USING AN EQUITY/PERFORMANCE MATRIX TO ADDRESS SALARY COMPRESSION/INVERSION AND PERFORMANCE PAY ISSUES

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Pay compression and inversion are significant problems for many organizations and are often severe in schools of business in particular. At the same time, there is more insistence on showing accountability and paying employees based on performance. The authors explain and show a detailed example of how to use a Compensation Equity/ Performance Matrix (CEPM) approach to rationally and fairly address both of these issues simultaneously. The context is discussed along with the use and limitations of this approach. The CEPM approach can be used by any type of organization facing these problems.

Keywords: compensation, performance pay, salary compression, pay equity, compensation matrix

SALARY COMPRESSION AND INVERSION

This article explores the issues of salary compression and inversion and describes a compensation tool that can help managers and administrators address these difficult compensation challenges in a systematic and strategic fashion. We first briefly explore some of the literature on pay compression and inversion. We then focus on university faculty within colleges and schools of business as our example. We have chosen to look at business faculty because, relative to other occupational groups, and even in comparison to other university faculty groups, salary compression/inversion among business faculty appears to be a severe and almost universal phenomenon. We can give a concrete example of this issue and our approach for this group. Moreover, given recent budgetary problems common to most institutions of higher learning, salary compression/inversion issues are likely to remain particularly difficult to resolve. This is particularly true in a climate in which political and economic concerns increasingly demand accountability and demonstrable performance among all employees, while issues of pay equity often enter only for new faculty being hired at labor market rates. If internal pay equity is largely being ignored, the hiring of new faculty only compounds the equity problem and can lead to a variety of negative organizational outcomes. These dynamics are common in many jobs and organizations, not unique to higher education or business schools. In today's economic climate, the balancing of performance-based raises and pay equity will be especially important when any money becomes available to distribute to employees. The approach we are describing here can be universally applicable to any organization.

The authors take the position that organizations should try to deal effectively and systematically with both individual performance and pay equity (compression and inversion) in the development of pay structures, the assignment of individual pay increases, and in the manner in which individuals progress through pay ranges. We present a compensation tool we have labeled the Compensation Equity/Performance Matrix (CEPM) as an approach to distributing individual pay increases. The CEPM approach allows organizations to balance salary compression/ inversion and performance-based pay issues in a manner that is flexible and consistent with organizational strategic concerns.

The problems of salary compression and inversion have been among the most ubiquitous and irreconcilable compensation issues facing organizations. Both pay compression and inversion are problems that threaten the

integrity of an organization's pay structure. Pay compression occurs when pay differentials between more senior, higher-level, or more highly skilled employees and newly hired, lower-level, or less skilled employees become small. The more severe case of pay inversion, typically occurs when newly hired employees are brought into an organization at salary levels greater than more senior, skilled, or experienced employees at the same or higher job level.

That the pay compression/inversion problem is tenaciously difficult to resolve can be demonstrated by comparing survey results from the 1970s and 1980s to results of current surveys of human resource management professionals and compensation analysts. One 1978 survey of 845 firms found that 90 percent had salary compression problems (American Compensation Association, 1978). A subsequent American Management Association survey of 613 firms reported that two-thirds had pay compression issues (Steele, 1982). Twenty-five years later, these concerns remain largely unabated. For example, a 2005 IOMA survey reported that salary compression continues to be the most pressing concern among the 500 HR professionals surveyed (IOMA, 2005). A similar survey from 2008 reported that salary compression remained among the top three compensation problems among companies in all sectors and was the top concern in the public sector (IOMA, 2008). The economic climate of the last few years has not provided conditions conducive to helping solve equity issues.

Why are issues of pay compression and inversion considered to be of such concern? This issue has been widely addressed in the management literature. The overriding problem is that pay compression and inversion are a threat to the organization's competitive advantage, substantively through the mechanism of dysfunctional voluntary turnover (Martocchio, 2006) and its concomitant costs (McAfee & Glassman, 2005). Relatedly, pay compression and inversion have impacts on pay equity, job satisfaction, and organizational commitment (Ladika, 2005; McNatt, Glassman, & McAfee, 2007). Others have even argued that pay inversion is an unethical business practice (Glassman & McAfee, 2005).

Most of the writing on pay compression in the practitioner press is prescriptive. It assumes that pay compression and inversion are undesirable, and the focus is on various tools to address the problem (see, for example, Bergmann & Hills, 1987). The academic literature on pay differentials, however, is more equivocal in its conclusions regarding pay compression. Pfeffer and Langton (1993) describe the theoretical dilemma regarding pay dispersion, noting that many models, including expectancy theory, argue for the motivational impact of pay dispersion when pay is contingent on performance, while contrasting models argue that pay compression is necessary to promote good social relations in the workplace. Similarly, Shaw, Gupta, and Delery (2002) note that pay dispersion, in and of itself, is neither good nor bad, but must be understood within its strategic context. There are complex relationships that exist among various pay for performance mechanisms, work and worker characteristics, pay structures, and various organizational outcomes that require organizations to evaluate pay compression in light of its strategic context.

The research on pay dispersion (pay differentials, pay compression and inversion) seems to suggest that dealing with pay structures is much more complicated than simply eliminating pay compression. The impact of pay compression on organizational outcomes depends on the organization's compensation strategy within a context defined by the existence and nature of incentive or pay for performance mechanisms, the degree of interdependence among employees, the importance of cooperative working relationships, and the relative levels of vertical (pay differentials across job levels) versus horizontal (differentials within a job level) pay compression. The notion is that, in some circumstances, high pay dispersion with substantial pay differentials both within and across job levels is appropriate, particularly to recognize outstanding performance. In other situations, low dispersion or a high level of pay compression is desirable where employee collegiality and cooperation is important and measures of individual performance are imperfect or differences in pay can be attributed to random or illegitimate factors.

The Salary Compression/Inversion Problem Among University Business Faculty

The problems of salary compression and, in some instances, salary inversion, have been among the most persistent and difficult compensation issues facing colleges and schools of business for decades. The typical pay compression problem in academia occurs with shrinking pay differentials among ranks. In many institutions, the progressive deterioration of pay differentials over several years has exacerbated pay compression to the extent that many business faculty are experiencing the more severe case of pay inversion, occurring when newly hired assistant professors are hired at pay levels greater than current assistant, associate, or even full professors in the same discipline.

Pay compression and inversion are not new problems. More than two decades ago, the Association to Advance Collegiate Schools of Business (AACSB) reported that salary compression was a "worsening problem" which was confirmed then and continues to be now. AACSB historical survey data from 1982 to 1986 showed that the average salary of new assistant professors was 4% more than current assistants, and almost as much as the average salary for associate professors (AACSB Annual Salary Survey, 1986). The pay differential between assistant and associate professors was reduced by more than 55% between the mid-1970s and mid-1980s (Gomez-Mejia & Balkin, 1987).

By 2008, the compression/inversion problem had only become more severe. In its survey of thousands of business faculty in public accredited programs, the AACSB data showed that the pay differential between full and associate professors was 13%, but the differential between associates and assistants was only 2%. More dramatic pay compression and inversion figures emerge when data on new hires is examined. In 2007, newly hired assistant professors were coming in at 2% **more** than current assistants and even 1% more than current associate professors. In 2007, new doctorates were hired at average rates 10% **higher** than current assistants, 8% higher than current associates, and only about 7% less than current full professors (AACSB US Salary Survey Report, 2008). The above represented the average situation. For specific institutions, the problem can be even more severe. Despite the concern of administrators and faculty alike, the data clearly shows that little has been done over the last 20 years to address the salary compression/inversion problem.

Why Does Salary Compression/Inversion Exist?

While salary compression is a broad concern across occupations including engineering, law, and others, there are some specific reasons that explain why schools and colleges of business are particularly subject to salary compression and inversion. Graduation data from the US Census Bureau (2008) suggests that while business doctorates granted have been increasing at a rate faster than growth among undergraduate enrollments, they may not have grown at a pace sufficient to keep up with exploding graduate school admissions. Undergraduate degrees granted in business remain at a fairly stable 20-21% of total undergraduate degrees, while Master's degrees in business have increased from 18.5% of all Master's degrees in 1980 to about 25% of all Master's degrees in 2005. During this 25 year period, business doctorates have consistently remained at 2.4-2.8% of all doctoral degrees (U.S. Census Bureau, 2008).

While business doctorates granted have seemed to keep pace with overall growth in business enrollments, there does seem to be a labor market mismatch within doctoral programs. If one views doctoral programs as the training ground for tomorrow's academicians, the fact that 22% of all students are business majors, but fewer than 3% of all doctoral degrees granted are in business, then there does seem to be an inherent mismatch. When this is coupled with alternative job opportunities for business doctorates outside of academia that other disciplines often lack, an excess of demand relative to supply for business doctorates relative to many other academic disciplines seems to account for much of the salary compression/inversion that exists within business fields.

Another factor contributing to salary compression/inversion for business faculty has been the presence of pay structures with highly developed internal labor markets. Highly developed internal labor markets tend to limit organizational entry to certain jobs. External or market forces are the primary determinant of pay levels for these entry jobs. However, organizational forces that govern internal movement, budgetary constraints, and pay for performance plans, limit the impact of market conditions on non-entry jobs (Milkovich & Newman, 2008). Gomez-Mejia and Balkin (1987) point out that rigid internal labor markets dominate in the academic environment and that 80% of all hiring is done at the assistant professor level. Thus, assistant professor salaries tend to be market-competitive, while pay differentials for internal movement are determined by tradition and budgetary constraints.

THE COMPENSATION EQUITY/PERFORMANCE MATRIX (CEPM)

A compensation matrix approach is typically based on the traditional compensation analyst tool called the merit grid. The merit grid approach to allocating individual pay within organizations using merit pay systems is widely used and is described in most textbooks on compensation (see Milkovich & Newman, 2008), but detailed discussion regarding its application, its advantages, and its limits, are not common in the literature. The application of the CEPM is similar in operation to the traditional merit grid. We have chosen to re-label this tool to eliminate the emotionally-charged and often negative connotations associated with merit pay systems, and to re-focus the technique as a strategic

compensation tool. The focus is less on establishing merit guidelines than it is to balance pay for performance with concerns over pay compression. This article expands the usual mechanical description of the application of the merit grid tool to the consideration of multiple factors that impact its effectiveness. One additional distinction between this CEPM and a traditional merit grid is that pay range position in the matrix is determined by compa-ratios relative to market rather than by pay range position. This difference is important and is discussed below.

The CEPM is an approach to the determination of pay increases that bases an individual faculty member's annual pay adjustment on a combination of performance and market equity. Specifically, the Compensation Matrix bases pay decisions on three variables:

1. the overall salary increase budget determined by the institution;

2. each faculty member's salary relative to market pay by rank and specific discipline as determined by salary survey results; and

3. individual performance evaluation results.

The Salary Budget

The most important determinant of the individual pay increase is, of course, the salary budget. The CEPM makes two major critical assumptions about the salary budget:

1. The ability to address both pay for performance and pay compression-related equity issues within the same system depends on securing a salary increase budget that exceeds the overall rate of growth in market wages and salaries.

2. Ideally, all employees who are performing at the expected level or above should get a pay increase at least equivalent to overall market wage growth.

Regarding the first assumption, no compensation system can truly address pay for performance and salary compression/inversion issues simultaneously unless the institution makes a commitment to a salary increase budget that exceeds the growth in the overall wage and salary index. Pay for performance and internal pay equity issues can be marginally addressed with overall pay increase budgets that do not exceed overall market wage growth, but it is impossible to address both pay for performance and market (external) equity issues unless the organization secures a sufficient pay increase budget.

The second assumption is based on standards of simple fairness: any employee who is performing at an acceptable level should be able to maintain his or her standard of living by receiving a pay increase at least equivalent to overall market wage growth. There is considerable disagreement, however, on how this standard is operationally applied. Many institutions use consumer price comparisons (CPI data) within a specific geographical area to index pay, while others use the less volatile BLS wage and salary index (Bureau of Labor Statistics, 2008).

In the CEPM example developed here, the assumption is that the organization's annual pay increase budget is 4.00% in a year in which overall wage and salary growth is about 2.75%. The objective is to design a system of pay increases that do not exceed the budgeted amount, yet provide all employees who have performed at least at an expected level (Expected Merit) a pay increase of at least 3% to keep them whole with wage growth in the external market. If the available salary budget is less than the annual market wage growth, the organization can either give it all as an across-the-board increase, or the CEPM could still be used as a way of dividing up the restricted resources while ignoring assumption number two above.

Pay Range Position and the Impact of Relevant Labor Markets

The traditional merit grid approach assumes that the organization's pay system incorporates a fairly traditional set of pay grades with associated pay ranges and assumes that the organization's employees are fairly uniformly distributed throughout the pay ranges. For organizations with severe problems with market (external) equity, this may not be a valid assumption. An advantage of the CEPM is that this assumption is not important because it does not use pre-established pay ranges. The CEPM determines the equity component of the pay increase based on each individual faculty member's "compa-ratio" relative to market pay. The compa-ratio is simply defined as an individual faculty

member's actual salary divided by a market measure (typically market median or mean) based on his or her rank and discipline. A compa-ratio of 1.00 means that the faculty member is "at market," while a higher (lower) ratio indicates that he or she is above (below) market for his or her rank and discipline.

Determining one's actual compa-ratio depends very directly on establishing the "relevant labor market" for purposes of a salary survey. The relevant labor market can be defined in several ways, including (1) the geographical areas in which an institution normally recruits for a set of specific jobs; (2) the institution's product market competitors defined as those organizations that offer similar products or services; and/or (3) the institution's labor market competitors defined as those organizations with whom the institution competes for employees. The choice of relevant market is important because pay setting is based on surveys taken of companies within the relevant labor market. Since pay varies systematically by several variables, including organizational size, geography, philosophy, and other factors, the choice of the relevant market and survey sample has a very significant impact on pay level. Therefore, the choice of relevant labor market for pay-setting purposes should be based on sound business-related reasons to avoid playing politics with pay and to arrive at accurate and meaningful comparisons that can logically be used to establish external pay equity.

In establishing relevant markets for pay-setting purposes, the survey choice depends on several factors. For example, organizations experiencing a great deal of turnover and problems in attracting applicants will usually focus more heavily on labor market competitors. Organizations with heavy cost pressures focus more on product market competition so that labor costs can be controlled. For many jobs the labor market will vary by job level with lower-level jobs surveyed in a local labor market and higher-level jobs surveyed at regional or national levels. For university faculty the situation is somewhat unique. For virtually all educational fields, the geographical labor market is national or international. Additionally, and unlike the situation in most industries, the labor market competitors faced by a university are also its product market competitors since the great majority of PhDs are employed by universities. For university faculty then, the logical salary comparison is, with a few exceptions, salary data from other universities. The problem, then, is, from the set of all universities which ones should be selected for pay-setting purposes? The answer to that question is that you match the set of universities surveyed to those you compete with for faculty. Typically you would select institutions that match in terms of size, level of accreditation, degree offerings, mission, and other similar variables that determine pay.

One important rule is this: there is nothing to suggest that all programs within a university should be compared to the same set of schools for pay-setting purposes. Organizations compete in several different relevant labor markets and, therefore, rely on salary data that varies both geographically and by industry for different occupational groups and job families. Similar to other organizations, one would not expect a university to use the same pay data set for setting pay ranges for clerical and administrative support employees as it would use for establishing pay for professional and administrative positions. Most universities will actually use several different salary data sets for staff.

Similarly, it is reasonable to assume that a university would use salary data from different sources to set salary levels for academic positions across different disciplines. The selection of a data set for pay comparison purposes should be a function of the level of the program, its size and complexity, the type of degrees it offers, its criticality to the university's mission, and other practical, strategic, and mission-consistent variables   .

Is the choice of relevant labor market really that important? Absolutely. The salary data base decision has a major impact on salary levels. Two of the main data bases available are from the College and University Personnel Association (CUPA) and The Association to Advance Collegiate Schools of Business (AACSB). Differences in salary averages for various ranks and disciplines using the CUPA and AACSB data bases can range from 7% to 31% apart even when sampling same institutional type, with the less selective CUPA data base being lower as evidenced in Table 1, which compares the different compa-ratios.

The labor market as defined by the schools in the CUPA National Faculty Salary Survey is probably less appropriate for business faculty pay-setting purposes than the more specific AACSB data base because the latter provides better job matches for business disciplines. However, the selection of institutions within the AACSB data base (as well as CUPA) represents choices among different "slices" of data based on geography, public or private support, type of degrees granted, areas of specialization, and other variables.

Table 1

Establishing Compa-Ratios

Area	Rank	FY07 Salary	AACSB Data Median $000	N	CUPA Data Median $000	N	Compa Ratios AACSB	CUPA	Merit Rating
ACCT	asst	88,977	94.8	625	75,905	274	0.939	1.172	4
ACCT	assoc	95,566	92.5	777	80,748	369	1.033	1.184	3
ACCT	assoc	110,000	92.5	777	80,748	369	1.189	1.362	4
ACCT	assoc	81,704	92.5	777	80,748	369	0.883	1.012	5
ACCT	assoc	81,608	92.5	777	80,748	369	0.882	1.011	3
ACCT	full	92,500	104.0	932	90,182	425	0.889	1.026	4
ACCT	full	101,962	104.0	932	90,182	425	0.980	1.131	3
ACCT	full	92,068	104.0	932	90,182	425	0.885	1.021	3
ACCT	full	89,024	104.0	932	90,182	425	0.856	0.987	5
ACCT	full	90,004	104.0	932	90,182	425	0.865	0.998	4
CIS	asst	92,020	92.0	602	74,896	97	1.000	1.229	4
CIS	asst	92,020	92.0	602	74,896	97	1.000	1.229	3
CIS	assoc	93,087	91.6	488	83,171	75	1.016	1.119	5
CIS	assoc	83,024	91.6	488	83,171	75	0.906	0.998	3
CIS	full	96,488	103.0	447	89,906	80	0.937	1.073	4
CIS	full	90,010	103.0	447	89,906	80	0.874	1.001	5
CIS	full	84,312	103.0	447	89,906	80	0.819	0.938	3
CIS	full	80,389	103.0	447	89,906	80	0.780	0.894	4
CIS	full	91,822	103.0	447	89,906	80	0.891	1.021	3
CIS	full	90,731	103.0	447	89,906	80	0.881	1.009	4

Note. AACSB data from all public accredited institutions. CUPA data from all public masters institutions.

Developing Compa-Ratios for the Compensation Matrix

Table 1 presents a sample of actual historical salary data and merit ratings from the Accounting and CIS departments within the targeted university to demonstrate how compa-ratios were established. The rank and discipline for each faculty member were used to match each to relevant labor market comparison data for both AACSB and CUPA data bases using median salary as the appropriate market measure. The full chart included all 78 faculty members from all departments. Median salary is arguably the best market measure in this circumstance. Although mean and median salary values are fairly similar for assistant and associate professors, salary distributions for full professors are skewed, with the mean salary being considerably greater than the median because of the influence of very large salaries attributed to a rather small number of full professors holding endowed chairs, large grants, etc.

In both data sets, compa-ratios were established by dividing each faculty member's actual salary by the market median. Both data sets were used to provide examples of how different compa-ratios can be when using different relevant market data. While the data in Table 1 are more constrained, compa-ratios for the AACSB data for the full faculty ranged from .573 to 1.189, with a median compa-ratio of about .87, while the CUPA data base produced a range from .71 to 1.362, with a median of about 1.00. The choice of which data base to use would have an impact on individual salary determination and would have significant political and administrative effects. University administrators could argue that business faculty are paid equitably with the market because the average compa-ratio is about 1.00 using the CUPA data. However, business deans would argue that the AACSB data base is the better relevant labor market comparison and it produces an average compa-ratio of just over .86, suggesting that the average faculty member

is 14% below market averages. The remainder of the CEPM example uses CUPA data for public accredited schools. Faculty were assigned to pay quartiles using compa-ratios as described below.

Pay Ranges, Pay Quartiles, and Compa-Ratios

The normal application of a merit grid requires that pay ranges have to be specified and that employees are assigned to one of four pay quartiles based on their position in the pay range. In many organizations this is not an issue because pay ranges have been previously established. In a system for classified employees, for example, pay ranges are simply defined as the distance between the minimum and maximum rates for the pay grade. Pay quartiles are established simply by dividing the pay range into four equal increments.

The CEPM approach isn't limited to the use of pay quartiles. Pay quintiles or other metrics can be used. If an organization is developing a system for unclassified staff or professional, managerial, or administrative employees, no pay ranges may exist. In that case, pay ranges position can be determined based on current pay levels and labor market salary survey data. Pay ranges for jobs could be established based on salary statistics using pay distribution data and assigning individuals to pay quartiles based on their percentile relative to market. For example:

Q4   pay at the 75th percentile and above

Q3   pay at the 50th to 74th percentile

Q2   pay at the 25th to 49th percentile

Q1   pay below the 25th percentile

Our application of the Compensation Matrix develops pay quartile assignments based on compa-ratio data. In our example, the compa-ratio is the ratio of faculty members current salaries to the market median. These processes allow some flexibility for the organization as it establishes pay range distributions. Using the CUPA data in Table 2 as an example, administrators could establish pay quartiles "at market" such that:

Q4   compa-ratio above 1.10 relative to market median

Q3   compa-ratio from 1.00 to 1.09 relative to market median

Q2   compa-ratio from .95 to .99 relative to market median

Q1   compa-ratio below .95 relative to market median

This decision rule produces an almost uniform distribution with roughly the same number of faculty in each pay quartile, and 50 percent of the individuals in each of the top two (quartiles 3 and 4) and bottom two (quartiles 1 and 2) pay quartiles. The distributions within a pay range have a substantial impact on the pay increase percentages in the matrix. In a compensation matrix, all else being equal, the highest percentage pay increases are given to employees at the bottom of the pay range, or, in our example, those with the lowest compa-ratios. When an organization defines pay ranges to be at-market, but already has substantial problems with market (external) equity, a substantially greater proportion of employees will be in the lower pay quartiles. This is exactly the type of problem the target university will have if it decides to use AACSB rather than CUPA as market data. Using the AACSB data would result in only about thirteen percent of faculty in the top two pay quartiles if the middle of the pay range was defined by a compa-ratio of 1.00.

This limits the ability to use the Compensation Matrix because larger portions of employees are in the lower pay quartiles that have the larger pay increase percentages. To remedy this problem, the cell increase percentages must be changed or the pay ranges must be redefined to change the employee distributions. Accomplishing the latter is difficult if pay ranges are already well established and reflect the organization's pay level policy (range midpoints set at market, for example). In this situation, meeting the salary increase budget requires changing the cell values in the matrix. Creating a uniform employee distribution in the matrix is more easily accomplished where pay ranges are not established and each individual's position in the pay range can be defined by using compa-ratios as in our faculty example. In the CUPA example, the organization targets the market median, and its overall compa-ratio relative to market medians should be 1.00. That is, its average salaries are the same as market medians for those jobs. The

compa-ratio example using the CUPA data reflects this situation by separating the second and third pay quartiles at the compa-ratio of 1. However, using the AACSB data creates a situation where the institution is actually paying below market with an average compa-ratio of about .86. The organization might then want to adjust the pay quartile definition as follows in order to maintain some uniformity in the pay distribution:

Q4   compa-ratio above .95 relative to market median

Q3   compa-ratio from .875 to .95 relative to market median

Q2   compa-ratio from .80 to .85 relative to market median

Q1   compa-ratio below .80 relative to market median

University data is shown in Table 2. Defining the pay quartiles in this manner produces a distribution in which just under forty eight percent of faculty are in the top two pay quartiles. Generally, organizations will probably want to divide their compa-ratios into fairly evenly distributed categories for whatever database they choose to use.

Performance Evaluation Results

The CEPM approach involves an application of a merit system. Our example assumes that the organization's approach to merit involves a composite measure in which all employees are categorized into one of five performance categories. A discussion of the developing and application of the performance management system is far beyond the scope of this article, but it goes without saying that the successful application of the CEPM depends heavily on the development of performance criteria and measures that are relevant, fair, accepted by faculty, and that are procedurally adequate. Table 2 includes an example of composite performance scores from the targeted university using the following merit labels and distributions of performance scores:

5 - Very High Merit   15.4% of all employees

4 - High Merit   33.3% of all employees

3 - Expected Merit   47.4% of all employees

2 - Below Expected   2.6% of all employees

1 - Far Below Expected   1.3% of all employees

In this system, we can identify a limited number of employees who are outstanding performers, and a substantial number whose performance is above the expected level. Most employees are assumed to perform at or above an expected level of performance, and a few employees will have performance below acceptable levels.

Based on the quartile and performance distributions, each cell will contain a specific proportion of the organization's employees. Based on the actual data for all 78 faculty members, 15.4% of all faculty members were rated as Very High Merit (5) in performance and 19.2% of all faculty members were at the top quartile of the pay range. Based on the data 3.85% of all employees were both top performers and at the top of their pay ranges. This data was used to calculate the proportional distributions for all employees in each of the cells.

Determining Pay Increase Percentages

In Table 2, a set of hypothetical pay increase percentages (shown in boldface) have been added to each cell. The actual CEPM is developed on a spreadsheet to allow the manager to experiment with different pay increase percentages in each cell until the pay increase budget allocation is met. This process is not arbitrary, however. Two variables determine pay increase percentages: performance ratings and position in the pay range. Pay increase percentages should increase as we move from the top-to-bottom and from right-to-left in the matrix.

To reward performance, individuals rated at the top of the performance scale (those rated as "Very High Merit," for example) will receive a larger percentage increase than with lower merit ratings. Consider, for example, two individuals who are both just above the midpoint of the pay range in pay quartile 3 (Q3). Person A who is at the "Very High Merit" level (5) in performance would receive a 5.25% pay increase, while person B at the "Expected Merit" performance level (3) would receive a 3.25% pay increase.

Since the matrix also is designed to address market (external) equity, those individuals at the bottom of the pay range (in the bottom pay quartile or at Q1) will receive a larger percentage increase than those at the top of the pay range (those at the top pay quartile or Q4), assuming that both individuals have the same merit rating. In the matrix, those in the highest pay quartile and the lowest merit rating (Q4 and "Far Below Expected") in the upper right of the matrix will always receive the lowest percentage increase (usually no increase), because these individuals are currently at the top of their pay ranges but have poor performance. Those in the bottom pay quartile (Q1) with "Very High Merit" in the lower left of the matrix will always receive the largest percentage increase because they are the organization's best performers but are at the bottom of the pay range. Table 2 provides an example of one intuitive way in which pay increases might be distributed (the pay increase percentages are in boldface).

Table 2

Compensation Equity/Performance Matrix

	Performance Appraisal Ratings					
Quartile	5	4	3	2	1	**Row**
Distribution	15.4%	33.3%	47.4%	2.6%	1.3%	**Totals**
Q4						
Employees	3	6	6	0	0	
Emp. %	3.85%	7.69%	7.69%	0.00%	0.00%	19.2%
Increase %	**4.75%**	**3.50%**	**2.75%**	**0.00%**	**0.00%**	
Impact	*0.1827%*	*0.2692%*	*0.2115%*	*0.0000%*	*0.0000%*	*0.6635%*
Q3						
Employees	2	7	13	0	0	
Emp. %	2.56%	8.97%	16.67%	0.00%	0.00%	28.2%
Increase %	**5.25%**	**4.00%**	**3.25%**	**0.00%**	**0.00%**	
Impact	*0.1346%*	*0.3590%*	*0.5417%*	*0.0000%*	*0.0000%*	*1.0353%*
Q2						
Employees	5.0	8	10	1	0	
Emp. %	6.41%	10.26%	12.82%	1.28%	0.00%	30.8%
Increase %	**5.75%**	**4.50%**	**3.75%**	**1.00%**	**0.00%**	
Impact	*0.3686%*	*0.4615%*	*0.4808%*	*0.0128%*	*0.0000%*	*1.3237%*
Q1						
Employees	2.0	5	8	1	1	
Emp. %	2.56%	6.41%	10.26%	1.28%	1.28%	21.8%
Increase %	**6.50%**	**5.00%**	**4.25%**	**2.00%**	**0.00%**	
Impact	*0.1667%*	*0.3205%*	*0.4359%*	*0.0256%*	*0.0000%*	*0.9487%*
Column Totals	**0.8526%**	**1.4103%**	**1.6699%**	**0.0385%**	**0.0000%**	**3.9712%**

Notes. Based on CUPA quartile data using all masters institutions. Budgeted overall pay increase of 4%.

Budgetary Impact of Pay Increases

As pay increase percentages are added to the cells, the overall salary increase budget becomes depleted, and the manager must continuously adjust cell entries until the budget is met and the distributions are appropriate. The budgetary impact of selecting a specific pay increase percentage in each cell is determined by multiplying the

proportion of employees who are in each cell of the matrix by the pay increase percentage in each cell. Once that is done, the cell values are added to arrive at a total pay increase percentage. For example, consider those 8 individuals in pay quartile, Q2 who are rated as "High Merit" or a "4" in performance. In Table 2, these 10.26% of all employees receive a 4.5% pay increase. The total pay increase budget will then be affected by slightly less than one-half percent (10.26% * 4.5% = .4615%).

To arrive at the total overall pay increase, we must add the increases in each of the cells (the italicized number at the bottom of each cell). In Table 2 the budgetary impact of the cells in each column are totaled in the row labeled "Column Totals." As an example, each individual rated "Very High Merit" in performance receives the percentage pay increase shown in bold based on his or her position in the pay quartiles, and the overall impact on the pay increase budget will be .8526% (the value in "Column Totals"). The total impact on the salary increase budget is the sum of the Column Totals:

$$.8526\% + 1.4103\% + 1.6699\% + .03850\% + .0000\% = \textbf{3.9712\%}$$

This total very nearly matches our 4.00% budget. Since the Compensation Matrix is developed on a spreadsheet and automatically recalculates, it is easy to change cell values to meet the pay increase budget or to conduct sensitivity analysis by changing cell entries to explore different pay increase patterns. We could go back and allocate the remaining .0288% of the budget to reach the 4.00% budget allowance.

One additional point is that the rows in the matrix are built on position in the pay range. Pay ranges will, of course be different for jobs at different organizational levels. Two individuals at different job levels, and with far different pay levels, may be in the same pay quartile. One's salary might be $30,000 a year, and the other's at $65,000 a year, but both could be in the lowest pay quartile (Q1) if both are paid far below the market average for each of their jobs. If higher paid employees are unevenly distributed into lower pay quartiles (which is often the case), the CEPM payout may be slightly higher than the amount budgeted. Therefore, as the last step in the development of the Compensation Matrix, actual salaries need to be inserted in the matrix, the percentage increases applied, and the cell values reconciled with the pay increase budget.

The Logic of the Pay Increase Percentages and the Impact on Pay Differentials

The CEPM approach is designed to address the pay compression/inversion problem within a performance management system. It is, therefore, designed to address two issues simultaneously: (1) pay differentials that violate standards of equity, and (2) pay differentials based on performance. Among university faculty, pay differentials exist for many reasons. Many of the reasons for the existence of pay differentials are random and unrelated to job performance. These include the ability of the individual faculty member to effectively negotiate a favorable initial contract, market salaries at entry, budgetary conditions at the time of promotion, special "deals" made with administrators, and other random factors. Obviously, performance is often a major factor in overall salary level, but many universities have inadequate performance management systems whose operation frequently makes it difficult to justify pay differentials over time. So each organization adopting a CEPM begins with a pay system in which some pay differentials are based on job-related factors, but others are less rational. The CEPM is not a tool that focuses on equal pay but on equitable pay; that is, that individuals with equivalent performance should, over time, be at the same position in pay relative to market. Thus the CEPM is based on two assumptions:

1. Pay should be based on performance and individuals who perform better than others should receive higher percentage pay increases.

2. Standards of pay equity dictate that people at the bottom of a pay range who are performing as well as people at the top of a pay range should be able to progress to the top of the pay range and pay differentials of comparably performing individuals should be reduced over time.

Typical pay ranges for faculty employees can be 10-40% or more. Consider the salary levels and merit ratings for three selected full professors in accounting from Table 1 as shown in Table 3. Before adjustments, the overall pay differential for these three individuals of the same rank and discipline was just over 14.5% from highest to lowest paid. The application of the CEPM reduces the differential to 11.3%, while recognizing the differences in both performance and pay range position. Faculty member C, the strongest performer, receives a much higher pay increase than either

faculty member A or B, and the pay differential is reduced by 3.25% and 2.5% respectively. Note also that the pay differential between two essentially equivalent faculty (A and B) has been reduced by about .5%, reflecting that faculty member A is in a higher pay quartile relative to faculty member B.

Table 3

Pay Levels, Differentials, Merit Ratings for Three Accounting Professors

Faculty Member	Current Salary	Current Pay Differentials	Pay Quartile	Merit Rating	Pay Increase Percentage	New Salary	New Pay Differentials
A	101,962	A/C: 14.53%	4	3	2.75%	104,766	A/C: 11.28%
	-	A/B: 10.75%	-	-	-	-	A/B: 10.21%
B	92,068	B/C: 3.42%	3	3	3.25%	95,060	B/C: 0.97%
C	89,024	-	2	5	5.75%	94,143	-

One additional note is that the CEPM approach can be adjusted to put more or less weight on equity versus performance. The sample matrix in Table 2 is weighted much more on performance than on equity. Our original assumption was that overall wage growth during the plan year is 2.75%, so that is the minimum pay increase percentage for all individuals with performance at acceptable levels and above. Beyond that, differences in equity-based increases are smaller than differences in performance-based increases. Based on unit and organizational missions and values, the CEPM percentages can be altered to place more relative emphasis on performance or more on equity.

Reasons to Utilize a Compensation Equity/Performance Matrix

We have presented a detailed salary analysis showing the operation of a CEPM within a group of tenure-track business faculty at a large public university. The process involves the analysis of a compensation system based on both internal and external equity and involves the careful application of a merit system to the pay determination process. There are several reasons that justify the adoption of this type of system:

1. Fairness: The CEPM is a systematic manner in which to apply a performance-based pay system. It offers a set of decision rules that can be consistently and uniformly applied and reduces the role of chance and favoritism.

2. Performance and equity are addressed concurrently: since the CEPM uses both an individual's performance evaluation and position in the pay range to establish pay increase percentages, it insures that better performers get higher percentage increases. At the same time it reduces pay differentials among individuals at the same performance level by granting larger percentage increases to individuals at the bottom of the pay range. Over time, this system increases pay differences across individuals who perform at different levels but reduces pay differentials across individuals of the same performance level.

3. Flexibility: The CEPM is an extremely flexible process. It can be applied to any job family. Also, when budgets change, or when performance or pay distributions change, the matrix can be adjusted to match the changes by altering the pay raise percentages in each cell.

4. Strategic Fit: The CEPM can be used to implement compensation strategy in a variety of ways. The relative weights given to performance and pay compression can change with changing organizational goals. If current pay differentials are unjustified relative to performance or other criteria, more weight can be given to the rows (the pay quartiles) to restore equity or reduce pay compression. By contrast, where pay differentials appear to be equitable, organizations can shift emphasis to performance by varying the weights across the columns.

5. Budgets: With the CEPM organizations have inherent controls built into the pay increase process. No separate pool of funds needs to be devoted to equity adjustments because they are built into the system.

6. Pay Discrimination and EEO Issues: The compensation system analysis required by this approach can be useful in detecting systematic differences in pay levels via the comparative analysis of compa-ratios across disciplines and/or ranks. Organizations with concerns regarding pay differentials across gender or racial categories have an automatic tool to address pay inequity. If equally performing protected group members are underpaid relative to majority group members, this will be picked up in the CEPM and pay will be adjusted accordingly.

Issues with the Compensation Equity/Performance Matrix

The CEPM is a very useful tool to address multiple compensation problems, but its use is limited. There are a number of implementation conditions and situational factors that limit its usefulness. These are explored below:

1. It is not a substitute for performance appraisal. The CEPM is not an appraisal tool; it is a means to apply appraisal results in a systematic manner. It is very much dependent on the adequacy of the underlying appraisal instrument. The performance appraisal system has to be a valid system that defines performance appropriately and produces fair and generally accepted results that identify employees performing at different levels.

2. It is dependent on performance distributions. The matrix system works best when employees are distributed throughout the performance categories and pay ranges. If the appraisal system suffers from severe leniency to the extent that a large percentage of employees are in the top two appraisal categories, the differences in pay raise percentages will be negligible and pay increases, by default, will mostly be devoted to pay equity and the compression issue.

3. It is dependent on pay distributions. The matrix works best when employees are distributed throughout the pay quartiles. If organizations are currently far below market rates, but set pay ranges at market medians or means, employees will be aggregated in the lower pay quartiles rather than being distributed across the pay range. This will consequently limit the ability to give equity adjustments of moderate size. In these situations, it may be that organizations target the midpoint of the pay range to be below market (for example, set pay range midpoints at 90% of market median, set them at the 45th percentile, or some similar metric).

4. The ability of the CEPM to address pay compression and performance is limited by the pay increase budget. As a matter of equity, employees who are satisfactory performers expect to receive pay increases that keep them whole with the market. Since 2000, wages and salaries for all civilian workers have increased each year by an average of about 3% (Bureau of Labor Statistics, 2008). In the matrix, few employees are likely to be identified as Below Expected performers. Therefore, pay increase budgets below 4% leave little room to either reward perform or reduce pay compression.

5. The impact of the CEPM on pay compression occurs slowly over time. The CEPM is not a quick fix or an immediate solution to pay compression and inversion problems. Just as the impact of pay compression appears over a period of several years of compensation decisions, the adjustments in the matrix require a number of years (perhaps a decade) to restore pay equity. This approach is incremental and designed to work with annually budgeted funds. Organizations requiring immediate adjustments must use a more direct process and devote a separate pool of funds to equity adjustments.

CONCLUSIONS

Pay compression and inversion remain major concerns of many organizations. Additionally, there is increasing insistence to reward employees relative to performance. The CEPM approach represents an incremental and reasonable way to use a limited annual pay increase budget to address these pay issues. Despite several implementation issues, the CEPM has the potential to reward performance, yet still produce measurable reductions in pay compression and inversion over time.

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