



Experience Premium Options

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The *experience premium* is a parameter used to estimate the rate at which the *expected salary* of an individual changes with years in service as defined in the Multiyear Pay Plan (page 7). Although CUPA-HR compiles and publishes salary averages by discipline and rank, longitudinal data that corresponds with time-in-rank is unavailable. In light of this problem, the Multiyear Pay Plan Committee deferred issues of implementing the experience premium to Faculty Senate for further discussion.

In the meantime, estimates for the experience premium have been proposed and used to approximate salary compression using the multiyear pay plan model. Values were based on conservative estimates and applied across disciplines without assistance from the underlying physics or empirical data. One of the final decisions to make is whether to choose a specific value or adopt an algorithm that calculates the experience premium. Nonetheless, two options are proposed for consideration and discussed below.

Option 1

Select a value for the *experience premium* (EP) and apply it uniformly across all disciplines.

This option provides the simplest result, but may be most difficult to achieve. The biggest strength of this approach is having one value that is uniformly applied to all disciplines. However, there are a number of challenges that must be considered: First, a single value may not represent all disciplines accurately. Second, the decision to adopt a single value will need to be revisited periodically due to changes in external salary data. Third, decisions to adopt a value may stem from factors other than the physics of the problem.

Option 2

Calculate the *experience premium* (EP) for each discipline using an algorithm that utilizes empirical salary data.

This option provides a systematic method that fits an expected salary profile to average discipline salary data. The biggest drawback to this approach is the inherent complexity of the algorithm making it difficult to discuss and a challenge to understand. However, there are a number of strengths to consider that include: consistency and repeatability, the ability to create salary models that accurately represent individual departments, and the propensity to automate the process. A description of the algorithm is included for reference.

Algorithm Description

The experience premium can be estimated by calculating the slope of line that best fits a time-series of data points that represent the average discipline salary by rank 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.

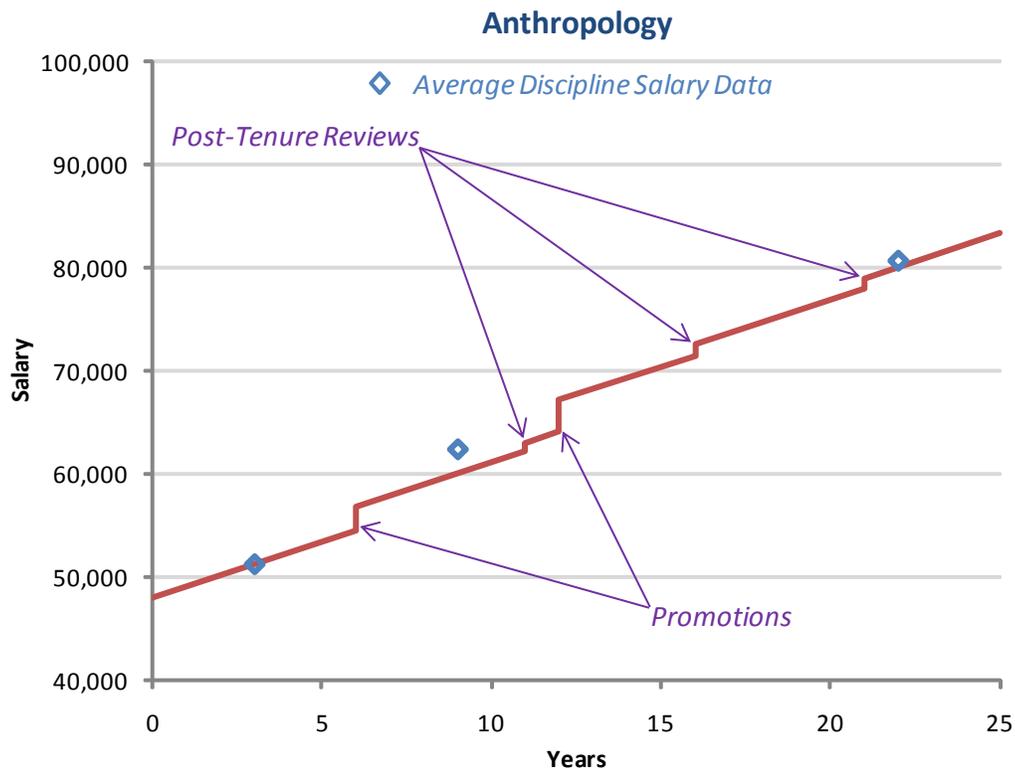


Figure 1: Expected salary profile and average discipline salaries for Anthropology faculty.

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.

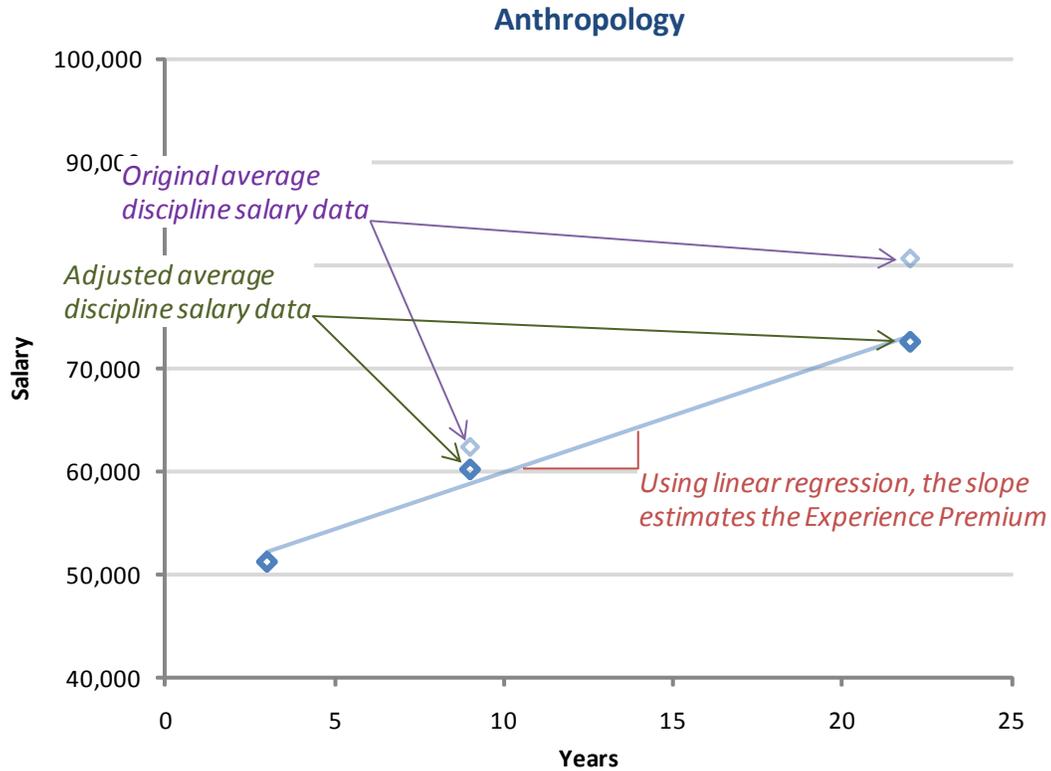


Figure 2: Expected salary profile after subtracting cumulative effects of promotions and post-tenure reviews from average discipline salaries.

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