

Experience Premium

The option selected by Faculty Senate for ratification at the December 15, 2009 meeting estimates the *experience premium* (EP) for each discipline using an algorithm that utilizes empirical salary data. This approach provides a systematic method that fits an expected salary profile to average discipline salary data and calculates the slope of line that best fits a time-series of data points adjusted to account for the cumulative effects of promotions and post-tenure reviews.

To illustrate the algorithm, consider the graph shown in Figures 1. The red line depicts the anticipated salary profile expected for faculty in Anthropology and consists of discrete salary increases due to promotions and post-tenure reviews plus a constant linear increase that corresponds to the experience premium. The blue diamonds represent the average discipline salary plotted at the midpoint of each rank.

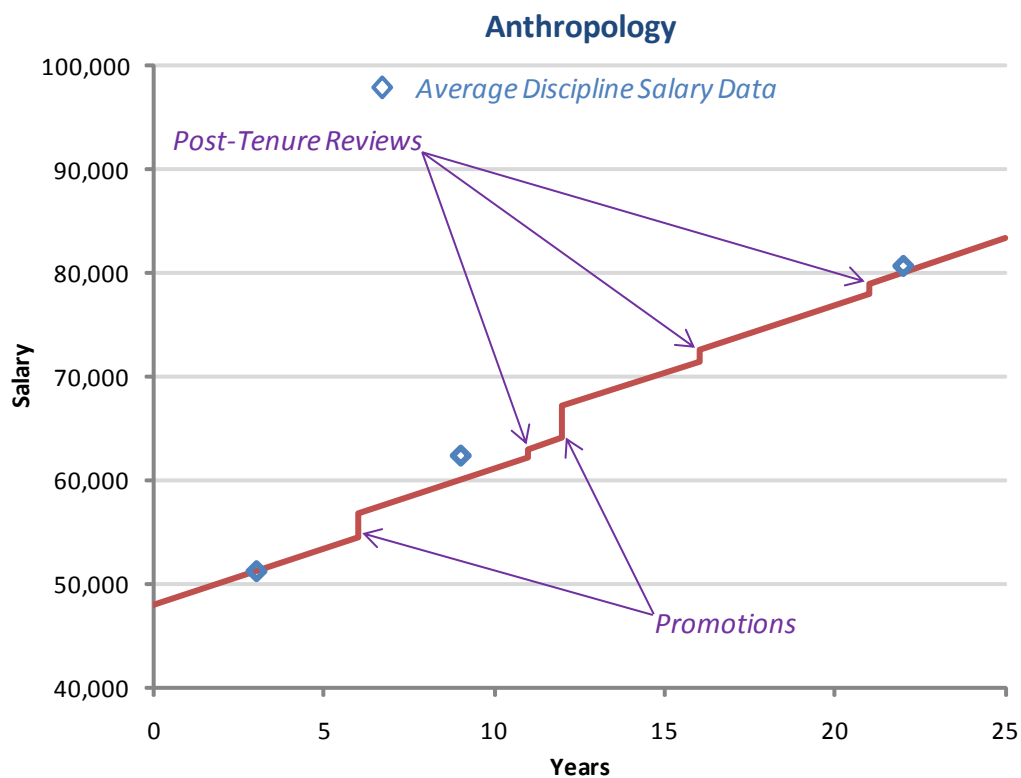


Figure 1: Expected salary profile and average discipline salaries for Anthropology faculty.

Average discipline salaries, and promotion and post-tenure review salary increases can be determined using existing data leaving the experience premium as the only unknown. Average discipline salary by rank originates from empirical data provided by external sources. Promotion and post-tenure review adjustments are defined in the Multiyear Pay Plan and are calculated as a percentage of average salary. Subtracting the cumulative effects of promotion and post-tenure salary increases from the average discipline salaries provides the time series data necessary to

estimate the experience premium. Using linear regression to calculate the slope of the best-fit line provides an estimate for the experience premium as shown in Figure 2.

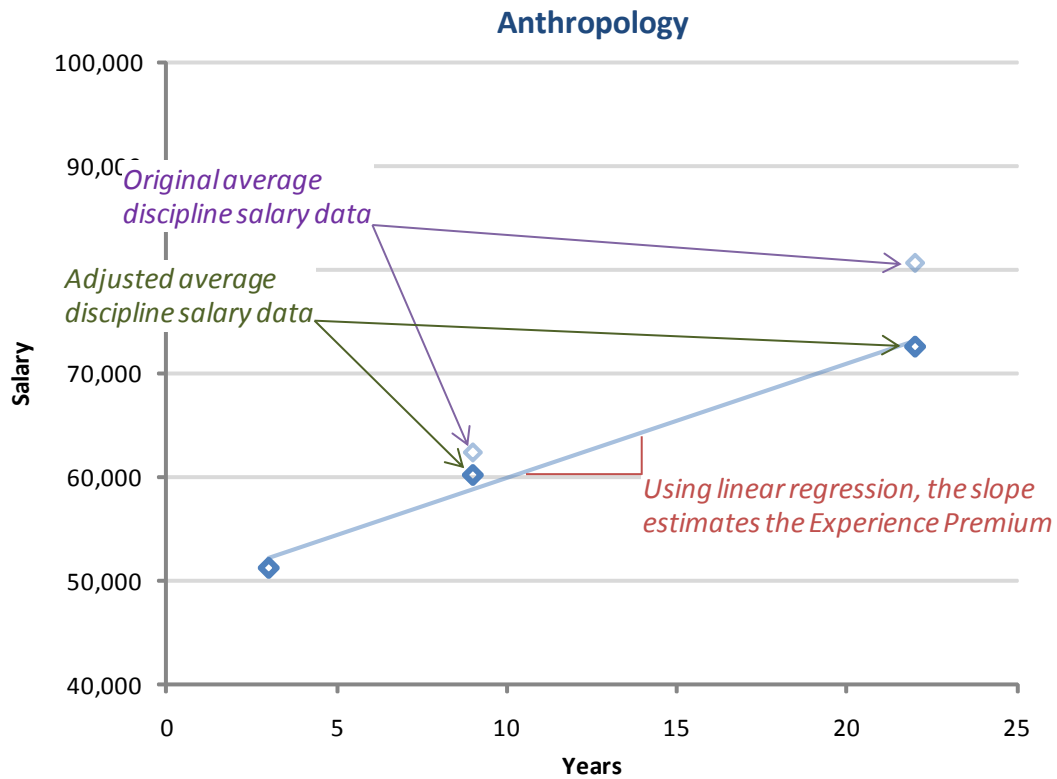


Figure 2: Expected salary profile after subtracting cumulative effects of promotions and post-tenure reviews from average discipline salaries.

Procedure

The procedure is summarized as follows:

1. Determine the years in service midpoint for each rank
2. Determine the *average salary* (AS) for each rank
3. Determine the *average discipline salary* (ADS) for each rank
4. Identify all salary adjustments that occur in the interval between the assistant and associate professor midpoints and subtract from the associate and full professor average discipline salary
5. Identify all salary adjustments that occur in the interval between the associate and full professor midpoints and subtract from the full professor average discipline salary
6. Calculate the adjusted average discipline salary for each rank
7. Estimate the experience premium by calculating the slope of the line that best fits the adjusted average discipline salary data using linear regression

Example

| Description | Adjustment Equation | Assistant Professor | Associate Professor | Professor |
|---|---------------------------|---------------------|---------------------|-----------------|
| <i>Step 1</i> | | | | |
| Years in service midpoint (Year) | | 3 | 9 | 22 |
| <i>Step 2</i> | | | | |
| Average salary | | \$51,983 | \$54,055 | \$67,500 |
| <i>Step 3</i> | | | | |
| Average discipline salary | | \$51,294 | \$62,404 | \$80,642 |
| <i>Step 4</i> | | | | |
| Adjustments between assistant to associate professor midpoints (~Years 3-9) | | | | |
| Promotion to associate professor (~Year 6) | $4.0\% \times AS_{Assoc}$ | | -2,162 | -2,162 |
| <i>Step 5</i> | | | | |
| Adjustments between associate to full professor midpoints (~Years 9-22) | | | | |
| First post-tenure review (~Year 11) | $1.5\% \times AS_{Assoc}$ | | | -811 |
| Promotion to full professor (~Year 12) | $4.5\% \times AS_{Prof}$ | | | -3,038 |
| Second post-tenure review (~Year 16) | $1.5\% \times AS_{Prof}$ | | | -1,013 |
| Second post-tenure review (~Year 21) | $1.5\% \times AS_{Prof}$ | | | -1,013 |
| <i>Step 6</i> | | | | |
| Adjusted average discipline salary | | <u>\$51,294</u> | <u>\$60,242</u> | <u>\$72,606</u> |
| <i>Step 7</i> | | | | |
| Estimated experience premium (\$/Year) | | | | 1,094 |