Faculty Salary Determination at a Research I University

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It is safe to say that interest in faculty salary structure is more than academic. There is the perception that faculty salaries have fallen relative to average labor market compensation. Though such comparisons are rough in the sense that they do not take into account changes in relative labor quality, they are probably indicative of the direction of change in quality-adjusted compensation of academics relative to other workers. In addition there is the perception of increasing faculty workloads that further erode the real compensation for academics. Such pressures invite scrutiny of faculty salary determination within academic institutions. This paper is an attempt to model faculty salary determination at a Research I institution in the mid 1990's. Our analysis employs data on scholarship and teaching and places special emphasis on gender comparisons.

Salary concerns commonly voiced on campuses have to do with a) the abilities of institutions to keep up with the academic market in terms of salaries, and b) salary equity. The latter is manifested in two ways. First, there is the concern over salary compression (Lillydahl and Singell, 1992; McCulley and Downey, 1993). It is a well accepted notion that salary growth within an institution does not match the growth of opportunity costs as evidenced by the magnitudes of outside offers compared with internal salaries. Second, gender salary equity is an issue faced by most colleges and universities (Barbezat, 1987, 1989b; Brittingham et al., 1979; Ferber et al., 1978; Katz, 1973; Gordon et al., 1974; Hirsch and Leppel, 1982; Hoffman, 1976; Koch and Chizmar, 1976; Toutkoushian, 2002).

With respect to gender salary differentials, common practice is to attempt to separate out the contributions of human capital. As a first approximation, the residual

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is treated as a measure or estimate of salary discrimination. However, this residual is potentially related to the salary compression issue. When a university's internal compensation mechanism is largely driven by responses to outside offers, a gender salary gap can arise. This would be the case if men are more likely than women to generate external offers. Would such a phenomenon really reflect objective market valuations based on productivity and performance or would it suggest that women are less likely to seek outside offers? Reasons given for the latter range from monopsony power tied to job immobilities that may affect women more than men (Ransom, 1993) or for cultural reasons women may be less disposed toward generating outside offers as threat points.

A number of studies have looked as salary determination within specific educational institutions in the context of addressing gender salary gaps (Becker and Goodman 1991; Becker and Toutkhoushian 1995; Megdal and Ransom 1985; Oaxaca and Ransom 2002). However, these studies were unable to take account of individual faculty publication and teaching activities but instead had to rely on variables such as education and seniority. A college or university's faculty compensation structure is not generally understood to be a civil service based system. Of course faculty unionism does place contractual restrictions on the salary determination process (Barbezat, 1989a). This is especially important for Research I universities. More generally, the pecuniary reward system is expected to be tied to something more than one's disciplinary field, rank, and years of service at the institution (seniority). Part of what seniority and years of prior experience are capturing are publication activity, professional standing, teaching performance, and accumulated service contributions. Unfortunately, the civil service type variables are crude proxies for the aforementioned factors that are believed to lie at the very heart of faculty compensation. In order for any study of faculty salary determination within a specific institution to have credibility, it is necessary to somehow take explicit account of teaching, scholarship,

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and service.

METHODOLOGY

An important question that arises in the empirical analysis of faculty salary determination is that of the appropriate level of aggregation within the educational institution. To the extent that the external market influences relative salaries by discipline, it would seem appropriate to use the academic department as the basic organizational unit for studying salary variation across individuals. The problem with this approach is that numbers of observations can be too limited for the purpose of estimating separate salary models at the departmental level. At the other extreme, one can use the entire institution as the organizational unit. Since the influence of one's disciplinary affiliation is expected to play a prominent role in salary determination, one would want to include controls for academic department (Megdal and Ransom, 1985). Our approach takes the middle ground by using the college as the basic organizational unit with controls for departmental affiliation. Thus, we estimate separate salary models for each college within the university.

Our point of departure is a standard cross-section model of log salary determination

$$\ell n(Y_i) = X_i\beta + \varepsilon_i \ , \ i = 1, ..., n \tag{1}$$

where Y_i is the 10 month academic salary, X_i is a row vector of salary determinants, β is a column vector of log salary coefficients, and ε_i is a random disturbance term. For ease of notation the college and academic year subscripts have been suppressed.

Under appropriate assumptions pooled cross-section, time series data permit more efficient estimation of the salary determination relationship. The simplest specification of the salary model is given by

$$\ell n(Y_{it}) = Z_i\gamma + X_{it}\beta + \psi_{it} \ , \ i = 1, ..., n \quad t = 1, ..., T_i \tag{2}$$

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where Z_i is a row vector of time invariant regressors including an intercept term, γ is a column vector of the log salary effects of the time invariant regressors, X_{it} is a row vector of time varying regressors, β is a column vector of the log salary effects of the time varying regressors, and ψ_{it} is a classical disturbance term.

The random effects (RE) model emerges from eq.(2) when ψ_{it} is generated according to

$$\psi_{it} = u_i + \varepsilon_{it} , \tag{3}$$

where u_i is a classical error term that varies across individuals but not over time. Furthermore, it is assumed that u_i and ε_{it} are independent.

Next, the fixed effects (FE) model emerges from eq.(2) when ψ_{it} is generated according to

$$\psi_{it} = \alpha_i - Z_i\gamma + \varepsilon_{it} \tag{4}$$

where α_i is an individual specific intercept term and ε_{it} is a classical disturbance term. Upon substitution of eq.(4) into eq.(2), the FE model is obtained:

$$\ell n(Y_{it}) = \alpha_i + X_{it}\beta + \varepsilon_{it} . \tag{5}$$

In general the fixed effects as represented by $Z_i\gamma$ are swept away. This is a serious problem if one of the fixed regressors is gender. However, Oaxaca and Geisler (2003) in a generalization of Polachek and Kim (1994) shows that a two-stage, GLS estimation procedure in the FE model yields the pooled OLS estimator of γ in eq.(2) under the restriction that the fixed effects are spanned by $Z_i\gamma$, i.e. $\alpha_i = Z_i\gamma$. A simple F test is developed to test the restriction. If the restriction is correct, then pooled OLS estimation of eq.(2) is the efficient estimator. If the restriction does not hold, then $\alpha_i = Z_i\gamma + \Gamma_i$ where Γ_i represents the remaining but not separately identified fixed effects. In this case the β vector in eq.(5) is efficiently estimated by the standard $LSDV$ or "within" FE methods. Unfortunately, γ cannot be estimated with the standard FE model. The only way that γ could be consistently estimated by pooled

LS when $\alpha_i \neq Z_i\gamma$ would be if Γ_i were asymptotically uncorrelated with Z_i and X_{it}. Rejection of the RE model in favor of FE would cast doubt on the uncorrelatedness between Γ_i and Z_i and X_{it}.

As developed in Oaxaca and Geisler (2003), the F statistic for the restriction $\alpha_i = Z_i\gamma$ is $\dfrac{\left(\hat{\varepsilon}'_{ols}\hat{\varepsilon}_{ols} - \hat{\varepsilon}'_{fe}\hat{\varepsilon}_{fe}\right)/(n - k_1 - 1)}{\hat{\varepsilon}'_{fe}\hat{\varepsilon}_{fe} \ / \ (n\bar{T} - n - k_2)}$, where $\hat{\varepsilon}'_{ols}\hat{\varepsilon}_{ols}$ and $\hat{\varepsilon}'_{fe}\hat{\varepsilon}_{fe}$ are the error sums of squares from the pooled OLS and FE models, n is the number of cross-section observations, $\bar{T}$ is the average number of time-series observations per cross-section unit, k_1 is the number time invariant regressors (excluding the constant term), and k_2 is the number of time varying covariates. The standard LM test may be used to test for OLS versus RE. In the case of the Hausman test for RE versus FE, the construction of the Hausman statistic uses the estimated sub variance/covariance matrix on the β parameters in eq. (2), i.e. $\left(\hat{\beta}^{fe} - \hat{\beta}^{re}\right)'\left(\hat{\Sigma}_{\hat{\beta}^{fe}} - \hat{\Sigma}_{\hat{\beta}^{re}}\right)^{-1}\left(\hat{\beta}^{fe} - \hat{\beta}^{re}\right)$. These tests are applied below to a panel data set on faculty at a Research I university.

DATA

The data for our study consist of two merged databases for tenure eligible and tenured faculty at a Research I university. The first database is a longitudinal data set consisting of mostly readily available public information on those faculty members who were employees of the university in the 1994-95 academic year and who at any time during the previous 10 years were tenured or tenure eligible personnel with faculty status. The data include department, college, year of hire, salary at hire, current salary, gender, rank, administrative appointments, highest degree, year of receipt of highest degree and student credit hours taught in a selected semester. With the exception of gender and teaching load, these variables are the typical civil service type variables used in analyzing faculty salary determination. These data were merged with a special database obtained from faculty vitas that were provided to us

on an individual voluntary basis. Faculty vitas yielded information on publication activity and teaching awards. Publication data were coded as cumulative publications for each year.

For purposes of this study, we impute college affiliation by the unit in which the faculty member's voting privileges reside. One's departmental affiliation is determined on the basis of the academic unit from which one's paycheck is received. Normally, these means of identifying one's home department and college are internally consistent. In a few instances where the two did not agree, the college assignment was derived from the identified home department. This approach resolves some issues arising from joint appointments across colleges and departments.

Because there were teaching faculty who were on fiscal appointments, it was necessary to convert salaries to a common standard for comparisons. Our approach was to adjust fiscal salaries by 10/12. Salaries were corrected for inflation by using the CPI-U with 1995 as the base.

EMPIRICAL RESULTS

Given the enormous task of coding vita information into a usable database, our initial effort at modeling faculty salary determination is confined to the Education College and the Business College. These two colleges were selected because they are comparable in terms of both having a professional aspect to their degree programs and because they are an interesting contrast in terms of market salaries and gender composition. The academic education field is relatively low paying but has a much larger proportionate representation of women on the faculty compared with business schools. In this study we do not attempt to resolve the issue of to what extent salaries are lower in education because it is a feminized field versus the extent to which education is feminized because it is relatively lower paying.

Our analysis is confined to the set of individuals for whom we obtained vita infor-

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mation. Very few observations had to be excluded on this basis. In the few cases of missing vitas, the faculty members were usually not present. Based on comparisons between the few for whom vitas were missing and the rest, we conclude that no bias was introduced into our analysis because of selection issues. In addition to similar mean values for the civil service type variables, there was no evidence of selection bias in estimated Heckit salary equations.

Education College

Table 1 lists the 1995 means of the key variables for the Education College. There were 64 faculty members in our sample, 38 (59%) of whom were men versus 26 (41%) women. The unadjusted salary for men exceeded that of women by nearly 16%. Overall the rank structure is heavily tilted toward the tenured ranks with 88% of the faculty at the associate or full professor level. Among men, 37% were associate professors and 53% were full professors. These percentages are nearly reversed for women - 54% were associate professors and 31% were full professors. The representation in the lecturer rank is almost identical between the two genders. (5% and 4%). In this college lecturers generally have Ph.D's. and teaching responsibilities, but are not tenured.

About 13% of the faculty were currently serving in an administrative capacity, though the incidence was much higher for men than for women (18% versus 4%). Administrative appointments typically refer to department heads, but can include positions such as program director, which still allows some involvement in teaching activities. Nearly a third of the faculty held previous administrative appointments at the university with men having more frequent administrative roles than the women, 39% versus 19%.

Men had nearly two more years of seniority than women and slightly in excess of $2\frac{1}{2}$ years additional prior experience. For our purposes prior experience is defined as

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years since the receipt of highest degree until employment at the university. In both colleges the highest degree was a Ph.D. or equivalent degree. With respect to time in current rank, men had $3\frac{1}{2}$ years more than women. This undoubtedly reflects the fact that men were more likely to be in the most senior rank. Interestingly, women had spent an average of two more years in their previous rank than men. This has implications for promotion rate differences.

The largest concentration of faculty in the Education College are found in the Teaching & Teacher Education Department. This is equally true for men and women. With respect to the remaining departments, women were more concentrated in the Special Education & Rehabilitation and in the Language, Reading & Culture Departments whereas men were more concentrated in the Educational Psychology as well as in the Language, Reading & Culture Department.

We next examine gender differences in scholarship activities. Publication activity is separated into pre and post employment at the university. With respect to refereed journal publication activity since arrival at the university, men had published more articles than women and had more coauthors. As far as monographs[1] and books are concerned, men and women were about equal in their publication profiles. Women tended to publish more papers in the proceedings category[2] than men. Generally, men had published more in all categories prior to employment at the university.

In the realm of teaching awards, women enjoyed nearly an 8 to 1 advantage over men for awards while at the university. In terms of prior teaching awards, men enjoyed a 2 to 1 advantage over women, though the percentages were quite small. The male advantage here reflects at least in part their more lengthy prior experience.

Table 2 reports selected findings pertaining to the cross-section model of eq. (1) for

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[1]The section "monographs" also includes individual chapters in books, as well as manuals and reports.

[2]The section "proceedings" also includes unrefereed journal articles

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1995. Three submodels are reported. Model 1 corresponds to a basic civil service type regression, Model 2 adds performance variables (research and teaching), and Model 3 controls for initial salary at the time of hire (adjusted for inflation). We interacted gender with faculty rank in order to estimate gender differentials within rank. Common to all three models is the not surprising finding that full professors earn more than the other ranks. Assistant professors earn less than associate professors though the amounts are never statistically significant. The special rank of lecturer is associated with statistically significant lower salaries than associate professors and assistant professors. Also, seniority, prior experience, and administrative experience were generally not statistically significant predictors of salary. With the exception of the positive salary effect of undergraduate upper division student credit hours in Model 3, none of the student credit hour variables were statistically significant.

It is illuminating to examine how some results change when performance factors are taken into account. Across all three models there is a statistically significant salary differential in favor of women administrators. The estimated differential increases in magnitude and significance when performance variables are taken into account. Controlling for performance measures raises the estimated female salary advantage among administrators to 43% from 25%. At the same time with performance measures included, we estimate a statistically significant female salary disadvantage of 16% among full professors. In the absence of performance measures, Model 1 indicates no statistically significant female salary disadvantage within any rank.

There is a persistent statistically significant departmental salary advantage for the Higher Education Department compared to the Department of Teaching & Teacher Education. Controlling for performance raises the estimated departmental salary differential for the Higher Education Department from 9.9% to 15.9%. The performance measures themselves were not jointly significant at conventional levels of significance, though single-authored monographs exhibited a small and statistically

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significant positive effect on salary.

In model 3 the log of original salary replaces the prior performance and experience measures of Model 2 since original salary should capture cumulative productivity at the time of hire. The inclusion of original salary was intended to better identify subsequent salary rewards after the date of initial hire. This specification reduces the gender salary gap among full professors from 16.3% in Model 2 to 10.5% and the estimated gap is now only marginally significant. On the other hand the gender salary gap favoring women lecturers increases and becomes statistically significant. As for original salary itself, this variable is marginally insignificant and indicates an inelastic relationship to current salary. Using the mean original salary, one can calculate that the incremental percentage effect of an additional $1,000 of starting salary raises current salary by about 0.50% ($270). This is one manifestation of the salary compression problem.

Our panel data sample size for the Education College consists of 564 pooled cross-section, time series observations. In addition to the expected time invariant regressors such as gender, department, prior experience, and prior performance, there were regressors that just happened to be time invariant in our particular sample. These were the regressors corresponding to female lecturers and female full professors, and lecturers. The estimated panel data models are reported in Table 3. We were able to reject pooled OLS in favor of both FE and RE using the special F test for the former and a LM test for the latter. We were also able to reject the RE model in favor of the FE model using the Hausman test. Consequently, we focus our attention on the FE model estimated effects of the time varying covariates.

Relative to Associate Professors, Full Professors received a 26.4% (log points) salary premium and assistant professors experienced a relatively modest 4.7% salary penalty. There is a statistically significant gender salary penalty for women assistant professors in the amount of 5.2% (log points). Adjusted gender salary differentials among

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full professors could not be identified in the FE model because there were no promotions of women to full professor during the period of the panel. The RE and pooled OLS results indicate a salary penalty among female full professors of 18.1% and 4.6%, respectively. However, these estimates are likely biased. Although there is no statistically significant salary effect for current administration among male faculty, women administrators enjoyed a marginally statistically significant 3.1% salary premium over their male counterparts. There is a statistically significant 4.7% salary effect for previous administration. Unfortunately, the gender differential among faculty with previous administrative duties cannot be identified because of the time invariance of previous administration among women.

Despite the lack of significance on the negatively estimated coefficient on the linear term for years worked at the university, the results clearly reveal the salary compression effects of seniority from the statistically significant negative coefficient on the quadratic term. For example, the salary growth rate for a faculty member with 10 years of seniority is -0.45% and -0.85% for a faculty with 20 years of seniority. While current administrative responsibility seems to have no impact on male faculty salaries, female administrators experience a marginally significant 3.1% salary premium.

The FE results do not indicate that scholarship has much effect on salary at the margin. Among the time varying scholarship indicators, only the number of co-authors on monographs exhibits a statistically significant positive effect on salary. On the other hand a counterintuitive result is that the number of single-authored books is associated with a statistically significant negative salary impact. The pooled OLS results offer more support for the positive effects of scholarship on salary, at least in terms of monograph production. The fact that these effects pretty much vanish with the FE model would indicate that the positive effects of scholarship are confounded with individual specific salary traits. The pooled OLS results also show that journal publications prior to employment at the university are associated

with higher current salaries while the FE results show no effect. Of course these time invariant variables are swept away by the FE estimator and are likely biased for pooled OLS and FE. Perhaps not surprisingly, teaching awards had no influence over salary. Departmental/disciplinary salary effects are also differenced out by the FE estimator, but the pooled OLS results suggest a salary advantage in the Educational Psychology and Higher Education departments relative to the other departments while the RE model does not yield any statistically significant department effects.

Business College

Table 4 lists the 1995 means of the key variables for the Business College. There were 84 faculty members in the sample, 66 (79%) of whom were men versus 18 (21%) women. The unadjusted salary for men exceeded that of women by nearly 21%. The overall rank structure is slightly skewed toward the tenured ranks with 59% of the faculty at the associate or full professor level. Among men, 18% were associate professors and 47% were full professors. Women were less concentrated in the tenured ranks with 28% serving as associate professors and 11% serving as full professors. About 12% of the faculty were currently serving in an administrative capacity which is very nearly the same as in the Education College. As in the case with the Education College, the incidence of administration was much higher for men than for women (14% versus 6%). About 17% of the faculty held previous administrative appointments at the university with men having more frequent administrative roles than the women, 18% versus 11%. The seniority differential between men and women was considerably more than in the Education College. Men had just under 5 more years of seniority than the women. This reflects an acceleration in hiring women faculty in recent years. In terms of prior experience, men averaged about 4 more years than women, with women's average previous work experience being on average a little over 2 years. This is indicative of the fact that the recent hiring of women has tended

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to be at the more junior levels. With respect to time in current rank, men had 3.8 years more than women which was very close to the difference in the Education College. Women had spent an average of about one year less in their previous rank than men. The largest concentration of faculty in the Business College are found in the Economics Department, which also exhibits the largest concentration of male faculty members. Female faculty members are most heavily concentrated in the Management Information Systems Department.

With respect to journal publication activity since arrival at the university, men had published more articles, monographs, and books than women and had more coauthors. Women tended to publish more papers in proceedings than men. Generally, the same gender pattern held for publication activity prior to employment at the university.

Unlike the Education College, men in the Business College enjoyed nearly a $2\frac{1}{2}$ to 1 advantage over women for teaching awards while at the university. None of the women had received a teaching award prior to their employment at the university.

Table 5 reports selected findings pertaining to the cross-section submodels of eq. (1) for 1995. Common to all three models is again the not too surprising finding that full professors earn more than faculty in the lower ranks. Assistant professors earn less than associate professors though the amount is not statistically significant in Model 1 (the civil service regression). Also, seniority, prior experience, and administrative experience generally were not statistically significant predictors of salary, with the exception of the statistically significant and positive coefficient on the linear term for seniority in Model 2. Increases in upper division credit hours taught had a small but statistically significant negative salary effect in Model 2; however, having faculty status with no teaching responsibilities was associated with large and statistically significant salary penalties for both Models 2 and 3. These individuals are presumably engaged in purely administrative work, though most faculty in administrative roles still do some teaching.

There were no statistically significant gender salary differentials within any of the faculty ranks. However, a statistically significant gender gap favoring male administrators becomes large (45.9%) and statistically significant when performance measures are included in Model 2. Relative to economists there are persistent statistically significant departmental salary advantages for the MIS, Accounting, Marketing, and Finance Departments. These differentials range from 9.2% to 35.1%. Controlling for performance raises the estimated departmental salary differentials notably for the Marketing and Finance Departments. Economists enjoyed a statistically significant salary advantage of 11.6% over faculty in the School of Public Administration and Policy. However, this advantage is reduced somewhat when performance measures are included. Unlike the case of the Education College, the performance measures were jointly significant for the Business College. It is evident that multicollinearity is a problem since the only individually significant performance measure effects were for the number of coauthored monographs while at the university (Model 3) and the number of coauthored articles and the number of coauthors on these articles prior to employment at the university (Model 2). The results are counterintuitive in that they imply that additional coauthors raise salary but additional coauthored journal articles exact a salary penalty.

In model 3 the inclusion of original salary and omission of performance measures prior to employment at the university reduces the gender salary gap among faculty administrators from a statistically significant -45.8% in Model 2 to a statistically insignificant -18.6%. Original salary is statistically significant and indicates an inelastic relationship to current salary. At the mean original salary, the estimated incremental percentage effect of an additional $1,000 of starting salary raises current salary by about 0.32% ($232). Again, such a finding is one manifestation of the salary compression issue.

The Business College panel data sample size consists of an unbalanced design of

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596 pooled cross-section, time series observations. In addition to the expected time invariant regressors such as gender, department, prior experience, and prior performance, the regressor corresponding to female full professors was time invariant, since all female full professors were already hired in that rank. The estimated panel data models are reported in Table 6. We were able to reject OLS in favor of both FE and RE using the special F test for the former and a LM test for the latter. We were unable to reject the RE model in favor of the FE model using the Hausman test. Hence, the RE model may very well best describe the data, and we will accordingly focus on these results.

We found a statistically significant 16.4% salary penalty among female full professors but no statistically significant gender salary differences in the other ranks or in current administration. Current administration itself is associated with a statistically significant 3.8% salary penalty but previous administrative duties generated a statistically significant 9.6% return. Unlike the case with the cross-section regression, the rank differentials for full professors and assistant professors relative to associate professors were a statistically significant 10.1% and -14.2%.

Seniority exhibited the classic diminishing returns salary growth profile but as in the case of the Education College the linear term was statistically insignificant. Salary compression is also present in the Business College. For example, the estimated salary growth rate for a faculty member with 10 years of seniority is -0.45% and is -1.1% for a faculty member with 20 years of seniority. Faculty in the School of Public Administration and Policy and in the Management and Policy Department, earn adjusted salaries comparable to what economists earn while faculty in the other departments exhibit statistically significant salary advantages over economists.

We next examine the salary effects of scholarship while employed at the university. Single-authored journal articles had a positive and statistically significant effect on salary. Coauthored articles did not exhibit an effect on salary though the num-

ber of journal coauthors was associated with higher salaries. Single-authored monographs were associated with a statistically significant negative salary effect. Coauthored monographs exhibited a statistically significant salary effect and the number of monograph coauthors carried a negative and statistically significant effect on salary. These results make sense in that the more coauthored monographs per coauthor, the higher the salary. Solo-authored books had no statistically significant salary effects. However, the number of coauthored books and the number of book coauthors had statistically significant positive and negative effects, respectively. Again such results are plausible in that they suggest a salary reward to increasing the number of coauthored books per coauthor. The positive salary effect of proceedings publications was statistically significant.

Next, we consider the time invariant scholarship activities prior to the date of hire. The salary effect of solo-authored journal articles was positive and statistically significant. Previous journal coauthorship was not statistically significant. In the case of monographs, single-authored publications exhibited a negative and statistically significant effect on salary. Neither the number of prior coauthored monographs nor the number of prior monograph coauthors had statistically significant effects on salary. In terms of prior book publications, only the number of coauthors was statistically significant and its effect was to reduce current salary. Teaching awards received at the university were associated with a statistically significant salary penalty. Teaching awards prior to employment at the university also carried a salary penalty but it was not statistically significant.

CONCLUDING REMARKS

Our findings shed some light on the salary compression (negative returns to seniority) issue. To gain some perspective on our results we note that Barbezat and Donihue (1998) found that the return on seniority for faculty salaries is positive over a

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lengthy employment period. But it falls at high seniority levels, and especially early in research universities. Their work is based on a national faculty survey data in which the log of academic salary is regressed on degree type, race, gender, academic discipline, continuous experience and seniority. Initially they found a positive coefficient for both experience and seniority, which is robust to the inclusion of publication variables. But when the sample is divided up, the seniority coefficient turns out to be negative and significant for tenured faculty in total and for full professors. The experience coefficient for all of the break-out samples meanwhile remained positive and statistically significant in the tenured ranks. These findings support Ransom's hypothesis (1993) that reduced faculty mobility accompanies the granting of life-time employment and employers may gain monopsony power over tenured faculty. Moore, Newman and Turnbull's (1998) findings on the other hand support the negative seniority effect only in the absence of research productivity variables. Once productivity measures are included the effect disappeared. The paper's analysis was based on data that were gathered from faculty members' vitas in nine economics departments with a PhD program, including only already tenured faculty members. The dependent variable was the log of academic salary, and in the regression the authors included fairly detailed productivity measures. Publications are divided by quality into level I and II, and an additional variable uses citations from the Social Science Citation Index. They also accounted for the quality of the PhD program the faculty member graduated from, and included teaching awards which produced no statistically significant impact. This paper's results support the human capital approach, concluding that faculty with greater seniority appear to be rewarded less because they have been relatively less productive than colleagues with less seniority at similar stages of their career. In fact neither seniority nor experience have a statistically significant impact on earnings.

While our methodology is comparable to that in Barbezat and Donihue (1998),

our research finds no statistically significant impact of seniority on faculty members' salary in the cross-section analysis. This could be explained partially by the fact that we used a one-school sample, versus a national survey. Our results are more in line with Moore, Newman and Turnbull's (1998) findings, despite their usage of only Economics Department data from nine different institutions. On the other hand our panel data results do suggest a statistically significant negative impact of seniority on salary arising from a negative coefficient on seniority squared.

In spite of our considerable efforts to gather documentation on faculty performance, there are a number of issues that affect the inferences one can draw from the empirical results on faculty salary determination. Service contributions are conspicuously absent from our models, yet officially service is a factor taken into account for promotion to full professor and for salary determination in the tenured ranks. Documentation on service contributions was not complete because while publication activity is always listed on vitas, the recording of service contributions is spotty. No attempt was made to control for the quality of publications. This proved to be too subjective an exercise. It is not always easy to identify the top X journals for a department. Even where this is feasible, how does one deal with publications in top speciality journals? Books and monographs are even more difficult to objectively characterize in terms of quality. Citation indexes were considered as a possible identifier of quality research. There is the problem that these indexes do not exist in all fields and where they do exist, not all of the coauthors may be listed. Apart from pure noise, it is difficult to determine what, if any, bias may be imparted by not controlling for quality. Perhaps the FE and RE models may capture the effects of individual specific quality. We deliberately omitted information on chaired professorships. Some professorships have tight specifications regarding the type of individual who can be awarded the professorship. Also, if there were any gender inequity in the award of professorships, estimated gender salary gaps would be understated in the presence of controls for chaired positions. To some ex-

tent the same argument might be made regarding our controls for faculty rank. We examine gender pay gaps within ranks but this overlooks the extent to which gender salary gaps could arise as a result of inequity in promotion or rank assignment. We did estimate models in which rank was not controlled and found little difference from the results reported. However, in some instances where the overall gender gap was not statistically significant there were gender gaps within specific ranks. The reason is that statistically significant gender salary gaps favoring male full professors were offset by statistically insignificant salary gaps favoring women in the lower faculty ranks.

We have estimated historical initial-hire salary regressions (not reported here) and found a statistically significant salary penalty against women in the Education College of about 15% but no statistically significant gender gap in the Business College. These regressions did not control for rank at the time of hire since prior productivity and experience measures were used to control for the factors that would determine starting rank.

There are a couple of points about the nature of our panel that bear mentioning. One is that our panel consists of everyone who was present in 1995 so that the yearly sample size shrinks as we look further back in time. This is the opposite of the usual sample attrition with panel data in which the panel goes forward from a point in time and individuals subsequently drop out. The second point is implied by the first. Namely, that we do not have data on faculty who have left the university. This is typically the case with firm level data as firms do not expend much resources to maintain personnel records of former employees. It is difficult to know what, if any, bias this may create in estimation.

It is clear that promotion outcomes influence salaries (Johnson and Stafford, 1974). An important aspect of the promotion process is the extent to which it is gender neutral. Unfortunately, the absence of data on individuals who have left the university

places severe limitations on trying to infer anything about promotion equity.

It is not clear how to interpret gender differences in the incidence of administrative responsibilities and in the returns to administration (Mark, 1986). Unlike rank in which there is an unambiguous ordering from least preferred to most preferred, it is not obvious whether administrative roles should be viewed as desirable or undesirable. Do the financial returns associated with administration reflect much rent or simply inadequate compensation for previous service that was in the nature of civic duty? Depending on how one views administration, less female involvement in administration could be either interpreted as the denial of opportunity for women or special punishment for men. Unless the nature of the administrative roles are quite different, gender salary gaps among administrators can be readily interpreted in terms of who has the salary advantage.

One important point to take away from this study is that our findings illustrate the erroneousness of conventional wisdom that holds that unexplained gender salary gaps will shrink if productivity/performance measures can be incorporated into salary regressions. It is obvious that on econometric grounds there is no a priori expectation as to what should happen to measured gaps when performance measures are added to salary regression models. If women are better represented in the positive return performance measures or less represented in the negative return performance measures, the unexplained gap can widen.

The work presented in this paper was selected from a large number of specifications that were explored. It is meant to be illustrative of the techniques that can be used and the type of data that are available when studying salary determination within a given institution of higher education. Our analysis employs a statistical test that assists the researcher in evaluating a pooled OLS model with time invariant regressors versus a FE representation of the process. A number of tentative conclusions emerge from this paper. Estimation of salary structure is better approached

with panel data rather than a single year's cross-section. Scholarship does appear to impact salary determination though this was mainly true for the Business College. Some of the statistically significant publication effects on salary indicate that the number of coauthored publications per coauthor had a negative effect on salary. This is a counterintuitive result and could represent nothing more than collinearity problems. Though we know that there are one-time pecuniary rewards for special teaching awards, we find no evidence that teaching impacts one's salary base in a positive way. Our results reveal the salary compression phenomenon consistent with the notion that more recent hires are paid market salaries while those who have been on the faculty for some length of time lose ground relative to the market. Previous administration carries a positive return though current administrative duties have no effect on salary. Finally, sizeable gender salary gaps in favor of males can exist within the rank of full professor. It may be that a policy of trying to respond to outside offers could favor men to the extent that women may not seek salary augmenting outside offers to the same extent as men. Thus a seemingly gender neutral policy may not yield a gender neutral outcome.

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Table 1
Means: College of Education - 1995

Variables	All	Men	Women
Number of Observations	64	38	26
Percent		59.38	40.63
Hired			
Year	80	80	81
Salary, Yearly	28251	31169	23988
Current Salary			
Original	54877	58113	50148
Adjusted*	54050	57036	49687
Rank			
Lecturer	0.05	0.05	0.04
Assistant Professor	0.08	0.05	0.12
Associate Professor	0.44	0.37	0.54
Full Professor	0.44	0.53	0.31
Administration			
Current	0.13	0.18	0.04
Previous**	0.31	0.39	0.19
Work at Univ, Years			
All Years	14.55	15.24	13.54
Current Rank	10.50	11.92	8.42
Lecturer	17.67	20.50	12.00
Asst Prof	3.60	5.00	2.67
Asoc Prof	9.43	9.79	9.07
Full Prof	12.00	13.25	9.00
Previous Rank***	4.00	3.71	5.77
Work before Univ			
Years	5.52	6.58	3.96
Departments			
Teaching & Teacher Educ	0.33	0.32	0.35
Educational Psychology	0.19	0.24	0.12
Higher Education	0.08	0.11	0.04
Language, Reading & Culture	0.20	0.18	0.23
Special Educ & Rehabilitation	0.20	0.16	0.27

*   Salary is adjusted for academic pay period.
**   Only administrative experience after 1984.
***   Previous rank for associate and full professors only.

Table 1 (Continued)

Variables	All	Men	Women
PUBLICATIONS:*****			
Journals			
Single-Authored	5.73	6.39	4.77
Co-Authored	7.11	8.05	5.73
Total # of Co-Authors	10.73	12.55	8.08
Monographs			
Single-Authored	6.66	6.68	6.62
Co-Authored	6.06	5.97	6.19
Total # of Co-Authors	9.31	9.32	9.31
Books			
Single-Authored	0.33	0.37	0.27
Co-Authored	0.63	0.61	0.65
Total # of Co-Authors	1.08	1.08	1.08
Proceedings	2.58	1.95	3.50
PUBLICATIONS BEFORE Univ:*****			
Journals			
Single-Authored	3.42	4.71	1.54
Co-Authored	3.89	5.71	1.23
Total # of Co-Authors	5.41	8.00	1.62
Monographs			
Single-Authored	3.06	3.66	2.19
Co-Authored	2.25	3.26	0.77
Total # of Co-Authors	3.64	5.45	1.00
Books			
Single-Authored	0.17	0.18	0.15
Co-Authored	0.50	0.74	0.15
Total # of Co-Authors	0.80	1.24	0.15
Proceedings	1.28	1.47	1.00
TEACHING:			
Awards	0.30	0.08	0.62
Awards before Univ	0.06	0.08	0.04

*****   Publications are reported cumulative.

Table 2
Log Salary Regressions: College of Education - 1995
(N = 64)

Variables	Model 1		Model 2		Model 3	
	Coef	P-val	Coef	P-val	Coef	P-val
Female Dummy Variables:						
Lecturer	0.0760	0.51	0.1415	0.26	0.2609	0.07
Assistant Professor	-0.0451	0.62	-0.0539	0.60	-0.0001	1.00
Associate Professor	-0.0081	0.83	0.0034	0.95	0.0306	0.57
Full Professor	-0.0331	0.46	-0.1634	0.03	-0.1050	0.10
Administration	0.2505	0.02	0.4317	0.01	0.3380	0.01
Original Pay					0.1415	0.11
Rank						
Lecturer	-0.1567	0.03	-0.1678	0.05	-0.1659	0.05
Assistant Professor	-0.0525	0.52	-0.1305	0.24	-0.1359	0.15
Full Professor	0.2416	0.00	0.3547	0.00	0.2979	0.00
Administration						
Current	0.0200	0.66	-0.1156	0.17	0.0337	0.61
Previous**	0.0378	0.25	0.0538	0.32	0.0674	0.15
Work at Univ, Years						
All Years	0.0037	0.66	-0.0033	0.81	0.0014	0.91
All Years, squared	0.0000	0.99	0.0001	0.75	0.0002	0.58
Work before Univ						
Years	0.0110	0.10	-0.0003	0.98		
Years, squared	0.0003	0.39	0.0000	0.98		
Departments						
Educational Psychology	-0.0025	0.95	0.0024	0.97	0.0329	0.51
Higher Education	0.0992	0.06	0.1587	0.04	0.1104	0.08
Language, Readg & Culture	0.0376	0.29	-0.0157	0.79	0.0022	0.96
Special Educ & Rehabilitatn	0.0265	0.46	0.0070	0.89	0.0276	0.53
PUBLICATIONS:						
Journals						
Single-Authored			-0.0030	0.46	0.0005	0.90
Co-Authored			0.0014	0.84	-0.0043	0.50
Total # of Co-Authors			-0.0031	0.41	0.0007	0.84
Monographs						
Single-Authored			0.0087	0.06	0.0048	0.22
Co-Authored			-0.0052	0.47	0.0019	0.79
Total # of Co-Authors			0.0046	0.33	-0.0001	0.99
Books						
Single-Authored			-0.0079	0.80	-0.0381	0.22
Co-Authored			-0.0105	0.71	-0.0014	0.96
Total # of Co-Authors			0.0121	0.38	0.0057	0.66
Proceedings			-0.0004	0.84	0.0005	0.78

Table 2 (Continued)

Variables	Model 1		Model 2		Model 3	
	Coef	P-val	Coef	P-val	Coef	P-val
PUBLICATIONS BEFORE Univ:						
Journals						
Single-Authored			0.0012	0.80		
Co-Authored			-0.0278	0.17		
Total # of Co-Authors			0.0178	0.15		
Monographs						
Single-Authored			0.0013	0.86		
Co-Authored			0.0182	0.46		
Total # of Co-Authors			-0.0047	0.68		
Books						
Single-Authored			0.0109	0.86		
Co-Authored			0.0092	0.89		
Total # of Co-Authors			-0.0076	0.84		
Proceedings			-0.0070	0.41		
TEACHING:						
Awards			0.0061	0.64	0.0067	0.57
Awards before Univ			0.0926	0.18		
Student Credit Hours Taught						
Undergraduate Lower Div			0.0007	0.62	0.0009	0.51
Undergraduate Upper Div			0.0002	0.52	0.0003	0.06
Graduate			0.0002	0.46	0.0004	0.19
INTERCEPT	10.6118	0.00	10.6704	0.00	9.1452	0.00
R^2	0.8856		0.9502		0.9079	
Adjusted R^2	0.8398		0.8432		0.8186	

Left-out variables: Department of Teaching & Teacher Education and the rank of Associate Professor.
* Yearly salary is adjusted for the academic year, which only pays salary over a 10 month period.
** Previous Administration contains info for the last 11 years or the time the professor was working at the university, whichever was shorter.

	Pooled OLS		Fixed Effects		Random Effects	
	Coef	P-val	Coef	P-val	Coef	P-val
Female Dummy Variables:						
Lecturer	0.1068	0.00			0.0215	0.90
Assistant Professor	0.0251	0.29	-0.0519	0.06	0.0681	0.16
Associate Professor	0.0764	0.00	-0.0178	0.25	0.1064	0.02
Full Professor	-0.0459	0.02			-0.1814	0.00
Administration	-0.0122	0.67	0.0311	0.10	0.0318	0.11
Rank						
Lecturer	-0.0725	0.00			-0.0282	0.79
Assistant Professor	-0.0650	0.00	-0.0471	0.01	-0.0488	0.01
Full Professor	0.2401	0.00	0.2635	0.00	0.3110	0.00
Administration						
Current	0.0530	0.00	0.0139	0.16	0.0157	0.13
Previous***	0.0864	0.00	0.0473	0.00	0.0449	0.00
Work at Univ, Years						
All Years	0.0160	0.00	-0.0005	0.85	0.0013	0.58
All Years, squared	-0.0005	0.00	-0.0002	0.00	-0.0002	0.00
Work before Univ						
Years	0.0020	0.54			0.0196	0.10
Years, squared	0.0011	0.00			0.0002	0.77
Departments						
Educational Psychology	0.0962	0.00			0.0521	0.42
Higher Education	0.0993	0.00			0.0957	0.25
Language, Readg & Culture	0.0101	0.43			-0.0027	0.96
Special Educ & Rehabilitatn	-0.0115	0.38			0.0620	0.25
PUBLICATIONS:						
Journals						
Single-Authored	-0.0017	0.11	0.0035	0.11	0.0029	0.13
Co-Authored	0.0024	0.20	0.0015	0.65	0.0014	0.68
Total # of Co-Authors	-0.0021	0.03	0.0010	0.61	0.0004	0.83
Monographs						
Single-Authored	0.0045	0.00	0.0008	0.56	0.0003	0.83
Co-Authored	-0.0050	0.02	-0.0017	0.54	-0.0019	0.50
Total # of Co-Authors	0.0047	0.00	0.0032	0.03	0.0033	0.03
Books						
Single-Authored	0.0039	0.66	-0.0406	0.00	-0.0407	0.00
Co-Authored	0.0267	0.06	-0.0086	0.49	-0.0008	0.95
Total # of Co-Authors	-0.0020	0.81	-0.0014	0.80	-0.0027	0.65
Proceedings	-0.0026	0.00	-0.0002	0.87	-0.0003	0.75

Table 3 (continued)

	Pooled OLS		Fixed Effects		Random Effects	
	Coef	P-val	Coef	P-val	Coef	P-val
PUBLICATIONS BEFORE Univ:						
Journals						
Single-Authored	0.0082	0.00			0.0056	0.34
Co-Authored	-0.0334	0.00			0.0086	0.70
Total # of Co-Authors	0.0182	0.00			-0.0075	0.57
Monographs						
Single-Authored	-0.0066	0.00			-0.0105	0.23
Co-Authored	0.0095	0.20			-0.0317	0.19
Total # of Co-Authors	-0.0022	0.50			0.0157	0.17
Books						
Single-Authored	-0.0729	0.00			-0.1396	0.03
Co-Authored	-0.0355	0.11			-0.0548	0.48
Total # of Co-Authors	0.0055	0.67			0.0463	0.29
Proceedings	-0.0001	0.98			-0.0014	0.88
TEACHING:						
Awards	-0.0017	0.61	0.0061	0.56	0.0077	0.39
Awards before Univ	0.0130	0.52			0.0227	0.76
INTERCEPT	10.5470	0.00			10.5973	0.00
R²	0.8760		0.9630			
Adjusted R²	0.8670					

Left-out variables are Department of Teaching & Teacher Education and the rank of Associate Professor.
**   Yearly salary is adjusted for the academic year, and by CPI-U with 1995 = 100%
***   Previous Administration contains info for the last 11 years or the time the professor was working at the university, whichever was shorter.

Table 4
Means: College of Business and Public Administration - 1995

Variables	All	Men	Women
Number of Observations	84	66	18
Percent		78.57	21.43
Hired			
Year	85	84	89
Salary, Yearly	68129	70561	59478
Current Salary			
Original	73151	75960	62853
Adjusted*	71534	74273	61494
Rank			
Assistant Professor	0.40	0.35	0.61
Associate Professor	0.20	0.18	0.28
Full Professor	0.39	0.47	0.11
Administration			
Current	0.12	0.14	0.06
Previous**	0.17	0.18	0.11
Work at Univ, Years			
All Years	9.11	10.15	5.28
Current Rank	6.87	7.68	3.89
Asst Prof	3.60	2.78	3.64
Asoc Prof	9.43	12.58	2.40
Full Prof	12.00	9.42	9.00
Previous Rank***	4.00	2.47	1.39
Work before Univ			
Years	5.37	6.24	2.17
Departments			
Economics	0.31	0.36	0.11
Mgmt Info Systems	0.14	0.12	0.22
Accounting	0.11	0.11	0.11
Mgmt and Policy	0.14	0.14	0.17
Marketing	0.08	0.06	0.17
School of Pub. Adm.	0.11	0.09	0.17
Finance	0.11	0.12	0.06

*   Salary is adjusted for academic pay period.
**   Only administrative experience after 1984.
***   Previous rank for associate and full professors only.

Table 4 (Continued)

Variables	All	Men	Women
PUBLICATIONS:**			
Journals			
Single-Authored	3.50	3.94	1.89
Co-Authored	7.17	7.70	5.22
Total # of Co-Authors	11.92	13.03	7.83
Monographs			
Single-Authored	2.13	2.58	0.50
Co-Authored	2.38	2.73	1.11
Total # of Co-Authors	4.08	4.70	1.83
Books			
Single-Authored	0.37	0.44	0.11
Co-Authored	0.18	0.23	0.00
Total # of Co-Authors	0.27	0.35	0.00
Proceedings	2.46	2.26	3.22
PUBLICATIONS BEFORE Univ**			
Journals			
Single-Authored	3.50	4.32	0.50
Co-Authored	5.50	6.33	2.44
Total # of Co-Authors	8.01	8.91	4.72
Monographs			
Single-Authored	1.31	1.53	0.50
Co-Authored	1.38	1.41	1.28
Total # of Co-Authors	1.88	1.86	1.94
Books			
Single-Authored	0.27	0.32	0.11
Co-Authored	0.20	0.23	0.11
Total # of Co-Authors	0.26	0.30	0.11
Proceedings	1.01	0.91	1.39
TEACHING:			
Awards	0.24	0.27	0.11
Awards before Univ	0.11	0.14	0.00

*****   Publications are reported cumulative.

Variables	Model 1 Coef	Model 1 P-val	Model 2 Coef	Model 2 P-val	Model 3 (N = 82) Coef	Model 3 (N = 82) P-val
Female Dummy Variables:						
Assistant Professor	-0.0347	0.51	-0.0382	0.35	-0.0270	0.50
Associate Professor	0.0738	0.39	-0.0632	0.49	-0.0327	0.72
Full Professor	-0.1029	0.54	-0.1145	0.52	-0.0664	0.67
Administration	-0.1499	0.52	-0.4588	0.08	-0.1855	0.37
Original Pay Rank					0.2206	0.00
Assistant Professor	-0.0485	0.49	-0.1249	0.05	-0.0889	0.10
Full Professor	0.2788	0.00	0.1585	0.02	0.1518	0.01
Administration						
Current	0.1178	0.20	0.1342	0.14	0.0612	0.43
Previous**	0.0841	0.33	0.0841	0.33	0.0841	0.33
Work at UofA, Years						
All Years	-0.0025	0.73	-0.0142	0.13	-0.0109	0.25
All Years, squared	0.0000	0.99	0.0001	0.78	0.0001	0.84
Work before UofA						
Years	0.0066	0.34	0.0184	0.03		
Years, squared	0.0001	0.65	-0.0005	0.14		
Departments						
Mgmt Info Systems	0.1456	0.00	0.0915	0.07	0.0414	0.39
Accounting	0.3144	0.00	0.3239	0.00	0.2657	0.00
Mgmt and Policy	0.0688	0.18	0.0663	0.26	0.0192	0.71
Marketing	0.1458	0.06	0.2352	0.00	0.1883	0.01
School of Pub. Adm.	-0.1161	0.04	-0.0802	0.13	-0.0779	0.08
Finance	0.2672	0.00	0.3506	0.00	0.2241	0.00
PUBLICATIONS:						
Journals						
Single-Authored			0.0095	0.21	0.0063	0.18
Co-Authored			0.0006	0.96	0.0081	0.38
Total # of Co-Authors			0.0010	0.87	0.0002	0.97
Monographs						
Single-Authored			-0.0021	0.73	0.0035	0.55
Co-Authored			0.0278	0.16	0.0282	0.07
Total # of Co-Authors			-0.0089	0.41	-0.0124	0.19
Books						
Single-Authored			0.0236	0.28	0.0268	0.13
Co-Authored			-0.0018	0.98	-0.0281	0.70
Total # of Co-Authors			-0.0083	0.86	0.0070	0.86
Proceedings			0.0021	0.59	0.0002	0.96

Table 5 (Continued)

Variables	Model 1		Model 2		Model 3	
	Coef	P-val	Coef	P-val	Coef	P-val
PUBLICATIONS BEFORE Univ:						
Journals						
Single-Authored			0.0071	0.16		
Co-Authored			-0.0276	0.01		
Total # of Co-Authors			0.0160	0.04		
Monographs						
Single-Authored			0.0016	0.89		
Co-Authored			0.0044	0.88		
Total # of Co-Authors			-0.0009	0.97		
Books						
Single-Authored			-0.0050	0.90		
Co-Authored			-0.0440	0.77		
Total # of Co-Authors			0.0332	0.77		
Proceedings			0.0007	0.94		
TEACHING:						
Awards			0.0117	0.50	0.0180	0.26
Awards before Univ			-0.0408	0.18		
Student Credit Hours Taught						
None			-0.2031	0.00	-0.1647	0.00
Undergraduate Lower Div			-0.0002	0.24	-0.0002	0.16
Undergraduate Upper Div			-0.0003	0.06	-0.0002	0.17
Graduate			-0.0005	0.19	-0.0002	0.43
INTERCEPT	10.9104	0.00	11.0684	0.00	8.6145	0.00
R^2	0.8116		0.9443		0.9234	
Adjusted R^2	0.7594		0.8814		0.8734	

Left-out variables: Department of Economics and the rank of Associate Professor.
* Yearly salary is adjusted for the academic year, which only pays salary over a 10 month period.
** Previous Administration contains info for the last 11 years or the time the professor was working at the university, whichever was shorter.

Table 6
Pooled Cross-Section Time Series Salary Regressions: College of Bus. & Pub. Admin.
(N = 596)

	Pooled OLS		Fixed Effects		Random Effects	
	Coef	P-val	Coef	P-val	Coef	P-val
Female Dummy Variables:						
Assistant Professor	-0.0229	0.15	0.0772	0.14	0.0020	0.93
Associate Professor	-0.0492	0.11	0.0451	0.40	-0.0239	0.41
Full Professor	-0.2502	0.00			-0.1643	0.07
Administration	-0.0122	0.83	-0.0451	0.29	-0.0450	0.18
Rank						
Assistant Professor	-0.0839	0.00	-0.1118	0.00	-0.1010	0.00
Full Professor	0.1756	0.00	0.1280	0.00	0.1424	0.00
Administration						
Current	-0.0008	0.98	-0.0468	0.03	-0.0376	0.03
Previous***	0.0703	0.01	0.1084	0.00	0.0961	0.00
Work at Univ, Years						
All Years	-0.0121	0.00	0.0023	0.38	0.0015	0.44
All Years, squared	0.0001	0.10	-0.0003	0.00	-0.0003	0.00
Work before Univ						
Years	0.0139	0.00			0.0145	0.01
Years, squared	-0.0001	0.22			-0.0002	0.38
Departments						
Mgmt Info Systems	0.0944	0.00			0.1092	0.00
Accounting	0.3036	0.00			0.3027	0.00
Mgmt and Policy	0.0365	0.06			0.0190	0.63
Marketing	0.1482	0.00			0.1688	0.00
School of Pub. Adm.	-0.0047	0.81			-0.0332	0.38
Finance	0.3080	0.00			0.2902	0.00
PUBLICATIONS:						
Journals						
Single-Authored	0.0113	0.00	0.0007	0.74	0.0031	0.06
Co-Authored	0.0050	0.09	0.0021	0.57	0.0009	0.76
Total # of Co-Authors	0.0018	0.24	0.0026	0.15	0.0028	0.05
Monographs						
Single-Authored	-0.0032	0.22	-0.0089	0.01	-0.0095	0.00
Co-Authored	0.0197	0.00	0.0149	0.01	0.0157	0.00
Total # of Co-Authors	-0.0114	0.00	-0.0099	0.00	-0.0102	0.00
Books						
Single-Authored	0.0029	0.75	-0.0018	0.88	0.0035	0.70
Co-Authored	0.0048	0.88	0.1119	0.00	0.0958	0.00
Total # of Co-Authors	-0.0009	0.96	-0.0341	0.03	-0.0294	0.01
Proceedings	0.0026	0.05	0.0011	0.49	0.0022	0.08

Table 6 (continued)

	Pooled OLS		Fixed Effects		Random Effects	
	Coef	P-val	Coef	P-val	Coef	P-val
PUBLICATIONS BEFORE Univ:						
Journals						
Single-Authored	0.0063	0.00			0.0096	0.00
Co-Authored	-0.0279	0.00			-0.0076	0.12
Total # of Co-Authors	0.0188	0.00			0.0046	0.15
Monographs						
Single-Authored	-0.0124	0.00			-0.0103	0.10
Co-Authored	0.0500	0.00			0.0250	0.16
Total # of Co-Authors	-0.0364	0.00			-0.0129	0.31
Books						
Single-Authored	0.0212	0.07			0.0243	0.34
Co-Authored	0.2087	0.00			0.1518	0.12
Total # of Co-Authors	-0.1526	0.00			-0.1195	0.10
Proceedings	0.0055	0.07			-0.0023	0.71
TEACHING:						
Awards	-0.0019	0.62	-0.0093	0.34	-0.0105	0.09
Awards before Univ	-0.0138	0.24			-0.0305	0.16
INTERCEPT	10.9100	0.00			10.9220	0.00
R^2	0.8833		0.9611		0.8166	
Adjusted R^2	0.8749		0.9530			

Left-out variables are Department of Economics and the rank of Associate Professor.

**   Yearly salary is adjusted for the academic year, and by CPI-U with 1995 = 100%

***   Previous Administration contains info for the last 11 years or the time the professor was working at the university, whichever was shorter.