

Appendix B

Salary Equity Adjustment Formula

I. Definition of inequity

Salary inequities among individuals are disruptive to quality academic programs, causing discord within departments, discontinuity within academic programs through excessive faculty turnover, and converting productive faculty members into those who are, to quote Dr. Warren Martin of the Carnegie Foundation, "chronically aggrieved." This does not refer to differences in salaries that result from variations in productivity and contribution to the University, nor from economic forces in the market. Instead, the term "inequity", as used here, refers to arbitrary and unjustified differences in salary among faculty within a department or academic discipline.

It is the task of the administration to build and maintain as strong a faculty as possible, given the resources of the University. In so doing, inequitable salaries for qualified faculty should be adjusted to minimize the opportunity cost of staying at Arkansas State University. When an individual has the opportunity to go elsewhere at a higher salary, and equal or better working conditions, there is an opportunity cost to staying at the University. If the individual stays, he is progressively more dissatisfied as the opportunity cost increases. When the opportunity cost is great enough, the individual will leave. Whether the individual stays or leaves, it is disruptive and harmful to the academic mission of the University.

Salary inequities must be clearly defined before the problem can be remedied. The committee offers a working definition based on economic, not simply theoretical or altruistic, grounds. The proposed definition is based on two assumptions: (1) This is a comprehensive University that must attempt to maintain and/or strengthen many academic disciplines at one time, and (2) the University has limited resources and must attempt to allocate these resources toward acquiring and retaining faculty in as efficient a manner as possible. For purposes of this recommendation, salary inequities are deemed to be differences in salaries that are unjustified by qualifications, assigned responsibilities, or market forces. "Qualifications" include academic credentials and rank, service to the University and to academe, and meritorious performance. "Market forces" are reflected in prevailing salary levels among the various disciplines for equally qualified faculty within and external to the University.

The following is a procedure for determining the existence and magnitudes of salary inequities. This is the basic methodology, which is directly applicable to individuals on standard 9-month teaching contracts. Individuals with 9- or 12-month contracts and special assigned responsibilities (e.g., department chair, directorates, etc.) will require additional consideration.

II. *A method for determining that inequity exists*

Salary inequities are of two basic types, they may be termed internal and external inequities. Internal inequities are those that exist among individuals within the University. When identifying internal inequities, it must be attempted to determine whether a particular salary is improper, relative to others at the University. This assumes that the pool of funds is fixed, and the problem is to optimize the allocation of that fixed total. On the other hand, external inequities occur when the general level of salaries at the University is below the levels of the universities with which our academic programs are expected to compete. Identification of external inequities does not assume that the pool of funds available for salaries is fixed. Instead, it assumes that more funds must be allocated to the academic area. Those additional funds must come from non-academic areas and/or result from more total funds becoming available to the University.

A. Internal Salary Inequities

Identification of internal salary inequities can be a difficult task because of the large number of variables. Quantification of the magnitudes of the inequities may be even more complex. No system can be expected to determine perfectly the appropriate level of salary for every individual. However, some inequities are so obvious and so extreme as to be readily identifiable and to demand immediate attention and remedy. It is our purpose to develop a procedure for identifying salary inequities and a methodology to approximate the magnitudes of those inequities. Decisions concerning appropriate salary levels and adjustments of salary levels must be based on the best available data. It is the responsibility of departments and colleges to continually analyze their own internal salary structures, and to maintain the most relevant available national and regional data on salary levels in the academic disciplines they represent.

Salary inequities were earlier defined to be "differences in salaries among faculty that are unjustified by qualifications, assigned responsibilities, or market forces." Inequities may occur among faculty within a given department or among faculty across departmental or college boundaries. One obvious approach to identifying an inequity is to compare the salary of the individual in question against colleagues of similar qualifications within that department. That approach, however, has certain inherent difficulties: 1) the department may be quite small, or more than one discipline may be represented in the department, making the data base too small to be reliable; 2) it assumes that the standard of measure (other salaries in the department) is free from salary inequities; and 3) it provides no assistance in properly allocating resources among the various disciplines. For example, suppose that the individual in question is an assistant professor in a 15-person department. There are five faculty members in the same discipline, consisting of two assistants, two associates, and one full professor. It is thought that the other assistant professor might also be the victim of an inequity. This

rather typical situation offers no valid way to determine whether a salary inequity exists, and how great that inequity might be.

The committee proposes the following procedure for determining the existence and approximate magnitudes of salary inequities. The methodology for quantifying an inequity is relatively simple to apply and internally consistent. It is directly applicable to the vast majority of faculty, those with normal assigned responsibilities in the areas of teaching, research and service. Atypical assignments may require a modification of this method or another approach altogether.

B. Procedure

The procedure for identifying salary inequities is similar to that for promotion or tenure. An alleged salary inequity is first considered by the departmental Promotion, Retention, and Tenure (PRT) Committee. The process may be initiated by the affected individual, by the chair of the department, or by the PRT Committee itself. If there is no PRT Committee in a given department, the first step will be the same as for decisions of promotion and tenure. The committee will forward its recommendation to the chair. The chair will make an independent evaluation and recommendation. The chair then will forward both recommendations to the dean. The dean, in turn, will make an independent evaluation and recommendation and forward all three recommendations to the Executive Vice Chancellor and Provost.

Identification of a salary inequity implies that an estimate has been made of the magnitude of that inequity. The following is the methodology to be used to document that an inequity exists, and to quantify the size of the salary adjustment necessary to resolve that inequity. It should be noted that adjustments of salary inequities result from recommendations by a committee of peers, the chair, and the dean, and not from a set of computations. Thus, the following methodology alone does not prove that an inequity exists or does not exist. Rather, the methodology is documentation for the recommendations of those parties.

C. Methodology for Identifying the Size of a Salary Inequity

The methodology begins with a common base and then adjusts for individual qualifications and market forces. The precise mathematical procedure may vary slightly, because of data availability. The basic model is:

$$\text{Salary inequity} = \text{Computed salary} - \text{Actual salary}$$

Computed Salary Computed salary is found by beginning with the mean, or average, salary for a given rank at Arkansas State University. Thus, we begin with a figure that is partially adjusted for qualifications, i.e., for rank. This starting point results in a database that is large enough to allow an average to have

reliability. That base figure is then adjusted by a Qualification Index and by a Discipline Index. For faculty on normal 9-month teaching contracts, no adjustment is made for assigned responsibilities. Computed Salary is found by:

Computed Salary = Mean Arkansas State University Salary for Rank x
Qualifications Index x Discipline Index

1. Qualifications Index. The Qualifications Index is the product of a merit performance component and a time-in-rank component. An index of 1.00 is average, and has no impact on Computed Salary.

The "merit" component of the index is found by computing the average percentage pay increase of the individual over the past five years, then subtracting from that the average percentage pay increase for the department for the past five years, and then multiplying by five (the number of years in the calculation) and adding one. For example, suppose an individual averaged a 4.2% pay increase over the past five years, while the department has averaged 3.0%. The merit portion of the index is calculated to be $5(.042 - .030) + 1 = 1.060$. If there are fewer than five years of history at Arkansas State University for that individual, then the calculation is made for that smaller number of years. It is important that special salary adjustments for the individual or within the department, such as those resulting from past promotions, be removed before averages are computed. If any of the recommending parties believes that there are extenuating circumstances that invalidate this method of calculating the merit component, then comparisons of actual merit evaluations within the department maybe used.

The "time-in-rank" portion of the index is calculated as 1 plus the factor from the following table:

Number of Contracts

Present Rank	Instructor	Assistant Professor	Associate Professor	Professor
1	2%	2%	3%	4%
2	-1%	-1%	2%	3%
3	0	0	-1%	2%
4	+1%	+1%	0	-1%
5	+2%	+2%	+1%	0
6	+2%	+2%	+2%	+1%
7	+2%	+2%	+3%	+2%
8	+2%	+2%	+3%	+3%
9	+2%	+2%	+3%	+4%

If the individual above were in his second contract as an assistant professor, the time-in-rank component of the index would be calculated as: $1 + (-.01) = .99$. The Qualifications Index (Q) is then computed by multiplying the merit and

time-in-rank components of the index. The Qualifications Index for the individual in our example would be:

$$Q = \text{merit} \times \text{time-in-rank} = 1.06 (0.99) = 1.0494$$

2. Discipline Index. The Discipline Index is conceptually quite simple. It is calculated by dividing the national average faculty salary for a given rank and discipline by the national average faculty salary for that rank. The use of national averages does not bias the estimates upward, because they are used only to find relative differences, not to determine salary levels. They are used because the data is more readily available. Continuing the example above, if the national average for all faculty at the assistant professor rank is \$29,000, while the average salary at the same rank for the discipline of the faculty member being considered is \$31,900, then the Discipline Index (D) for that individual would be calculated to be:

$$D = \$31,900 / \$29,000 = 1.10$$

In practice, there are complications created by data availability and comparability. It is important to use data for which average salary across all disciplines is known to be comparable to the average salary by discipline. These data are available from at least two sources: (1) "National Faculty Salary Survey by Discipline and Rank," American Association of State Colleges and Universities, published annually; and (2) "Faculty Salary Survey by Discipline of Institutions Belonging to the National Association of State Universities and Land-Grant Colleges," Office of Institutional Research, Oklahoma State University, published annually. The AAUP also publishes in Academe an annual salary survey, by rank and classification, but not by discipline. However, the 1987-88 report in Academe references the Oklahoma State University study.

The disciplines presented in the above studies may, in some cases, be quite broadly defined. When more definition is needed to determine an equitable distribution of salaries within a broader field, such data may be available from an accrediting agency or other organization that specializes in that general discipline. These data need not be directly comparable to the broader data, but comparable only within the broader discipline. For example, suppose we are considering an Assistant Professor in Petroleum Engineering. If we first find that Engineering is 20% higher than average at the rank of assistant professor, that information alone would generate an index of 1.20. The engineering program at Arkansas State University is accredited by ABET, and should be compared, if possible, with other programs accredited by ABET. If we then find from the secondary source that the mean salary for petroleum engineers at ABET accredited institutions is 8.3% below average for all engineering fields at all universities, then a Discipline Index is computed to be: $1.20 \times 0.917 = 1.10$. In general, the best available data should be used, data that most nearly describe the situations being evaluated.

To conclude the example used throughout this section, suppose that the individual being considered is on a 9-month teaching contract at a salary (S) of \$26,000, while the current mean salary (M) for all assistant professors is \$27,000. Recall that this individual had a Qualifications Index (Q) of 1.0494 and a Discipline Index (D) of 1.10. The Computed Salary (C) for this individual would be:

$$C = M \times Q \times D = \$27,000 \times 1.0494 \times 1.10 = \$31,167$$

Salary inequity (I) is computed to be:

$$I = C - S = \$31,167 - \$26,000 = \$5,167$$

It is the responsibility of academics to establish the level at which the University can and should compete, and to select a source of data as a standard for the Discipline Index that best describes that level. The standard might be either of the sources mentioned above, or a composite of the two. Selection of the standard must be done with the approval of the Academic Deans Council. The chief academic officer (Executive Vice Chancellor and Provost) will provide the colleges and departments with current mean salaries at Arkansas State University for each rank and the factors to be applied to each broad discipline. This can be done early each fall, as the studies mentioned above are published in the late spring of each year.

It is the responsibility of the individual departments and colleges to monitor their internal salary structures and to recommend adjustments when significant salary inequities are found. Each college (or independent department) will determine whether additional definition of disciplines is necessary, and will provide the data for making those secondary adjustments to the Discipline Index. Computations for determining possible salary inequities will be done at the departmental level. Data to be used include:

- (1) Data provided by the Executive Vice Chancellor and Provost -- Arkansas State University mean salary by rank, mean salary nationally by rank, mean salary nationally by rank by major discipline.
- (2) Data provided by college (or independent department) -- mean salary nationally by rank by sub-discipline, if necessary.
- (3) Data provided by department -- salary of individual, average pay increases of individual for past 5 years, average pay increases of department for past 5 years, number of contracts of individual at present rank, individual merit evaluations within department for past five years, if necessary.

III. *How to remedy the inequities once they have been identified*

The Finance Committee recommends that known internal salary inequity problems should be corrected by being budgeted as a fixed expense for the

following year. Once the internal inequities have been identified, some decision must be made about what constitutes an inequity that needs immediate attention. The committee believes that the University might be able to work out a method to solve the inequity over a period of time, if necessary. For example, if the inequity was a very large amount, the University and the individual might agree to solve the inequity over a three-year period. This would indicate good faith on the part of the University and would help spread costs over a period of time. The solution of internal inequities should not be considered to have an effect on the normal cost of living pay increases or on the merit pay increases and the faculty should not be penalized as a whole by the administration in its attempt to solve salary problems. It is for this reason that budgeting the internal inequities as a fixed expense seems to be the best solution.

IV. External inequities

As was stated earlier in this report, external inequities assume an increase in the amount of funds for the salary pool. Arkansas State University faculty ranked 4th in faculty salaries among state four-year public institutions in Arkansas, as reported in the March-April 1987 issue of Academe.

V. Summation

The Faculty Senate Finance Committee has answered the charge in the following ways:

1. Defined what is meant by a salary inequity.
2. Arrived at a satisfactory method for determining that an inequity exists. This is accomplished by using the following basic model:

$$\text{Salary inequity} = \text{Computed salary} - \text{Actual salary}$$

$$\text{Computed salary} = \text{Mean Salary for Rank} \times \text{Qualifications Index} \times \text{Discipline Index}$$

The Qualifications Index is a product of a merit performance component and a time-in-rank component computed as indicated above. However, if any of the parties involved in the salary inequity question for an individual believes that there are extenuating circumstances that invalidate this method of calculating the merit component, then comparisons of actual merit evaluations within the department may be used.

The Discipline Index uses data compiled nationally that give relative differences that can be used for comparison on campus and do not bias the salary estimates upward. Other data that are more specific to the discipline may be available within departments and can be used to compute the discipline index.