

Recent Findings on Faculty Salaries
at the University of Minnesota

Management Information Division

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Summary of Findings

Using the factors and model specification agreed to in the Rajender settlement, it was found that an approximate 6 percent gender differential in salaries in favor of male faculty existed in academic year 1986-1987 at the U of M. Following the distribution of funds mandated by the Rajender settlement, it is shown here that there is no longer any evidence of an overall gender differential in faculty salaries in academic year 1990-1991.

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Variable Definitions:

FINAL DEGREE VARIABLES:

- BAMADEG = dummy variable for terminal degree (1 = Bachelor's or Master's degree)
- DOCTDEG = dummy variable for terminal degree (1 = doctorate)
- PROFDEG = dummy variable for terminal degree (1 = Professional)

EXPERIENCE VARIABLES:

- PASTADMX = dummy variable for past administrative experience
- PREVEXP = # days of previous work experience
- NPLEAVE = dummy variable for faculty who have had non-professional leave
- FULASSX = # days experience for Full and Associate Professors
- ASSTTIME = # days experience for Assistant Professors

FACULTY RANK VARIABLES:

- DASOFUL87 = dummy rank classification for 1987 (1 = Associate or Full Professor)
- DASOFUL90 = dummy rank classification for 1990 (1 = Associate or Full Professor)
- DASOFUL91 = dummy rank classification for 1991 (1 = Associate or Full Professor)
- DFULL90 = dummy rank classification for 1990 (1 = Full Professor)
- DASSO90 = dummy rank classification for 1990 (1 = Associate Professor)
- PROMOT91 = dummy variable if faculty are promoted between 1989-90 and 1990-91

OTHER VARIABLES:

- NINE12 = dummy variable for faculty on 9-month appointment
- RETENTN = dummy variable if faculty received retention funds

GENDER = dummy variable for sex (1 = male, 0 = female)
MKTCOMB87 = market salaries aggregated by DASOFUL87
RAJ91 = \$ salary increase due to Rajender settlement

I. Introduction

The objective of this report is to examine what has happened to male and female salaries for faculty at the University of Minnesota since the Rajender decree in 1987. The focus will be on the determinants of faculty salaries, as agreed to in the Rajender settlement, and merit increases for faculty in the academic 1990-91 year.

II. Compromise model in 1986-87 and 1990-91

As part of the settlement of the Rajender class action suit filed at the U of M, a regression model was estimated to determine if female faculty salaries were significantly lower than their male counterparts. After discussions between the plaintiffs and university officials, a regression specification (referred to here as the "compromise model") was estimated for all faculty at the U of M in the academic 1986-87 year. Table I contains the results from this regression. Calculated t-statistics for all variables appear in each table below the estimated coefficient. Critical values for the test statistics (using a one-tailed test with 60 degrees of freedom) would be +1.671 and + 2.390 for 5% and 1% significance levels, respectively.

TABLE I: COMPROMISE MODEL ESTIMATED OVER ALL FACULTY AT
 THE U OF M IN ACADEMIC YEAR 1986-87
 (DEPENDENT VARIABLE = LOG OF MONTHLY 1986-87 SALARY)

CATEGORY	VARIABLE	ESTIMATED COEFFICIENT
DEGREE VARIABLES	BAMADEG	-0.08 (-3.3)
	PROFDEG	0.01 (0.1)
	DOCTDEG	-0.03 (-1.8)
EXPERIENCE VARIABLES	PASTADMX	0.11 (8.6)
	PREVEXP	1.2E-05 (4.8)
	FULASSX	1.3E-05 (6.9)
	ASSTIME	2.1E-06 (0.0)
	NPLEAVE	-4.5E-05 (-1.9)
RANK VARIABLE	<i>RANK</i> DASOFUL87	0.06 (1.5)
MARKET SALARY VARIABLE	<i>NEW</i> MKTCOMB87	7.7E-06 (3.6)
OTHER VARIABLES	RETENTN	0.16 (9.3)
	GENDER	0.06 (4.1)
	NINE12	0.11 (3.7)
SUMMARY INFORMATION	R ²	0.570
	N	1544

(Estimated coefficients of the departmental dummy variables are not shown here)

From the results in Table I for the GENDER coefficient (shaded), it was concluded that the null hypothesis that there is no gender differential in salaries after controlling for the other independent variables in the model could be rejected. In accordance with the settlement, female faculty received additional funds in 1989-90 and 1990-91 (referred to here as "Rajender money" (RAJ90 and RAJ91)) to help équate male and female salaries after controlling for the other independent variables. To determine if the settlement was effective in removing gender differentials in this sense, a cohort of faculty was identified who were at the U of M in both the 1986-87 and 1990-91 academic years, and did not have missing observations on any of the variables used in the compromise model. This cohort represents 84% of all faculty who were here in 1986-87. The compromise model was then re-estimated for this cohort using as the dependent variable salaries from 1986-87 or 1990-91. All of the explanatory variables in the model remained the same with the exception of RANK, which was updated to include 1990-91 academic ranks. The results are shown in Table II:

TABLE II: COMPROMISE MODEL ESTIMATED FOR ALL FACULTY IN THE IDENTIFIED COHORT WITH CURRENT AGGREGATED RANKS

CATEGORY LABELS	VARIABLE	DEPENDENT VARIABLE IS LOG OF 1987 SALARIES	DEPENDENT VARIABLE IS LOG OF 1991 SALARIES
DEGREE VARIABLES	BAMADEG	-0.063 (-2.37)	-0.074 (-2.37)
	PROFDEG	0.015 (0.38)	-0.013 (-0.28)
	DOCTDEG	-0.016 (-0.90)	-0.004 (-0.18)
EXPERIENCE VARIABLES	PASTADMX	0.112 (8.05)	0.120 (7.48)
	PREVEXP	1.42E-05 (5.45)	7.71E-06 (2.57)
	FULASSX	1.51E-05 (7.26)	-1.24E-07 (-0.05)
	ASSTTIME	-8.39E-07 (-0.09)	-2.63E-06 (-0.27)
RANK VARIABLES	DASOFUL87	0.035 (0.78)	N/A
	DASOFUL91	N/A	0.119 (3.83)
MARKET SALARY VARIABLE	NEWMKT	8.10E-06 (3.48)	9.24E-06 (5.70)
OTHER VARIABLES	NPLEAVE	-2.60E-05 (-0.99)	-2.06E-05 (-0.68)
	GENDER	0.059 (4.03)	-0.005 (-0.29)
	RETENTN	0.155 (8.87)	0.180 (8.90)
	NINE12	0.129 (3.97)	0.115 (3.63)
SUMMARY INFORMATION	R ²	0.597	0.531
	N	1299	1294

(Estimated coefficients of the departmental dummy variables are not shown here)

From Table II, it can be seen that after accounting for the changes in salaries due to the Rajender settlement, the coefficient on GENDER is not significantly different from 0 using 1990-91 salaries. The estimated coefficient on GENDER using 1986-87 salaries for the cohort of faculty still at the U of M in 1990-91 is virtually the same as that in the compromise model used for the Rajender settlement. Thus, it seems fair to assert that the settlement was effective in removing the appearance of gender differences in salaries at the U of M from 1986-87 to 1990-91.

A second issue is the possibility that recent salary increases for U of M faculty reflect any systematic gender biases. A specific concern is that female faculty might receive smaller merit increases as a result of the settlement. To examine this issue, a dependent variable was created that measures the percentage salary increase for each faculty member for 1990-91, excluding any Rajender funds received for the same year. This variable was then regressed against a set of departmental dummy variables, a dummy variable for faculty who were promoted between 1989-90 and 1990-91, separate dummy variables for associate and full professors, and a dummy variable for GENDER. The results are shown in Table III:

TABLE III: REGRESSIONS OF NON-RAJENDER SALARY INCREASES FROM 1989-90 TO 1990-91 (Dependent variable is the % change in salaries w/o Rajender money)		
CATEGORY	VARIABLE	ESTIMATED COEFFICIENT
RANK VARIABLES	PROMOT91	0.046 (6.16)
	DFULL90	0.003 (0.49)
	DASSO90	0.006 (1.14)
GENDER VARIABLE	GENDER	-0.004 (-0.96)
SUMMARY INFORMATION	R ²	0.116
	N	1477

(Estimated coefficients of the departmental dummy variables are not shown here)

The results in Table III strongly support the null hypothesis that there has not been a difference in the non-Rajender salary increases for male and female faculty from 1989-90 to 1990-91. Therefore, it appears as though merit increases in academic year 1990-91 were not affected by whether or not a faculty member received additional funds through the Rajender settlement.

III. Conclusion

The results shown above clearly illustrate that the Rajender settlement has been effective in removing the appearance of an overall gender differential in salaries, given the model specification agreed to in the settlement.