and government contractors who operate in the defense sphere.

---

I had a quick question about the definition/interpretation of the years of experience in the Salary Assessor tool. I tried searching the glossary and methodology help resources but wasn't able to find an answer.

My understanding is that the years of experience is based on "years of experience in that specific role". However, I wanted to confirm whether or not that was true, or if years of experience in a similar role / almost equivalent role would "count" when benchmarking.

Based on the job description and my understanding of this role, I would assume that anyone in this role likely has some experience as a software engineer and/or software architect prior to becoming a Chief Architect. When reading this table, should I assume that the mean salary for a Chief Architect with one year of experience typically makes \$126,062 regardless of the number of years they previously worked in a very similar role like Software Architect? Or would I want to count years in similar/equivalent roles when finding a benchmark? For example, say we had someone who had been a Software Architect for 9 years that is now being hired as a Chief Architect. Would the appropriate ERI benchmark data point for the mean salary for someone of this profile be \$164,125 or \$126,062?

The data collected from surveys are reported as years in the specific occupation. However, organizations understand their own labor dynamics and structures better than any survey or external source could describe. The true salary value for any job is influenced by the previous years' salaries for the individuals in that job. There are also relatively consistent relationships between an employee's salary and the wages of their previous positions within an organization. In this case, it would likely be a good idea to include the years of experience in the previous, similar role when considering the benchmarking title's year of experience.

---

I have some questions as it relates to the years of service. I know that the jobs top out at a certain number of years. Are you supposed to use the years or total service or years of service for that job?

For example, if I have a Project Manager that has been with us for 20+ years, I do not have a wage for his classification. Should I be looking for his years of experience as a PM or his total years of experience? For example, He was an Engineer for the first 15 years and has been a PM for 5+ years. Do I search 5 years on the PM job report of 20? If the answer is 20, is there a way to do that since it's off the charts?

"Years of experience" generally refers to total years of directly related experience in a job from any and all employers. Given this, the employee's time in the Engineer role should not be included when generating compensation reports. The reports for this employee should begin at 5 years of experience, not 20.

---

**I was hoping you could direct me to someone to address a question I have regarding a difference in salary between two reports. The first PDF is attached and it shows total CEO pay of \$2.66MM while the excel file shows total pay of \$3.65MM – I was curious why there was a discrepancy and/or which report we should rely on.**

The differences between the "Total" values displayed in these reports stem from differences how these values are calculated on each page.

We analyze each component on the Survey & Proxy Analyses page (source of Excel report) individually, excluding individuals who did not receive a given component. On the Survey & Proxy Analyses page, Total is the additive sum of the other values in the grid, excluding Total Cash to prevent counting the salary and cash incentive twice. That is, Mean Total = Mean Salary + Mean Bonus + Mean Nonequity + Mean Stock Awards + Mean Option Awards + Mean Pension + Mean Other.

On the Total Compensation page (source of the PDF report), the Total value is the result of our regression analyses on overall Total compensation reported in surveys and in publicly available data and represents the average Total compensation value seen in our databases. With the Total value on the Total Compensation page, we do not care about the underlying combination of compensation components received by the executive. We sum all types of compensation the executive has received then run our analyses on that aggregated value. This value can be used in conjunction with the charts displayed on the page to develop an overall compensation package.

Most executives do not receive an award in each category displayed in the Survey & Proxy Analyses page, and if they do it is unlikely that they would receive at least the average value in each category, so we tend to see the Total value on the Survey & Proxy Analyses tab is greater than the Total value on the Total Compensation tab.

---

**Reaching out because I'm looking for recent articles and market studies regarding projected market movement and merit & adjustment budget trends to address salary concerns, like inflation and attrition. You may be hearing a lot of noise on these hot topics. If there's information that Aon/Radford has or anything you suggest to find out what organizations are offering to employees that would be great. I don't know for example if companies are providing additional benefits/compensation, that would be helpful to know the programs. And also, would like to know what/how companies are preparing post merit cycle concerns, for example is there post merit adjustment cycle being planned.**

Thank you for forwarding this email. Yes, we provide information on market movement and the economic impact of various factors on growth. We write a paper each quarter and I run a webinar each

quarter on this topic. Please find links to January's National Compensation Forecast Whitepaper and the accompanying Compensation Trends webinar (January recording).

Whitepaper: <https://resources.erieri.com/whitepaper/national-compensation-forecast-january-2022>  
Webinar Recording: <https://resources.erieri.com/webinars/january-2022-compensation-trends>

The April National Compensation Forecast will be coming out in the beginning of April, and I'll be giving the Compensation Trends Webinar on April 7th. I recommend attending if they have an interest in current market trends.

---

**May called in earlier and asked how she can find salary data on consultants/contractors. She tried a few different consultant positions but felt that the salaries were too low. She says that most of our consultant positions seem to be employees with benefits rather than independent consultants/contractors. Note that the job that you have in ERI for Business Dev Consultant is much too low. It appears to be more like an employee with benefits rather than as an independent consultant/contractor (no benefits, time limits on the need for the role, etc.).**

We collect data from the HR departments of organizations for their employees, so she is correct that the data do not represent independent contractors. To adjust for independent contractors, I might suggest adding the cost of taxes and benefits that the contractor will shoulder. This should give a fully loaded employer cost that should be more comparable to the contractor payment. Please let me know if she has any additional questions.

---

**I have an inquiry that will help with a project we are approaching. When we pull info from the Salary Assessor, the ERI Renter's Cost of Living reflects a different value if we select a General Manager position vs. a Fast Casual position. Why does the Renter's Cost of Living change based on the Job Title selected? Can you share more information about the ERI Renter's Cost of Living? What factors are used to create this value?**

This value changes because the Renter's Cost of Living is influenced by the selection of Position, Area, and Industry. This field is intended to allow users to compare salary to cost of living given a common benchmark (National Average).

The Renter's Cost of Living is a value that comes from ERI's Relocation Assessor. It represents a comparison for a given area to the National Average given the mean salary for the selected occupation. These occupations having different salaries, and this comparison assumes a specific spending pattern based on salary, estimating how much more or less it costs to replicate the same standard of living between locations.

You may go to [https://cdn.erieri.com/help/SA\\_V2/faq\\_data\\_background\\_8.htm?zoom\\_highlightsub=Renter](https://cdn.erieri.com/help/SA_V2/faq_data_background_8.htm?zoom_highlightsub=Renter) for an example comparison between the Salary Assessor and Relocation Assessor, noted on the Renter's Cost of Living background page in the user manual at [https://cdn.erieri.com/help/SA\\_V2/index.html?frequently\\_asked\\_questions.htm](https://cdn.erieri.com/help/SA_V2/index.html?frequently_asked_questions.htm)

---

**[XA] I was wondering if you could provide me with some examples of the following forms that are listed in the total compensation for executive positions:**

**Non-Equity  
Annual Incentive  
Stock  
Option  
Long-term  
All-Other**

**We know that you have the definition of each but we want to know how you define them by seeing the example of those forms to understand it better.**

Examples for each category are included below:

1. Non-Equity – This includes cash compensation that is awarded based on a predefined set of performance targets. For example, the CEO would be awarded \$5,000 if revenue increases by \$2M, but this will increase to \$7,500 if revenue increases by \$2.5M in a specified timeframe.
2. Annual Incentive – This includes any short-term cash incentives, such as sign-on bonuses, retention bonuses, Christmas bonuses, other discretionary cash incentives, etc.
3. Stock – Full-value equity awards including RSAs, RSUs, etc.
4. Option - The grant-date fair value reflecting contractual rights to purchase company stock at a fixed price
5. Long-term – This includes any long-term incentive, including stock awards, option awards, phantom stocks, other equity-based plans, long-term cash incentives, etc.
6. All-Other – This includes benefits and perquisites that exceed \$10,000, such as the use of a company car, country club membership, private jet, etc.

---

**Need to see if I can get an estimate of changes to median salary for my CEO. Being requested by the Chair of the BOD. The benchmark is \$190,482 for all 3 Levels. Is there a way to adjust that a certain percentage? Say for example, Level 1 is 1-10 years experience and is 20% below the \$190k benchmark.**

It sounds like this user is attempting to survey a CEO via Salaries by Level, however, executive titles cannot be analyzed in this manner in the platform. Salaries by Level will report data for a CEO that reflects salary at the revenue level they have indicated in the Analysis Based on Revenue box. In this case, it the user may consider using a lower percentile at their target revenue, should they wish to benchmark a CEO with minimal experience.

---

**Curious if there's a way to identify the % of hourly jobs listed in your salary database that are union vs non-union? Also, is there a participant list of companies?**

The mix of union and non-union employees in a particular job is generally not known as wage surveys tend to report the overall average of all incumbents in a job. Both union and non-union employers participate in the wage surveys. A few surveys distinguish between union and non-union employee wages (reporting the organized vs. non-union status of incumbents), however most do not. Also, the

status of incumbents can vary within employers. Organized jobs tend to be a relatively small proportion of most observations for most jobs in most salary surveys, but they will also generally be the highest-paid observations.

---

**For the job Construction Estimator are sub-contractors included or not?**

---

We don't differentiate between contractors and sub-contractors in our analyses. If an organization provides data for an industry, then it will be included in the analysis.

---

**We are interested in learning more about indirect labor costs in International Markets and had a few questions surrounding your data extraction methodology. Specifically, we are curious about what is included in your total salary figure (is it inclusive of bonus, employer social security, benefits, etc.). We just want to make sure the salary numbers we are looking at across countries are comparable for identical job functions.**

The total cash figures do not include Employer Social Security, Benefits, or 401k match. That value represents cash compensation of 1 year duration or shorter (generally Base salary + Bonus).

[Incentive refers to annual variable cash (which may include bonuses, commissions, short-term non-equity compensation, or other cash incentives). The heading of Incentive does not include stock awards, option awards, pension, or other non-cash compensation. These components are listed separately.]

---

**What is the distribution of population over the "years" when I'm looking at job titles like "material handler" and "warehouse labourer"? How is ERI able, on a quarterly basis, update what market rates are?**

Essentially, we gather salary data from multiple industries and locations and analyze the data to provide reliable salary information for our customers. Our data come from internal salary surveys, salary surveys we purchase from third parties, and publicly-available data. Overall, our databases represent roughly 60 million incumbents. We don't keep record of population distributions over the years; however, we do provide incumbent population ranges within the system. These are displayed for each title-area selection and look like the following example.

[screenshot of employee populations]

ERI uses a time series analysis of multiple quarters' data in our analyses. This analysis is called a longitudinal meta-analysis and references multiple salary surveys, which allows for a larger sample size. The data going into these analyses are updated each quarter with the newest data being 90 days old at the time of publication (to comply with antitrust laws). Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well with a leading indicator analysis. These leading indicators include inflation, the unemployment rate, quits rate, and open jobs among others. The question we are answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. I recently conducted a validation study to measure the accuracy of

these methods. This study indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email.

We've recently shortened our data release cycle from quarterly updates to 6-weeks, in response to the current market changes. We're working to provide sufficient update frequency to reflect the market, while providing enough time for high quality data analysis. We think this 6-week update cycle will strike that balance well.

---

**When I change the revenue for experience-type jobs, nothing happens. Can I use revenue for these?**

ERI added the ability to analyze lower-level jobs by organization size – Revenue (for example) – due to an increase in the volume of data collected, however, ability to include revenue in the analysis is dependent upon the job title selected. Each job is analyzed individually and once it is found that revenue/assets significantly impacts a job at varying organization sizes, the user will see that reflected. However, revenue/assets do not have a measurable impact on compensation for almost half of lower level jobs.

---

**Is it possible for us to run the comp data for directors and above based on years of experience vs revenue in the ERI system? The reason being, we are a start-up so our revenue isn't there yet so and we're hoping to run the comp data for directors and above based on years of experience.**

Unfortunately, it is not possible to view executive jobs by Years of Experience. We have found that organization size is the best predictor of compensation for executives, and as a result, we reference revenue.

For a startup, we would recommend determining the revenue level that best corresponds to the actual size of your organization. We use revenue as a proxy for organization size, and startups frequently have revenue that does not match the organization size. In this case, you might focus on your organization's annual burn rate instead of revenue. That can get you into the right size range, so you can compare against peers of the same size.

Burn rate is a metric we recommend start-up companies use for peer analyses, however it is not an organization metric that we reference in the system. The organization's burn rate would not be entered into the system, but would instead be kept in mind as you see organizational growth, before revenue matches the organizational size.

Years of Experience analyses can be performed on non-executive level positions, however for directors it is by organization size and the minimum revenue level for analyses in our system is \$1 million. Below this threshold, it is to the user's discretion to determine the revenue level that best corresponds to the actual size of the organization. In the Salary Assessor, you might survey compensation at \$1 million revenue and determine a ratio for comparing it to your organization's current revenue.

---

**We typically use the years of experience option as opposed to the level option. However, we've implemented a comp management system and feel the best approach moving forward is to use the**

level option but wanted to get more information and/or best practices on that. I see the little info bubble which provides a little bit of insight, but I think when it comes to a Manager level job in particular, I'm trying to understand if there's a typical level used for say a Manager, Senior Manager, etc. There's quite a big difference between the three levels and I want to make sure I'm utilizing the correct one.

levels

---

**I am trying to locate the employers contribution amount of executive deferred compensation for private companies only. Is there one of these columns, that will direct me to this or is there something else I should be using?**

Thank you for reaching out today. Please kindly note that at this time there is not a way to filter the compensation data to include only private entities. The research that we have conducted indicates that there is not a significant difference in the dollar amount of packages for executives in each category. We should note that while we cannot provide much information about the private organizations (due to confidentiality agreements), we have data for significantly more private organizations than public organizations in our database.

---

**For this position, would the revenue level used be the revenue of the whole company or just that of the division? If it's the latter, are there any other positions that follows this rule?**

Different organizations apply different pay practices to division-specific titles, so there's no exact answer that fits all situations like this. In short, if the organization revenue looks too high for a user, we typically recommend they use the division's budget or revenue values to benchmark instead. However, there are many organizations which utilize the organization's revenue when considering compensation for these types of titles, so it's typically considered on a case-by-case basis.

---

**In looking at salary data for Perth, Australia I see that this location and others are listed as "extended geographic database" vs. "primary geographic database". What does extended geographic database mean and what is the difference? I see there is no # of incumbents reported for this location.**

The extended geographic database areas are imported into the Salary Assessor from our Global Salary Calculator (GSC) platform. We cannot provide estimates for "number of employees" for some areas as these require national employment data that we don't have outside of the US (through OES), Canada (through a license with Statistics Canada) and the UK (through a license with the Office for National Statistics). These areas aren't broken out by industries or years of experience like the primary geographic database areas native to the Salary Assessor, so they're imported over with a mean value for the given occupation across the selected percentiles. The Global Salary Calculator is the database which we've run for 30 years to provide international salary information to customers, and the areas within the GSC were recently added to the Salary Assessor at the request of multiple users who used both products separately.

---

**What job title should I use to fine comparisons for a police officer or school resource officer? If this data for police officers does not exist in ERI, why is that the case?**

At this time, the ERI team omits salary data for Police and School Resource Officers. Our reasoning is that it is local police or sheriff's agencies hiring and allocating these positions to school districts, and each city's agency would already have their respective salary data available to them.

**How do we take into consideration experience for exempt employees. Also, what does the 25th percentile, etc. refer to?**

#### Jobs by experience vs company size

Unfortunately, it is not possible to view executive jobs by years of experience, and Controller is analyzed as an executive in the ERI database. We have found that Organization Size (FYB, #Employees, Revenue, or Assets depending upon the selected industry) is the best predictor for compensation for these types of jobs. In the case of the below survey, you might start by utilizing your actual Organization Size cut – it looks like FYB \$27.6M – and then reviewing the Percentiles for that Organization Size cut. Organizations typically adjust salary to lower or higher Percentiles depending upon the incumbent having less or extensive experience.

RESEARCH

Home

susan.singer@fidf.org

III Salary Assessor

Job Report

Benchmark List

Geographic List

Salary Planning

Advanced Reports

Data as of 7/

Organization Name (Optional)

FIDF

Job Title

Controller

Browse

Area

New York, New York

Browse

Averages

Industry

Nonprofits

eSIC Code

8699

NAICS

813200

usSEC

8600

Browse

Analysis Based on

Fiscal Year Budget

27,600,000

Salary Planning Date

10/21/2022

Controller

ERI: 220328 | eDOT: 160167058 | SOC: 113031

Salaries By Experience/Size

Salaries By Level

Compensation Type

Base Salaries

Pay Period

Annual

\$ Fiscal Year Budget

Percentiles

Fiscal Year Budget	10th Percentile	25th Percentile	Mean	75th Percentile	90th Percentile
276,000,000	111,035	159,862	213,829	275,380	330,808
27,600,000	87,616	127,901	173,528	224,248	269,312
2,760,000	56,965	84,937	117,767	155,188	188,168

Survey Description

eDOT Description

Adjustments

Job Characteristics

Alternate Titles:

Controller, Inc, Corporate, Inc, Controller, Corporate, Comptroller, Corporate, Controller

#### Percentiles



**I have a subscription to the Salary Assessor and I've noticed that the spreads between P25, P50 and P75 are consistently more narrow than other surveys (e.g. Mercer, Willis Towers Watson, etc.). For example, in ERI, P25 is often only 5% lower than P50 whereas with other surveys, P25 is often 15% lower than P50. I am wondering if you can please provide an explanation as to why the spreads are consistently narrow. I am assuming it has something to do with the statistical analysis ERI does in the background, which results in less variability and therefore more narrow spreads. But I'm not educated enough to explain it! Can you please help?**

Thank you for reaching out to us about this. These narrower percentiles are expected due to the differences in methodology between us and more traditional surveys. We use a methodology called Meta Analysis, which analyzes the results from many individual salary surveys. The sources that you mentioned are individual surveys. Examining many surveys increases the sample size, which reduces the spread between percentiles. The spread in percentiles is reduced because, as more observations are collected those observations tend to cluster around the mean. Please let me know if you would like to discuss this further. I would be happy to jump on a call and walk you through the math.

---

**We are questioning why Calumet City, IL [and Lansing, IL] is showing higher wages than Hammond, IN, when they are 3 miles apart and very likely pulling the same pool of drivers. Is there something about IL that is adding in additional wages?**

While Calumet, IL and Hammond, IN are close in proximity, there are differences between the two areas in terms of compensation. The primary reason for this difference is because they are in different states with different minimum wages. Indiana has a \$7.25 minimum wage and Illinois has a \$12.50 minimum. Of course, the jobs you're referencing are higher than those minimum wage values, but two factors push average compensation rates up in places with higher minimum wages. The first is compression due to a higher low end pushing up the next level of workers, and the second is range restriction. If we think of compensation grouping as a bell shaped curve, the removal of the left side of the curve due to a higher minimum wage will act to increase average salaries due to the removal of lower paid workers. The latter is the force that pushes up the first level compensation and the former pushes up the second level.

**In your opinion, should we be limiting our comparison to the same state as the zip code then? Meaning if the "closest ERI city" is in a different state than the zip in question, we use the post office location for the look up instead?**

This is a bit of a complex question without a clear answer. Really, either approach would be appropriate, but there will be labor competition to consider with the proximities of these locations. The lower figure will may result in higher turnover due to the proximity of competition, and the alternative carries the risk of overpayment for labor in a lower cost of labor market. This one really comes down to the pros and cons of each option, and what works best for their goals.

**My understanding was that the salary assessor wage data is based on survey data for the relevant locality. Based on the data team's answer below, I'm guessing that the modeling is more complicated. My reasoning being that if local wage surveys were factored in those presumably would account for the competition effects (i.e. local employers would already be offering higher wages to compete).**

Thank you for forwarding this note. Our analyses are designed to capture the overall labor markets and include factors to determine how commuting distances influence compensation. However, our analyses

also include analyses for state level laws such as minimum wage. Because of this, our geographic analyses do not cross state lines. Generally, this methodology leads to more accurate results, but this is a case where these analyses have led to an odd result. Calumet, IL is within the commuting distance of Chicago and is influenced by the shared labor analysis for that city. However, Hammond, IN is across the border in Indiana and does not use Chicago in its shared labor analysis. This is an edge case, but our team is looking into it now. I believe this finding is enough to warrant an adjustment to the shared labor analysis, and we're going to be starting on this now. Please let me know if they have any additional questions.

---

**When applying certifications that are not labeled as “Premium” with a given job title, does the customer have to generate an arbitrary custom figure to apply, or is there anything we would be able to recommend to them? For example, they would like to apply the OSHA Forklift Operator certification to a Warehouse Worker, and it is classified as Custom.**

We haven't collected enough data for this specific job and certification combination to show it in the Salary Assessor yet. Adjustment premiums are analyzed at the job level, which means providing an exact premium value for the certification or the job can be difficult when ERI has not associated them together at this time. However, we can provide an estimate range that other job titles that have the requested certification fall within to help guide the customer to a custom premium they feel aligns with their organization's needs. OSHA Forklift Operator currently has a premium estimate range between 3.4% and 6.7%.

---

**[XA] On the Total Compensation tab, why does the Total Direct does not equal Total Cash + Long Term?**

The Total Compensation tab shows descriptive statistics for people who earn a certain pay component (removing the 0s from the analysis). If we assume all CEOs earn some form of cash compensation, we can say that all CEOs will be included in the calculation of the statistics for Total Cash, Total Direct and Total. However, not every CEO has a long-term incentive plan, so only a subset of this group are included in the calculations for Long Term in the Total Compensation tab. Since this group of executives is different, Total Cash + Long Term does not equal Total Direct. This approach prevents the following example: Assume there are 100 CEOs in our analysis and only 1 received a non-equity award, of \$100k, but all others received no non-equity award. If all the 0 values are included, the average non-equity value would be \$1k. However, if the 0s are removed, we can report that the average non-equity award for people who received a non-equity award was \$100k, which we feel is more appropriate.

---

**How current is the latest data and when will it be updated again?**

As of Q2 2022, ERI has now implemented mid-quarter updates to our dataset to go along with our Quarterly updates. The latest dataset therefore is from Q4 2022, and we expect our next update to occur around mid-November.

**When you say “latest data”, what time period is actually covered in our analyses for a given update?**

The most recent data in the Salary Assessor is 90 days old at the time of publishing. This 90-day lag is required by law under the Sherman Antitrust Act and is something we follow to ensure that our customers don't run afoul of that law. This is one reason we use a time series methodology for the Salary Assessor. This methodology predicts current market rates by examining the rate of growth over time. We then use a leading indicator analysis to account for changing markets in the 90 days since the data freeze. We have examined the accuracy of this methodology through a convergent validity study, which showed a predictive accuracy of over 99%. Please find the results of this study attached with this email.

Our data are sourced from three sources, surveys we conduct ourselves, surveys we purchase, and publicly available data (Proxies, 10ks & 990s). The data for internal surveys that we conduct are analyzed annually between when the participation window closes. The surveys we purchase are published on an annual or quarterly basis. Most salary surveys are published on an annual basis and a smaller number on a quarterly basis. These surveys are published throughout the year, and they are entered into the Assessor analyses at the time of publication. Proxy data for public companies is scraped every week and new data are added to the database. We also collect data from other public data sources, including data from Forms 990 and data for international public companies, as the data becomes available. This occurs for each source at least monthly.

---

**I'd like to obtain a list of survey participants and am particularly interested in Agricultural Chemical Manufacturing and Support Services participants. I would also like to know if that sector is available for United States, Mexico, Canada, Japan, China, India, UK, Europe (all), Brazil, and Vietnam. I'd like the lists only for these jobs: Executive, Salesperson Highly Complex Products, Product Development Representative (or Product Development Engineer), and Key Account Manager (or similar).**

At this time the United States public participants in this industry can be specified, please find them attached. Please kindly note that we had to target data for eSIC 2879 in the other requested areas for survey purchase through third-party vendors. Industries and areas where we do not have much directly-collected data are targeted for survey purchases, and this is one of those cases. Unfortunately, this means that we are unable to release a participant list since the participants' data from these purchases are locked under confidentiality agreements we hold with the survey vendors. We should note that our confidentiality agreements with third party survey providers increase the volume of data that we are able to bring into the Salary Assessor.

Also, we do not provide participant lists by job because this type of list doesn't represent the data we report. Occupations don't exist in isolation within organizations, and we don't analyze them in that manner. We analyze occupations within the context of occupational hierarchies and competitive peer groups, which allows for a better picture of rates within specific labor markets. We find that industry specific lists are better at capturing the scope of data we offer. However, users can [view the Survey Population](#) of positions, which gives the estimated number of incumbents (reported as a range) used for the selected job and geographic area.

---

**We are reviewing the data for these 2 roles: Program Manager and Project Manager. I am wondering if there is a possibility the data is reversed between these? We have looked at other comp data**

**sources for these same 2 roles and it suggests that Program Managers are at a higher level than Project Managers however, in ERI, that is severely not the case.**

I agree that this finding is surprising. I looked into the figures and can confirm that the compensation in the Assessors appear to be correct. I don't see any issues with the underlying data that we've collected. The Project Manager is one occupation which the data showed variation based on specialty—this is borne in the survey data from multiple sources. Because of this, we have many breakout specialties for the role within the system. The general Project Manager data is still used by many organizations, so we've chosen not to do away with the role when adding the specialty breakout occupations like Project Manager Finance. I'd suggest utilizing an appropriate specialty Project Manager role in this case, if possible. The industry selection also plays a part in driving the compensation analysis of occupations, so setting both the correct title and industry will drive the most accurate results.

I'll be happy to help with job matching if you'd like to send over the job descriptions. Sometimes it's a matter of finding a matching job based on description instead of the title alone, as different organizations tend to apply unique naming for their own job titles. This is why we often search for variations in the survey data and double-blind match each incoming survey on job description rather than title.

---

**I am reaching out today because we are doing a market salary survey for medical assistants and the figures in ERI seem low. For example, we looked at MA pay ranges for the Castro Valley area. The median pay ranges from 18.60-21.44 in ERI, however when we compare using salary.com/comp analyst it shows a range from 20.61-24.10. we are concerned in the variance in ranges provided by ERI, using data that could hinder proper recommendations to management that greatly impacts pay for our employees and ability to be competitive in a tough market. Can we get some help to explain the varying differences provided by ERI? We are looking at Certified MA, 1- 3 years of experience in healthcare**

Thank you for the details. I looked into the figures and can confirm that the compensation in the Assessors appear to be correct. I don't see any issues comparing to the underlying data. Taking a look at the ranges, it looks like the selected job may be Medical Assistant rather than Certified Medical Assistant. This is one occupation which the data showed variation based on specialty—this is borne in the survey data from multiple sources. Because of this, we have four breakout specialties of the Medical Assistant role within the system: Medical Assistant, Certified Medical Assistant Plastic Surgery Medical Assistant, and Clinical Medical Assistant. Combining these data into a single role may increase the compensation and lead to incorrect results; this is why we often search for variations in the survey data and double-blind match each incoming survey on job description rather than title.

Our roles in the system provide information on the compensation of occupations before applying pay adjustments such as additional certifications, shift differentials, and education. I can't speak to the methodology of Comp Analyst, but can say that our data is built intentionally to provide occupational analyses at a granularity which allows our users to apply such compensation adjustments on top of the base pay rather than including them across the board with the use of simple averaging aggregations. This prevents a skew of the data which can be caused by the effects of sampling error. We avoid the use of simple means/medians where possible as we feel this method is the purview of traditional salary surveys, and is different from our analytical approach. We have found that the use of multiple data

sources yields more accurate results than any single data source. This increased accuracy is due to the larger volume of data that our methodology provides.

---

**I am in the middle of a federal proposal that is dragging on and on. Gov't keeps extending the due date. Original due date was early Sept, now will be extending into mid-late November.**

**I am currently using salary assessor data from July 1, however I know I can update to October 2022. I am reluctant to update because I will lose access to the July 1 data if I ever need to go back to that data for new LCATs/**

**Just as input for me in the decision to update, do you have data or can you develop data on the relative percentage increase in your salary database between July 1, 2022 and October 1, 2022. This would help inform my decision on whether or not to pull down the update.**

Unfortunately, we aren't able to provide percentage increases between the database dates. We often note that jobs don't all increase or decrease as a consistent rate. Overall, jobs move independently of each other, not together all in a straight line which the inflation rate may suggest. This is why we review and release our data every six weeks, making sure we keep up with current figures across all jobs, industries, and areas. Each of the inputs moves an individual occupation's compensation separately, so it is impossible to create a report of a generalized increase/decrease for all jobs, all industries, and all areas. A single percentage would not be a true reflection of the underlying data.

As you noted, our databases and software are developed to show the most up-to-date values available. We only maintain two quarters of data in the assessors at a time. For a fee, our Subscriber Services team ([info.eri@erieri.com](mailto:info.eri@erieri.com)) can provide historical reports which pull from past databases. You are able to request reports from the July 1st and other previous data at any time. For your reference, I've attached a report from the October 1st database to help inform your data update decision. If you'd like additional reports from this database, please request them from Subscriber Services. They can pull those for you in just the same way they can pull historical data.

I'd recommend exporting the July 1st datasets that you'll need from the system using the Job Report, Benchmark List, or Advanced Reports tabs regardless of whether you update the database date. That will allow you to reference the data at any time.

---

### **Why is the location named "United States Average"?**

Rather than calculating local data using a simple geographic differential from a national level, ERI starts with local data for each city in the system. These data come from the reported areas within the surveys. We then analyze similarities and differences between locations, and use these data to aggregate upward into County-, State-, and National-level data. These data are averages of the underlying inputs, so they take on names reflecting this analysis, such as United States Average in this case.

---

**A methodology question for you. For market data that is specified for a certain location (area, ex: st. louis), is the survey data narrowed down to respondents in that area? Or is it calculated by applying a geographic differential?**

Our data come from the reported areas within the surveys, we do not use a geographic differential from a national average. In contrast to simply reporting the means/medians directly from surveys, we use multiple levels of analysis to provide results which accurately reflect the market reality of compensation for occupations by assets/experience, industry, and geography. Compensation data are associated with each location by participant response. Since organizations know their location better than us, we rely on participant input for the assignment of specific compensation data to a given city. We have found this method to result in more accurate data and allows for more fluid analytical relationships than other methods, like geographic differentials.

---

**[XA] Hi there, I have a question pertaining to the Executive Comp Assessor (Survey & Proxy Analyses) output regarding Non-Equity. I read the small question mark icon that says Non-equity is “Performance-based compensation paid as cash rather than equity”. Would this include profit sharing plans as well? Since they are paid in cash at time and not deferred?**

On the Survey & Proxy Analyses tab, we analyze two specific types of incentives: discretionary cash incentive (bonus) and objective or performance-based cash incentive (non-equity). We use the SEC’s definitions for these terms, and more detail can be found here:

<https://www.sec.gov/divisions/corpfin/guidance/regs-kinterp>. Question 119.02, which I’ve included below, is particularly relevant in the example provided below.

Based on the SEC’s definition of non-equity awards, if the profit sharing plan includes performance targets for specific pay-outs (i.e. 2% profit share is awarded if revenue increases by \$10M), and if the outcome was substantially uncertain at the time that the plan was created and communicated to executives, the actual pay out would fall into the Non-Equity field on the Survey & Proxy Analyses page. Otherwise, the profit sharing pay out amount would fall into the Bonus category.

SEC Question 119.02:

Question: Should a discretionary cash bonus that was not based on any performance criteria be reported in the Bonus column (column (d)) of the Summary Compensation Table pursuant to Item 402(c)(2)(iv) or in the Non-equity Incentive Plan Compensation column (column (g)) pursuant to Item 402(c)(2)(vii)?

Answer: The bonus should be reported in the Bonus column (column (d)). In order to be reported in the Non-equity Incentive Plan Compensation column (column (g)) pursuant to Item 402(c)(2)(vii), the bonus would have to be pursuant to a plan providing for compensation intended to serve as incentive for performance to occur over a specified period that does not fall within the scope of Financial Accounting Standards Board Statement of Financial Accounting Standards No. 123 (revised 2004), Share-Based Payment ("FAS 123R"). The outcome with respect to the relevant performance target must be substantially uncertain at the time the performance target is established and the target is communicated to the executives. The length of the performance period is not relevant to this analysis, so that a plan serving as an incentive for a period less than a year would be considered an incentive plan under Item 402(a)(6)(iii). Further, amounts earned under a plan that meets the definition of a non-

equity incentive plan, but that permits the exercise of negative discretion in determining the amounts of bonuses, generally would still be reportable in the Non-equity Incentive Plan Compensation column (column (g)). The basis for the use of various targets and negative discretion may be material information to be disclosed in the Compensation Discussion and Analysis. If, in the exercise of discretion, an amount is paid over and above the amounts earned by meeting the performance measure in the non-equity incentive plan, that amount should be reported in the Bonus column (column (d)). [Jan. 24, 2007]

---

**[XA] ERI's Methodology for XA says that equity compensation amounts come "solely" from SEC data. But sometimes in Survey & Proxy Analyses, in the lower right corner of the screen where the names of public companies would be listed, there are none there. So if there are none listed there, where do the equity amounts (Stock Awards and Stock Options) come from? Please see the attached example, where there are no public companies listed in the lower right corner, but the CEO's Stock Awards amount is \$429,773.**

Equity compensation figures are only from SEC data, though the compensation values aren't simple means of the organizations in the "Refine List" filter. The compensation figures in the top section are controlled by the variables in the "Adjustments to Compensation Analyses" window on left. In the scenario you sent, this means that the revenue is for organizations with 50M in revenue. The specific analysis that controls the revenue function is a cubic spline regression. We use this analysis to examine how these compensation figures change across revenue, which is the published value. The "Refine List" box is a filter that allows you to view the organizations that might be present in a specific cut, but doesn't change the compensation figures. Those are controlled by the "Revenue" value.

[internal notes: The data in the Survey & Proxy Analyses tab comes from both public and private organizations. However, the companies in the Refine List section and compensation graph only include the public organizations matching the user's global settings, otherwise we would be breaking confidentiality agreements with our survey participants. This is also why changing the companies displayed in that container do not update compensation estimates (because this is only part of the picture).

The Top Management survey includes sections for long term cash as well as equity. We do receive equity data from private organizations through our surveys, as well as from those we purchase. As such, we ensure that the definitions for each compensation component in our survey, including equity, align with the SEC's definitions so we can pull this data into the S&P analyses. With private organizations, this typically means they are reporting phantom stock awards under the "Stock Awards" header.]

---

**[XA] I believe that the equity amounts (Stock Awards and Stock Options) are the averages based only on those executives who actually received those types of payments. So for example, if three executives received stock awards, then the Stock Awards amount shown would be the average of those three. And if six executives received stock options, then the Stock Options amount shown would be the average of those six. Could you please confirm that?**

Yes, this is correct in principle. This value is a "conditional mean". A conditional mean (also called regression) allows us to calculate the mean equity value X based on Revenue Y. This value is only

calculated for individuals who received equity compensation. Individuals who did not receive equity compensation are not included in this analysis.

---

**[XA] In the attached screenshot, the CEO's Total on the Estimated Survey Mean line (\$1.5 M) is higher than the Max Reas Comp (\$1.29 M). I believe this is because one would not expect to receive all of the amounts shown in long-term incentives. In other words, someone who receives Stock Awards would not also receive Stock Options. And someone who received cash comp at the 95th percentile would not expect long term incentives also. Could you please confirm that?**

Correct. "Total" is simply the sum of values to the left. Most executives will not receive all types of compensation.

---

**In the attached screenshot, you can see that I input Florida – State Average. I believe that ERI expands geographically if necessary to find at least ten subject companies. So although I input FL, there could be a company or two in GA included. Could you please confirm that?**

ERI's geographic analysis for States do not expand into adjacent states. Our city analyses do consider the commuting distance surrounding an area to better capture the full labor market, but this logic isn't applicable to state level data. For this reason, we do not expand geographies for State level data.

---

**[XA] Is "Stock Awards" the value of the stocks which the CEO annually gains from the company? Or, is it the value of stock which the company buys back the stock from the CEO?**

Stock awards reflect the stocks that the CEO gains from the company.

Here are some helpful links that talk about how the SEC requires Stock Awards to be reported in the Summary Compensation table:

<https://www.sec.gov/divisions/corpfin/guidance/execcomp402interp.htm>

<https://www.law.cornell.edu/cfr/text/17/229.402>

---

**[XA] When you report out stock options in the Executive Compensation module, how are you quantifying those options?**

The Executive Compensation Assessor utilizes SEC definitions in reporting data for stock awards and other compensation estimates displayed in the Survey & Proxy Analyses page. The federal regulations governing the disclosure of information on executive compensation are defined in Regulation S-K, which is available on the SEC website: [www.sec.gov/divisions/corpfin/guidance/execcomp402interp.htm](https://www.sec.gov/divisions/corpfin/guidance/execcomp402interp.htm)

---

**[XA] One quick question regarding "Change in Pension, etc" item shown in your survey and proxy analysis. The definition from ERI is "The incremental change in pension value and above-market earnings in NQDC plans". Is the change in pension value equivalent to the employer contribution to**



**the retirement plan? And why are the “above-market earnings” and then what is the market benchmark here?**

We use the SEC’s definition for the compensation columns included in our products. The Pension column in the Survey & Proxy Analyses tab and the Pension NQDC column in the Comparables tab align with the Change in Pension Value and Nonqualified Deferred Compensation Earnings column in proxy statements. Gibson Dunn has a pretty good breakdown of this column on page 31-32 of their Executive Compensation Disclosure Handbook found here: <https://www.gibsondunn.com/wp-content/uploads/documents/publications/Ising-Mueller-Harvey-Executive-Compensation-Disclosure-Handbook-Donnelley-Financial-Solutions-Oct-2016.pdf>

In short, the change in pension value does not include changes under any of the company’s defined contribution plans, such as 401(k) plans. Interest on deferred compensation is above-market if the rate of interest exceeds 120% of the applicable federal long-term rate, with compounding (as per Section 1274(d) of the Internal Revenue Code) at the rate that corresponds most closely to the rate under the company’s plan at the time the interest rate or formula is set (or reset, should the rate be reset).

---

**[XA] I see the numbers don't add up, but this is where I get confused. Non-equity bonuses that are NOT paid out annually in my mind would be more like a performance-based long term incentive that's paid out in maybe 3-5 year or so increments. If that's not the case, please help me understand. STI incentives are typically paid annually, as has been my experience anyhow. If your bonus and non-equity bonuses truly are both short term incentives, then in practice, both of those bonuses plus annual salary typically equals TCC.**

When generating compensation estimates for the Survey & Proxy report, we analyze each compensation component individually to show descriptive statistics for people who earn a certain pay component (removing the 0s from the analysis to prevent skew). This approach prevents the following example: Assume there are 100 CEOs in our analysis and only 1 received a nonequity award, of \$100k, but all others received no nonequity award. If all the 0 values are included, the average nonequity value would be \$1k. However, if the 0s are removed, we can report that the average nonequity award for people who received a nonequity award was \$100k, which we feel is more appropriate. Since the sample sizes for the Bonus and Non-equity components vary, Salary + Bonus + Non-equity does not equal Total Cash. Additionally, we use the SEC’s definitions for the terms available on the Survey & Proxy Analyses page to ensure the survey data we collect aligns with the proxy data we gather.

I like how this site breaks down the SEC’s definitions and the instructions they provide for populating the Summary Compensation table in proxy statements: <https://www.gibsondunn.com/wp-content/uploads/documents/publications/Ising-Mueller-Harvey-Executive-Compensation-Disclosure-Handbook-Donnelley-Financial-Solutions-Oct-2016.pdf>. Here are some points of interest:

3.1.1 Bonuses. Companies must report in the Bonus column the value of cash-based guaranteed or discretionary bonuses, retention bonuses, hiring bonuses and relocation bonuses that are not based on pre-established performance criteria. Bonus amounts are disclosed for the fiscal year earned, not paid. For example, a retention bonus payable upon service through the end of the fiscal year is reportable for that fiscal year, even if actually paid by the company in the following fiscal year. Cash amounts earned under a “non-equity incentive plan” are not reported in the Bonus column but under the Non-Equity Incentive Plan Compensation column when earned.

When Is a “Bonus” a Non-Equity Incentive Plan Award? An award is generally not a “bonus” for purposes of the Summary Compensation Table if the award is intended to serve as incentive for performance to occur over a specified period of any duration, even less than a year, and (1) the outcome of a performance target upon which payment of the award is conditioned is substantially uncertain at the time the target is established and (2) the target is communicated to the executive. A nonequity incentive award is reported in the Non-Equity Incentive Plan Compensation column of the Summary Compensation Table when and to the extent earned, and not in the Bonus column. However, if the company, in its discretion, pays an amount in excess of the amount earned for achievement of the performance measures established for the non-equity incentive compensation, the company should report the value of the excess amount in the Bonus column.

**3.1.3 Non-Equity Incentive Plan Compensation Column.** Companies must report in the Non-Equity Incentive Plan Compensation column the dollar value of all amounts earned during the applicable fiscal year under non-equity incentive plans. Non-equity incentive plans are incentive plans that are not covered by FASB ASC Topic 718 for financial reporting purposes (e.g., cash-based plans). Incentive plans are generally defined as plans, contracts, authorizations or arrangements, even if not set in a formal document, providing compensation intended to serve as incentive for performance to occur over a specified period, and are contrasted with amounts reported in the “Bonus” column.

**Report Amounts Only When Earned.** Unlike stock awards and option awards, which are reported in the year granted, a company reports nonequity incentive plan awards only for the fiscal year when the specified performance criteria under the plan are satisfied and the compensation is earned. If a relevant performance measure is satisfied during a fiscal year (including during a single year in a plan with a multi-year performance period), companies must disclose the amount earned as compensation for that year, even if not payable until a later date (but then companies are not required to subsequently report the actual payment). The SEC justifies the inconsistency between the treatment of equity and non-equity awards (disclosure in the year of grant as opposed to disclosure in the year earned) on its view that there is no clearly required or accepted method (like FASB ASC Topic 718) for establishing a grant date fair value for nonequity based incentive awards that reflects the performance contingencies

---

**The incentive proportions given by ERI is significantly lower than the proportion given by other sources such as Glassdoor (2-3% vs 5-18% of base).**

- **Incentive data appears to have been calculated by applying a flat rate to the reported base salary (2.02% for 1yr of experience, 2.22% for 8yrs of experience, 2.60% for 15yrs of experience) across every US state and percentile, rather than through an average of actuals reported by companies, giving a slightly false level of precision**
- **An increase of bonus by +0.4% over 15 years of experience feels instinctively too low**

This question has a few underlying pieces, so I have tried to be detailed in my answer. As it is useful to consider the full scope, I’ve detailed the parts in relevant sections below and have included the methodology downloaded from our Help menu found at the top of the Salary Assessor.

#### Data Source

ERI uses employer-reported data, and the source mentioned below uses an employee-reported methodology. To research the difference in these two methodologies ERI set up a website called SalaryExpert.com. We found that the data collected from employees varied greatly from the data

collected from HR departments. This difference appears to be due to differences in the types of employees targeted. HR departments send data for the full range of employees within an organization, and we've elected to continue focusing on employer-reported data.

#### Incentive Analysis

ERI analyzes all incentives for titles as a percentage of base salary. This allows us to examine how incentives change based on years of experience. Percentage of base is a common method of reporting incentives and it works well for our specific analyses. Incentives for each occupation are regressed against years of experience using a form of cubic regression. We find that customers prefer nominal figures for incentives, so we do the calculation in our reporting. Our methods do not rely on the reporting of means/medians simply compiled from the survey sources. We feel that this method is the purview of traditional salary surveys and is different from our analytical approach.

#### Analysis Methodology

The Assessors are a higher-level data analysis of compensation surveys. Essentially, we gather salary data from multiple industries and locations and analyze the data to provide reliable salary information for our customers. Our data comes from internal salary surveys, salary surveys we purchase from third parties, and publicly available data. Overall, our databases represent roughly 60 million incumbents. Our primary analyses are conducted using several different types of analytical methods. We use cubic spline regression for years of experience and revenue. This is a type of analysis allows for wages to increase at different rates for different years of experience/revenue. Standard regression is used for differentiation between geographic areas. We differentiate between industries with polynomial regression.

ERI uses a time series analysis to determine the growth rates for individual occupations. This analysis is essentially a longitudinal meta-analysis of multiple salary surveys, which allows us to predict compensation rates more accurately. The data going into these analyses are updated each quarter. Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well. There is a bit of calculus involved, but the question we're answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. We've conducted a validation study to measure the accuracy of these methods, which indicated that this methodology predicted survey responses with an accuracy of 99.1%. I have attached the results with this email. These methods give us a clear picture of how a specific occupation exists within a labor market. Over the years, the accuracy has been demonstrated by later salary surveys which have included the job in question as well as company/customer feedback.

---

**We are conducting an analysis on several of our store operations roles and are using ERI data to facilitate the study at the zip-code level. As part of this analysis, we are evaluating the difference in pay in the food/restaurant industry, as compared to the general industry.**

**Our approach was to pull reports for several jobs, listed below, in both the restaurant/fast-food industry and the all-industry data cut, and compare. We found that there is no difference across all of the roles in the ~500 locations we operate in.**

- **Fast Food Worker**
- **Fast Food Cook**
- **Shift Leader**

- **Manager Trainee**
- **Food Services Manager (Mid-Size Location)**

This is particularly surprising for the Shift Leaders and Manager Trainees, which would certainly span multiple industries.

While we did not have specific expectations for the numbers to be considerably different, the numbers being identical across different industries gives us pause, and we would be unable to answer the question:

"How does the restaurant industry compare to other companies in different industries where we compete for talent, such as retail?"

Can I kindly ask for an explanation in laymans terms that is both concise and clear enough to explain to the C-Suite as to why we found no difference in the two data cuts?

I have looked into this case, and I can confirm that these figures match what we observe in the economy. We believe there are two main reasons for this congruence. First, the restaurant industry tracks closely with national averages due to the prevalence and scope of jobs in this sector. This is a widespread industry, which represents a large portion of employees relative to other industries. Second, these are lower level occupations, which tend to be more influenced by geography than industry. For example, a shift leader in a fast food restaurant can move to a warehousing or manufacturing role down the street, and may be expected to do so for a relatively small pay increase. These employees are all paid similarly because organizations in different industries are competing for the same local labor.

---

**I came across a benchmark job that has a dramatic decrease in Base 50th. Vice President Sales Effective 1/1/22, the base median was \$207,051 and Effective 1/1/23, the base median was \$165,148. The Vice President Human Resources (84768) has a similarly significant decrease from \$172,179 to \$153,876. Can you help us understand why there would be such a dramatic difference (and decrease) over the period of one year?**

Our Subscriber Services team forwarded along your email below so I can help out. Historically, we listed the Vice President Sales as an alternate title to the Top Sales Officer. This meant that the compensation, job description, and most other data for these roles were the same. After recent analyses of this situation, we determined that these roles are distinct (companies will often have a Top Sales Officer and a VP Sales) and they needed to be separated. This separation was implemented with the July 1, 2022 database. To generate a report today that aligns with the report generated on 01/01/2022 (and earlier), you should use the Top Sales Officer position. Similarly, Top Human Resources Executive can be used in place of the Vice President Human Resources. Apologies for the confusion caused by this data update.

Below is a list of roles separated during the July 1, 2022 data release:

- Vice President Accounting no longer an alternate to Chief Accounting Officer
- Vice President Finance no longer an alternate to Chief Financial Officer
- Vice President Government Affairs no longer an alternate to Top Government Affairs Officer
- Vice President Human Resources no longer an alternate to Top Human Resources Executive
- Vice President Operations no longer an alternate to Chief Operations Officer
- Vice President Sales no longer an alternate to Top Sales Officer

---

**I have one question on the participant list (which this is very helpful). Western Refining and Tesoro merged in probably 2017 or even earlier. Then that combined company merged with Marathon Petroleum in 2018. Can I assume now that those two are really Marathon Petroleum and that is the information you are reporting in ERI?**

**Just want to get clarification as I really like the list of companies that appear to participate but will definitely get questions if I say we are using Western or Tesoro data.**

We do have data for Marathon Petroleum Corp. Their reported area within the survey is Ohio, which is why they don't appear on the Texas list provided. The US participant list for Petroleum Refining and Related Industry is attached for reference.

In terms of why we maintain participant information in the lists which are closed or merged, the short answer is that the data are still relevant and useful when analyzing titles. We apply time series analyses to salary survey data in order to put jobs into context using past and present data points. Past participant data remains an important part of our analyses to determine the growth rates for individual occupations. This analysis is called a longitudinal meta-analysis and references multiple salary surveys, which allows for a larger sample size. The data going into these analyses are updated each quarter with the newest data being 90 days old at the time of publication (to comply with antitrust laws). Of course, rapidly changing markets can change the trajectory of occupations and we account for that as well with a leading indicator analysis. The question we are answering is: How will leading indicators X change the trend of a given occupation with a trajectory of Y? We have found that a primary time series followed by a leading indicator analysis yields results that are quite accurate. We conducted a validation study to measure the accuracy of these methods. This study indicated that this methodology predicted survey responses with an accuracy of 99.1%. The results of that study are attached to this email.

---

**Question: Do we have any excel sheet showing the typical function of each ERI eDOT. I had a subscriber ask for something showing the eDot function rather than the ERI Job description.**

Unfortunately, we don't maintain a list of the eDOT code families by typical function as requested. When ERI released the first Salary Assessor software application over 30 years ago, it was thought that the US Department of Labor's Dictionary of Occupational Titles (DOT) descriptions could greatly assist in creating the format for position descriptions. But when ERI applied its position incorporation policy (that positions common enough to be found in three or more salary surveys be added to the ERI database), we found thousands of positions not covered in the DOT.

In fact, over 80% of the Salary Assessor's jobs were not found among the DOT's 12,000+ titles. By the time ERI had concluded that the DOT was too outdated to be relied upon, we had already adopted the DOT's construct. For over 30 years, ERI has been updating outmoded DOT descriptions and adding new ones, utilizing Internet technology to update all applicable worker characteristic measures.

Today, the DOT has been discontinued by the US government and replaced by a job-family approach, the O\*NET. ERI's enhanced Dictionary of Occupational Titles (eDOT) database provides up-to-date job titles and descriptions and filters them based on keywords, industry, DOT attributes, cross walked job

codes, physical/mental abilities, and job requirements. We do our best to correctly codify our occupations; one good source to use as a reference for the family functions may be the following link from the Department of Labor: <https://www.dol.gov/agencies/oalj/topics/libraries/LIBDOT>

---

**I am an ERI customer with a school district in Salt Lake City Utah. I am fairly new to my position as Human Resources Director and am currently evaluating compensation of our district police officers with compensation rates of police officers in across the Salt Lake Valley. When I search for the position title of Police Officer or any number of creative ways to search for a police officer position, the only thing that pops up is Securityt Officer and Campus Security Officer. Both of these positions so not match the duties/responsibilities of a police officer. I had the following questions:**

- 1. What job title should I use to fine comparisons for a police officer?**
- 2. If this data for police officers does not exist in ERI, why is that the case?**

That is correct, the Campus Safety Officer is more so for a university or high school protection/patrol person, and the Security Officer plans and enforces security measures for establishments – they do not match the duties and responsibilities of a sworn Police Officer. At this time, the ERI team omits salary data for Police and School Resource Officers. Our reasoning is that it is local police or sheriff's agencies hiring and allocating these positions to school districts, and each city's agency would already have their respective salary data available to them.

---

**Why doesn't ERI have data for Firefighters in the system?**

g

---

### **Troubleshooting cache resets**

Please clear your browser cache. Here are instructions on how to clear your browser cache on Windows.

1. Select your browser hit ctrl + shift + delete. This will bring up a window to reset browser data.
2. Set the time to "all time"
3. Select "cached image and files". You may leave "browsing history" and "cookies" unchecked
4. Hit clear data and wait for it to complete
5. Close all windows of that browser entirely.
6. Open the browser and try to log in.

[Clear the Web Browser Cache - Google Chrome | Office of Information Technology \(colorado.edu\)](#)  
[Clear the Web Browser Cache - Safari | Office of Information Technology \(colorado.edu\)](#)

---

**[asking Chief Medical Officer] In this example the "Industry" feature options are replaced by a single "Sector" display in the Salary Assessor Job Report. Does this mean that the data for this job comes only from "8000 - Health Care"?**

You're correct, this occupation only draws data from the Health Care industry. A handful of occupations in the system, such as Public Health Technician, only have meaningful numbers in a single industry and can't be analyzed by different industries. In these situations, the industry selector is replaced with the occupations' sector—in this case, Health Care.

---

**Is there any guidance that can be provided to help determine the appropriate salary level(s) to use for different levels in the organizations? For example, use \$45K for Administrative roles and \$75K for management level roles?**

Below is a guide to use as a reference with average salaries for different job levels.

Chief	\$ 153,672
Top	\$ 151,091
Vice President	\$ 139,357
Director	\$ 113,260
Manager (Professional)	\$ 103,715
Lead (Exempt)	\$ 100,485
Head	\$ 95,406
Supervisor (Professional)	\$ 87,256
Consultant	\$ 68,655
Manager (First Line)	\$ 67,861
Analyst	\$ 63,927
Administrator	\$ 63,903
Supervisor (First Line)	\$ 59,550
Technologist	\$ 59,261
Officer	\$ 59,102
Representative	\$ 57,948
Specialist	\$ 54,596
Coordinator	\$ 48,837
Associate	\$ 48,057
Technician	\$ 48,047
Assistant	\$ 41,599
Lead (NonExempt)	\$ 41,462
Clerk	\$ 38,847

The data presented in this guide came from ERI-collected data.

Each level is taken from the ERI job title, and the salaries are averaged across the group. For example, Chief represents the average salary of all ERI titles that contain "Chief", like Chief Executive Officer or Chief Operating Officer. For the levels noted as Professional or First-Line, that is used to distinguish between the bimodal distribution of Manager and Supervisor salaries based on whether they are in a corporate or field setting. Similarly, Exempt and NonExempt are used to distinguish the bimodal distribution of a Lead role based on FLSA status.

The creation of different structures for various groups of employees is a common approach to managing compensation in organizations. We have a distance learning center with two courses which should help you create and tailor your structures to your specific needs. Please find links to these two courses here:  
<https://www.eriesi.com/dlc/course/salary-structures-and-pay-delivery>  
<https://www.eriesi.com/dlc/course/creating-a-market-competitive-salary-structure>

---

## **Why does report default to United State Average? Why not just United States?**

---

### **Geographical Differentials:**

We don't use geographic differentials. Instead, results are based on local and, where necessary, surrounding data.

All survey data are annualized. If the input to the survey states it is seasonal, the results are annualized to a 12-month value before being included in our analyses.

---

### **General Manager question:**

I don't think GM was every actually available in the system. But GM data are so varied that it would be near impossible to analyze that occupation to the level we can more specialized titles. It may be a good idea to look into other specialty general managers--shoot Adrienne an email asking to consider that for the research list.

---

**Hierarchy/Levelling Question:** It's not clear to me if ERI has an objective and comparative job levelling system at all. When looking at some job titles the relative seniority doesn't seem to be consistent. for example in some areas an Associate is paid more than a Coordinator, in some areas less.

This might end up being a job matching type of solution, but what's at heart here is that we don't pigeonhole occupations into a rigid structure. Rather than fitting jobs into a structure, we analyze the structures based on the incoming data of the occupations themselves. This is why we start by analyzing the data at the individual job level before examining relationships to supervisors and subordinate



positions. In that way, we build a hierarchy around the data rather than a single organizational structure.

---

**Question: HRIS system integration.** I just had a meeting with a group who said they were told we could integrate their *Isolved*, PNI system with our system. I know we are doing this with ADP. Can you let me know if this is possible?

**Answer:** Yes, it should be possible. We can provide a token for you to pull from our API, and we'll need a token from *Isolved* to integrate from them. I'd recommend they reach out to *Isolved* to see if it's possible from the HRM's side. If so, they can connect us with their contact at *Isolved* and we can get the integration in place.

---

**Our competitor, Foxconn, is listed on the companies that submits salary data however they do not have a location in Tennessee. How is that salary data used to help us in Nashville? Do you integrate with UKG/FUSE with higher level modules?**

Participant data are useful for multiple facets of our analyses. We don't expect an individual participant's data to have an effect on the geographic analysis of far-away locations, however the data do inform other analyses used in our research. Participant data help contextualize an occupation, and this idea of using data in context is a strategy we use throughout the Assessors. We examine occupations in the context of time, geography, organizational structure, industry, and other macro/micro economic conditions. Overall, we run roughly 300 separate analyses on the data contained in our databases. Participant data help give us a clear picture of how specific occupations exists within each labor market while accounting for differences which may exist between specific locations and industries.

While we do not have direct integration yet, we can create an API to connect the two systems and there is no additional cost from our side to do this. We are happy to reach out and meet with your UKG and/or FUSE contact(s) to get this connection in place. In the meantime, we offer upload support for building necessary lists for use throughout the ERI platform.

---

**We've noticed a box on ERI, I think it's new, where you can select to include revenue in the analysis of lower level positions. We've tested this out to see the difference and it doesn't seem huge looking at a few positions for \$5M and \$50M. Do you have any information on this check box you can share?**

It is fairly new, the checkbox was added in 2015. When checked, the system applies a regression analysis for the selected revenue in addition to the years of experience analysis for lower level titles. The size of an organization matters for executives, but competition is less size-focused for lower level employees. If an accountant can make more money at a smaller organization down the street, they will make that move. This is borne out in the data.

While the revenue does play some part in the compensation of lower level titles, it's not to the extent of years of experience. This is shown by the small changes in compensation for lower level titles as the

revenue is changed. The relationship is job-specific; some occupations experience more of an effect from revenue than others. However, there are larger increases in compensation for these occupations as years of experience increase. The level of demarcation between the two analysis types tends to be around the Director position. Directors and above are typically analyzed by revenue while managers and below are analyzed by years of experience. A few occupations have shown a bimodal distribution between experience and revenue, and these are in the system with the analysis type appended in the title—i.e. “Project Manager (Experience)” and “Project Manager (Revenue)”. By and large, we have found experience to be a better predictor of compensation for most non-executive jobs.

---

#### Data Discrepancies between years.

Thank you for reaching out to us regarding the salary survey data. We appreciate you sharing your observations and are happy to assist you in understanding the changes in the salary data between 2021 and 2023.

To provide you with a comprehensive explanation, we kindly request that you share both the 2021 and 2023 downloaded survey reports with us. Having the reports will allow us to compare the complete criteria used for the surveys, confirm the data, and pinpoint any differences that may have led to the variations in salary data for the specified jobs.

We understand the urgency of your request and will prioritize this matter to help you respond to your client as soon as possible. Please feel free to respond to this message with the reports at your earliest convenience.

---

#### Certifications and Adjustments

We understand the importance of addressing adjustments for certifications and are happy to provide clarification. Adjustments are dependent on the job title they are associated with, as this combination determines the fundamental or premium nature of the adjustment. Adjustments can be fundamental for some titles and premium for others, and the determination heavily relies on the combination of the job title and adjustment. You are correct that for jobs that have Certified Nursing Assistant certification assigned as fundamental, the market price already includes certification, and there isn’t a way to “pull out” how much the certification contributes to the market price.

When you have a position that needs a certification adjustment, it would be accurate to first match your internal job with the ERI Job that aligns with its core duties, and then adjust for any certification(s). If a certification is not already associated with the job as fundamental or premium, you can add it to the

survey job as a “Custom” adjustment. In these cases, we can provide you with a premium rate range, which should help you pinpoint a rate for the certification that fits your organizational needs. Here are some examples of ranges, which you can apply to jobs that do not already have the certification as fundamental or premium:

1. Certified Nursing Assistant:
  - a. ERI has observed a general range between XX% and XX%.
  - b. Requires completion of state-approved nursing assistant training program and a competency evaluation that includes written and practical components.
2. Licensed Masters Social Worker (LMSW):
  - a. ERI has observed a general range between 8.46% and 11.36%.
  - b. Requires a master’s degree in social work. This license cannot diagnose mental health conditions or perform certain clinical treatments without immediate supervision.
3. Licensed Clinical Social Worker (LCSW):
  - a. ERI has observed a general range between 11.98% and 16.09%.
  - b. Requires a master’s degree in social work and 2,000 hours of supervised clinical post degree experience. Typically performed under a LCSW, psychologist, or psychiatrist.
4. Childhood Development Associate (CDA):
  - a. ERI has observed a general range between 8.36% and 12.27%.
  - b. Requires a high school diploma or equivalent, training hours in early childhood education, practical experience, written examinations, and a positive evaluation by the CDA Council.
5. ServSafe:
  - a. Currently lacking sufficient data to provide a reliable premium range.
  - b. Expected to be fundamental if the job title involves food prep or serving.

For any survey jobs you would like to apply these certifications to, consider entering a Custom rate at or between the given values. We are actively researching how adjustments may vary by industry, with plans for a future release to address this aspect.

We hope that this information is of help and provides direction to your analyses. Feel free to reach out if you have further questions or need additional clarification. We're here to help!

---

#### Compa Ratio and Pay Grades, over/under

Over/Under Grade is calculated by comparing the employee’s base salary and the maximum value for the employee’s grade. The below screenshot shows the pay grade window. The Over/Under flag will be thrown if the employee’s base salary is higher than the maximum or lower than the minimum salary noted in this window.

---

## 10-K and proxy

Both 10-k and proxy statements are publicly-filed reporting documents. 10-K statements are annual reports submitted by publicly traded companies to the SEC, providing a detailed overview of their financial performance, business operations, risks, and governance, including audited financial statements and management analysis. Proxy statements are filed ahead of shareholder meetings and disclose information about the company's directors, governance practices, and related-party transactions. Both filings evaluate a company's performance, governance, and strategy. These statements are used in conjunction with salary survey data to accurately capture labor markets within the Assessors.