

Regression and selected decomposition results for a 3-period sex and salaries analysis

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Introduction

The University of Manitoba has been the subject of studies on sex and salaries since 1974 when the faculty union, the University of Manitoba Faculty Association (UMFA), was certified. Gender inequalities in faculty salaries and positions were analyzed in 1974 (UMFA Status of Women Committee 1974), 1975 (University of Manitoba 1975), 1988 (Pujol and McCannell 1988), 1992 (University of Manitoba 1992), 1993 (Haignere and Lin 1994), and 2003 (Brown, Troutt, and Prentice 2011). The 1993 study (Haignere and Lin 1994) found a 22 percent sex gap in salaries, prompting the University to increase all women's salaries in an effort to eliminate the gap. Brown, Troutt, and Prentice (2011) examined salaries at the 10-year anniversary of the 1993 analysis. They found a salary differential between male and female faculty in 2003 that was essentially unchanged from 1993.

This paper re-examines sex and salaries at the University extending the analysis from one decade to two, using data from 1993, 2003, and 2013. As such, it is the only study of a Canadian university whose analysis spans 20 years. It asks: Was the decade from 2003 to 2013 different from the previous decade? We begin with a discussion of salary gap studies, focusing on academia. We then present an overview of our data. Next, we describe the Blinder-Oaxaca decomposition (BOD) and Wellington-Blinder-Oaxaca decomposition (WBOD) that we use to investigate the elements that have changed between data points. The results and discussion follow.

Context

Since at least the 1970s, researchers and policy makers alike have acknowledged and studied gender pay gaps in many countries and professions. In Canada, despite an improvement in the gender pay gap, women's hourly wage remains about 81.8 percent of men's as of 2014 (OECD 2016).

Persistent pay gaps are echoed between male and female academics at universities throughout the industrialized countries (Catalyst 2015; Goastellec and Pekari 2013; Takahashi and Takahashi 2011). For example, Takahashi and Takahashi (2011) examine the presence and change in the salary gap in Japan, where the academic pay gap between the sexes is the largest in the world (Catalyst 2015), finding no evidence that the gap is decreasing over time. Carlin et al. (2013) examine the gender salary gap using 1996-1997 data for a U.S. university. They conclude that "the comparative lack of reward for peer-rated female productivity is striking" (pp. 145-6). In their analysis, men earned a greater return than women for both research productivity and teaching awards. In Canada, studies have found salary gaps between male and female academics at a number of universities, including Memorial (Schrank 1977, 1985), McGill (Murray 2014), the University of British Columbia (Bakker et al. 2010), McMaster (Office of Institutional Research and Analysis 2014), Calgary (Weingarten 2005), and Winnipeg (Joint Women's Pay Equity Committee 1999). Some universities have made payments to women faculty; these universities include McMaster (McGinn 2015), Winnipeg (University of Winnipeg and The University of Winnipeg Faculty Association 2011), McGill (Murray 2014), the University of British Columbia (University of British Columbia Faculty Association and the University of British Columbia 2012), and Manitoba (Falconer 1994).

At the University of Manitoba, gender inequities in academic salaries have been studied for several decades. A 1974 study (UMFA Status of Women Committee 1974) found that \$200,000

(1974 dollars) would be needed to close the salary gap at that time. The causes of the salary gap were re-examined in 1988 (Pujol and McCannel 1988) with a complaint filed to the Human Rights Commission in 1989 (MACSW 1989). Haignere and Lin (1994) estimated a 22 percent salary gap, prompting the University to pay a remedy. A follow-up study found that a 21 percent salary gap persisted in 2003 (Brown, Troutt, and Prentice 2011).

Aside from productivity and human capital, the academic salary gap could result from labour segregation within academia. Labour segregation is found where there is a significant imbalance in the representation of a particular gender in a particular employment position (Jacobsen 2007). For example, the preponderance of female secretaries and male engineers in general, or male equipment operators and female cleaners in a particular firm, constitute evidence of occupational segregation.

In a university context, occupational segregation is reflected in the higher likelihood of finding men in well-paid positions compared to women either across or within institutions. Across universities, women and men may be hired differentially by institution type, with institutions that are more likely to hire women paying less on average (Britton et al. 2012; Catalyst 2015; Renzulli et al. 2013). Within a single institution, faculty can be hired into instructor ranks or professorial ranks, with gender segregation leading to a preponderance of women in the lower paid instructor ranks (Catalyst 2015). Segregation can also appear in the differential hiring of women by faculty or discipline (Goastellec and Pekari 2013). Finally, it can appear in appointment type, with men more likely to obtain a tenure track position and women more likely to be found in term or contingent positions (Goastellec and Pekari 2013).

While the word discrimination is often used to represent personalistic differential treatment, unconscious bias plays an important role in labour segregation. Raymond (2013, 33) notes that “[a] host of studies shows that people tend to rate women as less competent than men across many

domains, from musical abilities to leadership, and that many individuals hold biases about competency on the basis of other irrelevant attributes, such as skin colour, body weight, religion, sexual orientation and parental status.” A wealth of resumé studies find that both men and women rank the qualifications and expertise of white men higher than those of women or people of colour (e.g., Moss-Racusin et al. 2012; Steinpreis, Anders, and Ritzke 1999; Wenneras and Wold 1997). Systemic discrimination represents unconscious values operationalized through institutionalized processes thought to be neutral (Prentice 2000).

Unconscious bias can give rise to occupational segregation of men and women in a university setting, with consequent implications for the gender salary gap. Female underrepresentation or unequal pay is not attributed to conscious actions by any particular agents or group but may arise from systemic discrimination. Jacobsen (2007) shows the persistence of gender segregation across occupations throughout both industrial and agrarian societies, demonstrating that, without vigilance and intervention, humans tend to segregate. Ongoing, conscious work is required to overcome unconscious biases as well as to achieve and maintain greater equality (Raymond 2013). In some European countries, legal requirements to report on gender representation in senior management have drastically improved women’s representation at the highest levels and in corporate board positions (Lipman 2015).

Data

The data for this study comprise information on all full-time teaching staff at the University, including the professorial and instructor ranks. The analysis includes 1,215, 1,099, and 1,180 teaching staff in 1993, 2003 and 2013, respectively. The University provided administrative data on full-time salary, sex, year of birth, highest degree, year of highest degree, start year, faculty, rank,

appointment type, and partial data on department. The variables in our analysis derive from the administrative data. All time variables are measured relative to November 30 of the relevant year.

The variables are:

- Real salary: annual full-time salary, net of stipends, in 2013 dollars.
- Age: age in years in 1993, 2003, or 2013.
- Pre-University experience: the number of years between the year the employee earned their highest degree and the year they started at the University (negative for faculty who earned their highest degree following their appointment).
- University experience: number of years at the University.
- Binary and categorical variables: female, education (PhD, MA or professional, less than MA), rank (full professor, associate professor, assistant professor, lecturer, senior instructor, instructor 2, instructor 1), appointment type (tenured, probationary, contingent, continuing, term), and faculty (17 or 18 depending on the year).

Tables:

The following tables contain regression coefficients for pooled, male and female models of salary determination at the University, as well as related decomposition results.

Table A.1: Regression results: estimated coefficients and p -values, pooled model, by year.

Variable	1993 $n = 1,215$ adj $R^2 = 0.890$		2003 $n = 1,099$ adj $R^2 = 0.911$		2013 $n = 1,180$ adj $R^2 = 0.893$	
	$\hat{\beta}$	p -value	$\hat{\beta}$	p -value	$\hat{\beta}$	p -value
Pre-University experience	0.0085	0.000	0.0047	0.000	0.0050	0.000
University experience	0.0183	0.000	0.0049	0.002	0.0106	0.000
Univ. experience squared	-0.0001	0.068	0.0001	0.018	-0.0001	0.028
MA or professional degree	-0.0742	0.000	-0.0208	0.050	-0.0099	0.248
Less than MA degree	-0.1393	0.000	-0.0325	0.058	-0.0022	0.889
Full professor	0.2689	0.000	0.2998	0.000	0.2861	0.000
Associate professor	0.0974	0.000	0.1262	0.000	0.1127	0.000
Senior instructor	0.0255	0.576	-0.0012	0.965	0.0349	0.054
Instructor 2	-0.0214	0.545	-0.0877	0.000	-0.0676	0.000
Instructor 1	-0.1088	0.000	-0.2379	0.000	-0.2073	0.000
Probationary appointment	-0.0160	0.246	-0.0421	0.001	-0.0344	0.009
Term appointment	-0.1066	0.000	-0.1427	0.000	-0.0394	0.049
Contingent appointment	-0.0794	0.000	-0.0785	0.000	-0.0594	0.001
Continuing appointment	-0.0275	0.453	-0.0307	0.167	-0.0390	0.020
Agriculture faculty	-0.0004	0.968	0.0287	0.008	0.0106	0.391
Architecture faculty	0.0855	0.000	0.0356	0.045	0.0208	0.151
Art faculty	0.0108	0.598	-0.0680	0.006	-0.0598	0.003
Business faculty	0.2436	0.000	0.2563	0.000	0.2548	0.000
Dentistry faculty	0.0426	0.063	0.0098	0.691	0.0067	0.727
Education faculty	0.0569	0.000	0.0298	0.014	0.0477	0.001
Engineering faculty	0.0564	0.000	0.0963	0.000	0.0632	0.000
Environment faculty			0.0134	0.338	-0.0011	0.933
Extended Ed. faculty	0.0870	0.000	0.0814	0.000	0.0658	0.000
Human Ecology faculty	0.0243	0.223	0.0172	0.341	0.0011	0.930
Kinesiology faculty	0.0506	0.006	0.0536	0.010	0.0302	0.049
Law faculty	0.1557	0.000	0.0971	0.000	0.0507	0.001
Medicine faculty	0.0554	0.000	0.0727	0.000	0.0582	0.000
Music faculty	0.0112	0.705	-0.0012	0.956	-0.0208	0.211
Nursing faculty	0.1463	0.000	0.0826	0.000	0.0527	0.000
Pharmacy faculty	0.0891	0.003	0.1751	0.000	0.1884	0.000
Science faculty	-0.0140	0.082	0.0396	0.000	0.0245	0.002
Social Work faculty	0.1033	0.000	0.0370	0.010	0.0380	0.000
Student Affairs faculty	0.0081	0.818	0.0023	0.956	-0.0196	0.129
Constant	11.0799	0.000	11.1816	0.000	11.3052	0.000

Notes: Omitted variables are PhD, assistant professor, tenured, and Arts. Bolded text indicates coefficient estimates that are significant at the 5% level or higher. Environment faculty did not exist in 1993.

Source: Authors' compilation.

Table A.2: Regression results: estimated coefficients and p -values, male model, by year.

Variable	1993 $n = 939$ adj $R^2 = 0.874$		2003 $n = 718$ adj $R^2 = 0.906$		2013 $n = 702$ adj $R^2 = 0.910$	
	$\hat{\beta}_m$	p -value	$\hat{\beta}_m$	p -value	$\hat{\beta}_m$	p -value
Pre-University experience	0.0098	0.000	0.0054	0.000	0.0058	0.000
University experience	0.0186	0.000	0.0046	0.029	0.0129	0.000
Univ. experience squared	-0.0001	0.158	0.0001	0.053	-0.0001	0.000
MA or professional degree	-0.0979	0.000	-0.0076	0.637	0.0025	0.813
Less than MA degree	-0.1638	0.000	-0.0083	0.727	-0.0076	0.677
Full professor	0.2465	0.000	0.3100	0.000	0.2723	0.000
Associate professor	0.0740	0.000	0.1257	0.000	0.1023	0.000
Senior instructor	0.1248	0.108	-0.0650	0.219	0.0115	0.640
Instructor 2	0.0937	0.059	-0.1196	0.000	-0.0894	0.000
Instructor 1	-0.0560	0.216	-0.2438	0.000	-0.2222	0.000
Probationary appointment	-0.0112	0.535	-0.0393	0.029	-0.0160	0.267
Term appointment	-0.1270	0.000	-0.1348	0.000	-0.0753	0.004
Contingent appointment	-0.1063	0.000	-0.0711	0.001	-0.0637	0.002
Continuing appointment	-0.1231	0.037	-0.0110	0.754	-0.0286	0.185
Agriculture faculty	-0.0090	0.453	0.0169	0.191	0.0098	0.381
Architecture faculty	0.0898	0.000	0.0076	0.704	0.0157	0.409
Art faculty	0.0260	0.291	-0.0891	0.002	-0.0976	0.000
Business faculty	0.2306	0.000	0.2327	0.000	0.2227	0.000
Dentistry faculty	0.0025	0.915	-0.0051	0.853	0.0029	0.867
Education faculty	0.0437	0.004	0.0309	0.050	0.0730	0.006
Engineering faculty	0.0481	0.000	0.0872	0.000	0.0591	0.000
Environment faculty			0.0135	0.390	-0.0013	0.931
Extended Ed. faculty	0.0514	0.048	0.0498	0.004	0.0792	0.000
Human Ecology faculty	-0.0417	0.230	-0.0041	0.916	-0.0084	0.572
Kinesiology faculty	0.0462	0.083	0.0285	0.304	0.0593	0.025
Law faculty	0.1799	0.000	0.0773	0.001	0.0410	0.004
Medicine faculty	0.0531	0.000	0.0631	0.000	0.0392	0.000
Music faculty	0.0241	0.517	-0.0135	0.548	-0.0456	0.011
Nursing faculty	0.1467	0.000	0.0172	0.477	0.0202	0.772
Pharmacy faculty	0.0708	0.045	0.1267	0.000	0.1562	0.000
Science faculty	-0.0241	0.006	0.0287	0.003	0.0174	0.035
Social Work faculty	0.1185	0.000	0.0188	0.301	0.0330	0.039
Student Affairs faculty	0.0533	0.306	0.0289	0.692	-0.0202	0.293
Constant	11.1174	0.000	11.2059	0.000	11.2973	0.000

Notes: Omitted variables are PhD, assistant professor, tenured, and Arts. Bolded text indicates coefficient estimates that are significant at the 5% level or higher. Environment faculty did not exist in 1993.

Source: Authors' compilation.

Table A.3: Regression results: estimated coefficients and p -values, female model, by year.

Variable	1993 $n = 276$ adj $R^2 = 0.871$		2003 $n = 381$ adj $R^2 = 0.880$		2013 $n = 478$ adj $R^2 = 0.852$	
	β_f	p -value	β_f	p -value	β_f	p -value
Pre-University experience	0.0060	0.000	0.0034	0.000	0.0039	0.009
University experience	0.0163	0.000	0.0046	0.034	0.0076	0.017
Univ. experience squared	-0.0000	0.702	0.0001	0.060	-0.0000	0.935
MA or professional degree	-0.0304	0.113	-0.0365	0.015	-0.0308	0.017
Less than MA degree	-0.0658	0.065	-0.0610	0.020	-0.0156	0.600
Full professor	0.3032	0.000	0.2655	0.000	0.3183	0.000
Associate professor	0.1409	0.000	0.1253	0.000	0.1374	0.000
Senior instructor	-0.0097	0.864	0.0177	0.558	0.0685	0.017
Instructor 2	-0.0781	0.034	-0.0702	0.002	-0.0413	0.088
Instructor 1	-0.1715	0.000	-0.2266	0.000	-0.1814	0.000
Probationary appointment	-0.0247	0.237	-0.0556	0.002	-0.0415	0.094
Term appointment	-0.0950	0.001	-0.1574	0.000	-0.0185	0.565
Contingent appointment	-0.0524	0.033	-0.1009	0.000	-0.0515	0.087
Continuing appointment	0.0265	0.562	-0.0439	0.102	-0.0318	0.254
Agriculture faculty	0.0108	0.636	0.0517	0.008	-0.0105	0.734
Architecture faculty	0.0838	0.026	0.0754	0.034	0.0325	0.151
Art faculty	0.0048	0.900	-0.0415	0.430	0.0043	0.915
Business faculty	0.2968	0.000	0.3471	0.000	0.3203	0.000
Dentistry faculty	0.0815	0.055	0.0505	0.366	0.0117	0.753
Education faculty	0.0822	0.009	0.0359	0.064	0.0319	0.019
Engineering faculty	0.1028	0.031	0.1010	0.000	0.0504	0.049
Environment faculty			-0.0032	0.907	-0.0123	0.594
Extended Ed. faculty	0.1289	0.000	0.1167	0.000	0.0742	0.000
Human Ecology faculty	0.0680	0.003	0.0277	0.138	0.0159	0.391
Kinesiology faculty	0.0486	0.095	0.0676	0.028	0.0183	0.371
Law faculty	0.0942	0.011	0.1192	0.000	0.0547	0.052
Medicine faculty	0.0543	0.004	0.0933	0.000	0.0851	0.000
Music faculty	-0.0087	0.775	-0.0009	0.989	0.0290	0.321
Nursing faculty	0.1383	0.000	0.1130	0.000	0.0515	0.003
Pharmacy faculty	0.1468	0.036	0.2344	0.000	0.2201	0.000
Science faculty	0.0109	0.654	0.0656	0.001	0.0288	0.067
Social Work faculty	0.0883	0.003	0.0628	0.004	0.0463	0.002
Student Affairs faculty	0.0007	0.985	-0.0124	0.764	-0.0262	0.129
Constant	11.0524	0.000	11.1860	0.000	11.3069	0.000

Notes: Omitted variables are PhD, assistant professor, tenured, and Arts. Bolded text indicates coefficient estimates that are significant at the 5% level or higher. Environment faculty did not exist in 1993.

Source: Authors' compilation.

Table A.4: Regression results for professor ranks only: estimated coefficients and p -values, pooled model, by year.

Variable	1993 $n = 1,143$ adj $R^2 = 0.882$		2003 $n = 935$ adj $R^2 = 0.896$		2013 $n = 976$ adj $R^2 = 0.876$	
	β	p -value	β	p -value	β	p -value
Pre-University experience	0.0093	0.000	0.0060	0.000	0.0066	0.000
University experience	0.0186	0.000	0.0044	0.017	0.0111	0.000
Univ. experience squared	-0.0001	0.090	0.0001	0.011	-0.0001	0.052
MA or professional degree	-0.0783	0.000	-0.0247	0.054	-0.0317	0.010
Less than MA degree	-0.1708	0.000	-0.0942	0.000	-0.0154	0.679
Full professor	0.2643	0.000	0.2925	0.000	0.2755	0.000
Associate professor	0.0951	0.000	0.1227	0.000	0.1067	0.000
Probationary appointment	-0.0104	0.448	-0.0477	0.000	-0.0285	0.040
Term appointment	-0.1221	0.000	-0.1515	0.000	-0.1260	0.000
Contingent appointment	-0.0855	0.000	-0.0642	0.000	-0.0651	0.005
Agriculture faculty	-0.0019	0.862	0.0301	0.003	0.0028	0.834
Architecture faculty	0.0941	0.000	0.0445	0.020	0.0365	0.019
Art faculty	0.0142	0.509	-0.0681	0.005	-0.0560	0.011
Business faculty	0.2469	0.000	0.2550	0.000	0.2504	0.000
Dentistry faculty	0.0461	0.060	-0.0112	0.635	0.0199	0.333
Education faculty	0.0611	0.000	0.0299	0.014	0.0552	0.000
Engineering faculty	0.0521	0.000	0.0935	0.000	0.0527	0.000
Environment faculty			0.0227	0.071	0.0041	0.768
Extended Ed. faculty	0.1063	0.000	0.0366	0.010	0.0448	0.047
Human Ecology faculty	0.0231	0.245	0.0087	0.615	-0.0020	0.869
Kinesiology faculty	0.0000	0.998	0.0096	0.601	-0.0022	0.887
Law faculty	0.1624	0.000	0.1076	0.000	0.0670	0.000
Medicine faculty	0.0563	0.000	0.0635	0.000	0.0445	0.000
Music faculty	0.0238	0.429	-0.0010	0.965	-0.0134	0.503
Nursing faculty	0.1536	0.000	0.0544	0.004	0.0619	0.000
Pharmacy faculty	0.0874	0.005	0.1647	0.000	0.1325	0.000
Science faculty	-0.0139	0.082	0.0317	0.000	0.0168	0.053
Social Work faculty	0.1102	0.000	0.0478	0.001	0.0358	0.003
Student Affairs faculty	0.0593	0.070	-0.0201	0.590	-0.0022	0.909
Constant	11.0943	0.000	11.2060	0.000	11.3055	0.000

Notes: Omitted variables are PhD, assistant professor, tenured, and Arts. Bolded text indicates coefficient estimates that are significant at the 5% level or higher. Environment faculty did not exist in 1993.

Source: Authors' compilation.

Table A.5: Regression results for professor ranks only: estimated coefficients and p -values, male model, by year.

Variable	1993 $n = 911$ adj $R^2 = 0.868$		2003 $n = 659$ adj $R^2 = 0.896$		2013 $n = 622$ adj $R^2 = 0.895$	
	$\hat{\beta}_m$	p -value	$\hat{\beta}_m$	p -value	$\hat{\beta}_m$	p -value
Pre-University experience	0.0104	0.000	0.0063	0.000	0.0067	0.000
University experience	0.0189	0.000	0.0032	0.175	0.0135	0.000
Univ. experience squared	-0.0001	0.144	0.0001	0.023	-0.0001	0.000
MA or professional degree	-0.0996	0.000	-0.0108	0.557	-0.0150	0.300
Less than MA degree	-0.1862	0.000	-0.0633	0.011	-0.0210	0.448
Full professor	0.2419	0.000	0.3125	0.000	0.2675	0.000
Associate professor	0.0712	0.000	0.1272	0.000	0.0995	0.000
Probationary appointment	-0.0104	0.563	-0.0447	0.010	-0.0088	0.551
Term appointment	-0.1443	0.000	-0.1355	0.000	-0.1427	0.000
Contingent appointment	-0.1024	0.000	-0.0596	0.003	-0.0620	0.008
Agriculture faculty	-0.0115	0.333	0.0168	0.166	0.0029	0.806
Architecture faculty	0.0933	0.000	0.0161	0.449	0.0306	0.157
Art faculty	0.0268	0.292	-0.0866	0.002	-0.0911	0.000
Business faculty	0.2331	0.000	0.2304	0.000	0.2180	0.000
Dentistry faculty	0.0003	0.991	-0.0085	0.761	-0.0043	0.807
Education faculty	0.0426	0.005	0.0354	0.019	0.0809	0.002
Engineering faculty	0.0441	0.000	0.0796	0.000	0.0497	0.000
Environment faculty			0.0219	0.126	-0.0016	0.918
Extended Ed. faculty	0.0749	0.001	0.0321	0.040	0.0695	0.000
Human Ecology faculty	-0.0409	0.241	-0.0157	0.671	-0.0118	0.430
Kinesiology faculty	-0.0031	0.892	-0.0258	0.269	-0.0153	0.520
Law faculty	0.1837	0.000	0.0822	0.001	0.0446	0.005
Medicine faculty	0.0502	0.000	0.0546	0.000	0.0304	0.002
Music faculty	0.0265	0.469	-0.0128	0.572	-0.0433	0.032
Nursing faculty	0.1562	0.000	0.0120	0.607	0.0433	0.475
Pharmacy faculty	0.0686	0.054	0.1182	0.000	0.1265	0.000
Science faculty	-0.0244	0.005	0.0190	0.048	0.0118	0.187
Social Work faculty	0.1221	0.000	0.0234	0.251	0.0297	0.119
Student Affairs faculty	0.0723	0.210	-0.0460	0.370	0.0051	0.887
Constant	11.1169	0.000	11.2153	0.000	11.2950	0.000

Notes: Omitted variables are PhD, assistant professor, tenured, and Arts. Bolded text indicates coefficient estimates that are significant at the 5% level or higher. Environment faculty did not exist in 1993.

Source: Authors' compilation.

Table A.6: Regression results for professor ranks only: estimated coefficients and p -values, female model, by year.

Variable	1993 $n = 232$ adj $R^2 = 0.867$		2003 $n = 276$ adj $R^2 = 0.853$		2013 $n = 354$ adj $R^2 = 0.828$	
	$\hat{\beta}_f$	p -value	$\hat{\beta}_f$	p -value	$\hat{\beta}_f$	p -value
Pre-University experience	0.0073	0.000	0.0052	0.000	0.0065	0.004
University experience	0.0153	0.000	0.0044	0.062	0.0067	0.117
Univ. experience squared	0.0000	0.863	0.0002	0.005	0.0000	0.726
MA or professional degree	-0.0467	0.028	-0.0417	0.028	-0.0515	0.017
Less than MA degree	-0.1237	0.007	-0.1534	0.000	0.0316	0.712
Full professor	0.2898	0.000	0.2437	0.000	0.3011	0.000
Associate professor	0.1367	0.000	0.1212	0.000	0.1244	0.000
Probationary appointment	-0.0236	0.271	-0.0560	0.001	-0.0476	0.069
Term appointment	-0.1073	0.001	-0.1589	0.000	-0.1239	0.001
Contingent appointment	-0.0686	0.011	-0.0805	0.013	-0.0860	0.049
Agriculture faculty	0.0231	0.298	0.0485	0.011	-0.0155	0.637
Architecture faculty	0.1226	0.001	0.0853	0.022	0.0387	0.096
Art faculty	0.0215	0.592	-0.0573	0.211	-0.0053	0.899
Business faculty	0.3061	0.000	0.3442	0.000	0.3141	0.000
Dentistry faculty	0.1335	0.005	-0.0366	0.255	0.0920	0.000
Education faculty	0.1116	0.001	0.0282	0.151	0.0349	0.006
Engineering faculty	0.0848	0.148	0.1082	0.000	0.0398	0.120
Environment faculty			0.0044	0.843	0.0160	0.558
Extended Ed. faculty	0.2058	0.001	-0.0207	0.511	0.0388	0.181
Human Ecology faculty	0.0801	0.000	0.0170	0.322	0.0126	0.526
Kinesiology faculty	0.0188	0.458	0.0327	0.225	0.0040	0.847
Law faculty	0.1246	0.001	0.1447	0.000	0.0877	0.000
Medicine faculty	0.0706	0.000	0.0785	0.000	0.0692	0.000
Music faculty	0.0294	0.408	-0.0189	0.775	0.0638	0.003
Nursing faculty	0.1645	0.000	0.0860	0.001	0.0726	0.000
Pharmacy faculty	0.1534	0.021	0.2254	0.000	0.1343	0.000
Science faculty	0.0246	0.358	0.0714	0.007	0.0185	0.305
Social Work faculty	0.1147	0.001	0.0808	0.001	0.0475	0.014
Student Affairs faculty	0.0654	0.108	0.0053	0.918	-0.0085	0.649
Constant	11.0469	0.000	11.1864	0.011	11.3202	0.000

Notes: Omitted variables are PhD, assistant professor, tenured, and Arts. Bolded text indicates coefficient estimates that are significant at the 5% level or higher. Environment faculty did not exist in 1993.

Source: Authors' compilation.

Table A.7: Variable means, professor ranks only, by year and sex.

Variable	1993		2003		2013	
	\bar{x}_m <i>n</i> = 911	\bar{x}_f <i>n</i> = 232	\bar{x}_m <i>n</i> = 659	\bar{x}_f <i>n</i> = 276	\bar{x}_m <i>n</i> = 622	\bar{x}_f <i>n</i> = 354
Log real salary	11.598	11.358	11.543	11.362	11.660	11.556
Years pre-Univ. experience	2.4	1.5	3.1	2.2	4.5	2.6
Years Univ. experience	17.3	10.1	17.2	9.9	15.4	11.1
Years Univ. experience sq.	393.5	174.3	462.6	193.7	388.9	203.9
PhD	0.847	0.681	0.876	0.736	0.926	0.918
MA or professional degree	0.126	0.272	0.105	0.239	0.064	0.076
Less than MA degree	0.026	0.047	0.020	0.025	0.010	0.006
Full professor	0.533	0.159	0.455	0.185	0.437	0.251
Associate professor	0.126	0.414	0.281	0.326	0.326	0.373
Assistant professor	0.169	0.427	0.264	0.489	0.236	0.376
Tenured	0.809	0.543	0.674	0.471	0.743	0.616
Probationary appointment	0.128	0.254	0.261	0.391	0.235	0.339
Term appointment	0.021	0.103	0.015	0.087	0.006	0.014
Contingent appointment	0.042	0.099	0.050	0.051	0.016	0.031
Agriculture faculty	0.081	0.034	0.074	0.058	0.077	0.042
Architecture faculty	0.038	0.034	0.029	0.036	0.023	0.045
Art faculty	0.016	0.017	0.018	0.014	0.019	0.017
Arts faculty	0.248	0.190	0.229	0.228	0.212	0.291
Business faculty	0.057	0.034	0.055	0.025	0.058	0.042
Dentistry faculty	0.014	0.017	0.011	0.007	0.010	0.006
Education faculty	0.053	0.073	0.035	0.062	0.027	0.062
Engineering faculty	0.086	0.009	0.091	0.029	0.096	0.025
Environment faculty			0.036	0.022	0.045	0.020
Extended Ed. faculty	0.012	0.017	0.008	0.004	0.002	0.006
Human Ecology faculty	0.011	0.086	0.012	0.047	0.021	0.037
Kinesiology faculty	0.013	0.026	0.014	0.033	0.010	0.034
Law faculty	0.019	0.022	0.018	0.022	0.016	0.017
Medicine faculty	0.104	0.129	0.117	0.134	0.143	0.138
Music faculty	0.014	0.017	0.023	0.011	0.027	0.011
Nursing faculty	0.002	0.134	0.005	0.105	0.005	0.054
Pharmacy faculty	0.011	0.009	0.011	0.022	0.018	0.017
Science faculty	0.194	0.073	0.187	0.080	0.175	0.088
Social Work faculty	0.020	0.052	0.023	0.047	0.013	0.042
Student Affairs faculty	0.005	0.026	0.006	0.014	0.003	0.006

Notes: Environment faculty did not exist in 1993.

Source: Authors' compilation.

Table A.8: BOD results, professor ranks only (instructor ranks omitted): Selected variables' estimated endowment and treatment effects and p-values by year.

<i>Endowment effects: effects of differences in male and female mean endowments</i>						
	1993		2003		2013	
Variable	Effect	p-value	Effect	p-value	Effect	p-value
Pre-University experience	0.0083	0.078	0.0050	0.057	0.0127	0.000
University experience	0.1356	0.000	0.0320	0.020	0.0475	0.000
Univ. experience squared	-0.0147	0.094	0.0310	0.014	-0.0119	0.061
MA or professional degree	0.0114	0.000	0.0033	0.074	0.0004	0.502
Full professor	0.0989	0.000	0.0791	0.000	0.0512	0.000
Associate professor	-0.0111	0.002	-0.0056	0.176	-0.0050	0.149
Probationary appointment	0.0013	0.455	0.0062	0.007	0.0030	0.078
Term appointment	0.0101	0.001	0.0109	0.000	0.0010	0.282
Contingent appointment	0.0049	0.015	0.0000	0.967	0.0010	0.205
Business faculty	0.0056	0.116	0.0075	0.026	0.0039	0.278
Education faculty	-0.0013	0.285	-0.0008	0.170	-0.0019	0.038
Engineering faculty	0.0040	0.000	0.0058	0.000	0.0037	0.000
Nursing faculty	-0.0202	0.000	-0.0055	0.012	-0.0030	0.006
Science faculty	-0.0017	0.097	0.0034	0.005	0.0015	0.080
Overall endowment effect	0.2260	0.000	0.1685	0.000	0.1021	0.000
<i>Treatment effects: effects of differences in male and female coefficients</i>						
	1993		2003		2013	
Variable	Effect	p-value	Effect	p-value	Effect	p-value
Pre-University experience	0.0055	0.036	0.0027	0.437	0.0007	0.924
Full professor	-0.0161	0.035	0.0181	0.016	-0.0099	0.350
Associate professor	-0.0243	0.002	0.0018	0.788	-0.0090	0.341
Business faculty	-0.0028	0.084	-0.0036	0.008	-0.0046	0.037
Human Ecology faculty	-0.0056	0.007	-0.0007	0.544	-0.0007	0.322
Music faculty	-0.0001	0.946	-0.0001	0.936	-0.0017	0.015
Pharmacy faculty	-0.0008	0.325	-0.0018	0.040	-0.0001	0.841

Notes: Omitted variables are PhD, assistant professor, tenured, and Arts. Table includes only the variables whose endowment or treatment effect was statistically significant at the 5% level or higher in at least one year of analysis.

Source: Authors' compilation.

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