

Staffing patterns prominent in female-male earnings gap

Earnings differences are relatively small between women and men in narrowly-defined jobs; however, relatively fewer women fill the higher levels of these jobs

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In congressional testimony, Commissioner of Labor Statistics Janet L. Norwood summed up findings on pay differences between women and men by saying: "Women in general earn less than men today and much of the difference is because the jobs that women hold are generally paid at lower rates than the jobs held by men."¹ One need only look at the office setting to understand the strength of this statement: women hold nearly 8 of 10 traditionally lower paid clerical jobs, but fewer than 3 of 10 of the higher paying managerial and administrative positions. Such staffing patterns bring to mind the barriers to women's entry and promotion in higher paying occupations, and the pay differences between the traditionally female-dominated and male-dominated jobs. This article discusses another aspect of gender pay differences: How are women and men paid in jobs they hold in common—to what extent does equal pay prevail for equal work?

Data from the Bureau of Labor Statistics 1981 national survey of professional, administrative, technical, and clerical pay (PATC survey), which covers white-collar employees in medium and large establishments, show that:

- Average pay of men in narrowly defined white-collar occupational skill levels generally exceeded earnings of their female counterparts, but the difference was smaller than other broader-based measurements indicate.

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- Women's earnings were closer to men's when viewed within individual establishments.
- Sizable female-male pay differentials existed within some establishments, but they were not consistently in men's favor.

These findings corroborate other research emphasizing the effect of occupational staffing patterns on female-male

Table 1. Salary levels of women as a percent of the salaries of men, and women's share of total employment in selected occupations, 1981

Occupation	Female-male pay ratio ¹	Female share of total employment
Professional:		
Accountant	83	23
Auditor	86	22
Attorney	78	15
Chemist	75	14
Administrative:		
Director of personnel	87	13
Job analyst	79	62
Buyer	80	20
Technical:		
Engineering technician	85	8
Drafter	82	13
Computer operator	92	34
Photographer	80	7
Clerical:		
Accounting clerk	82	92
Messenger	101	46
Purchasing assistant	74	85

¹Includes data only for workers identified by sex.

Table 2. Female-male pay and employment ratios, 1981

Occupational work level	Average monthly salary ¹	Female-male pay relationship ²	Female share of total employment
Professional:			
Accountant I	\$1,377	99	46
Accountant II	1,679	98	34
Accountant III	1,962	96	19
Accountant IV	2,402	95	11
Accountant V	2,928	90	5
Auditor I	1,364	98	36
Auditor II	1,651	97	27
Auditor III	2,033	92	21
Auditor IV	2,456	90	8
Attorney I	1,873	103	28
Attorney II	2,338	99	24
Attorney III	3,031	95	13
Attorney IV	3,738	94	9
Chemist I	1,508	96	38
Chemist II	1,757	94	29
Chemist III	2,120	93	15
Chemist IV	2,567	92	10
Administrative:			
Buyer I	1,350	96	52
Buyer II	1,689	95	23
Buyer III	2,100	92	9
Director of personnel I	2,321	101	21
Director of personnel II	2,933	94	10
Director of personnel III	3,574	90	7
Job analyst I	1,412	87	75
Job analyst II	1,525	92	85
Job analyst III	1,900	90	66
Job analyst IV	2,393	94	29
Technical:			
Engineering technician I	1,137	97	24
Engineering technician II	1,307	98	17
Engineering technician III	1,527	97	9
Drafter I	923	103	34
Drafter II	1,075	101	26
Drafter III	1,301	96	18
Drafter IV	1,611	94	8
Computer operator I	906	99	37
Computer operator II	1,049	102	49
Computer operator III	1,220	97	35
Computer operator IV	1,475	97	24
Computer operator V	1,733	92	17
Photographer II	1,425	96	6
Photographer III	1,704	106	5
Clerical:			
Accounting clerk I	798	94	95
Accounting clerk II	953	89	94
Accounting clerk III	1,121	89	91
Accounting clerk IV	1,407	84	82
Purchasing assistant I	1,002	93	95
Purchasing assistant II	1,278	87	84
Messenger	783	101	46

¹Includes data for workers not identified by sex.
²Includes data only for workers identified by sex.

pay differentials; that is, for the jobs and types of establishments studied, overall disparities in earnings between women and men appear to be more the result of differences in occupational employment and in advancements within individual occupations than of pay differences within narrowly defined job categories. Moreover, these staffing patterns have changed dramatically over the last decade.

Chart 1 traces the employment of women during the 1970's

in four relatively high-paying professional occupations covered by the PATC survey. Given the influence of seniority on progression within occupations, growth in women's employment in the experienced work levels has not been as noticeable as at the entry level. For example, in 1981, 46 percent of entry-level accountants were women, up from 14 percent in 1970; at the experienced level (III), the corresponding figures were 19 percent in 1981 and 4 percent in 1970. (Note, however, that the rate of increase in women's employment was, in fact, greater at the experienced level.)

Growth in the employment of women in the professions reflects the increased number of women who have college or advanced degrees and have combined work with family responsibilities. In 1970-71, about 110,000 more bachelor's degrees were conferred on men than on women; in 1980-81, this gap narrowed to about 4,600.² Married women ages 25 to 34 triggered much of the increased labor force participation of women. Moreover, 70 percent of married women with college degrees were either employed or looking for work in 1981; 10 years earlier, the ratio was 50 percent.³

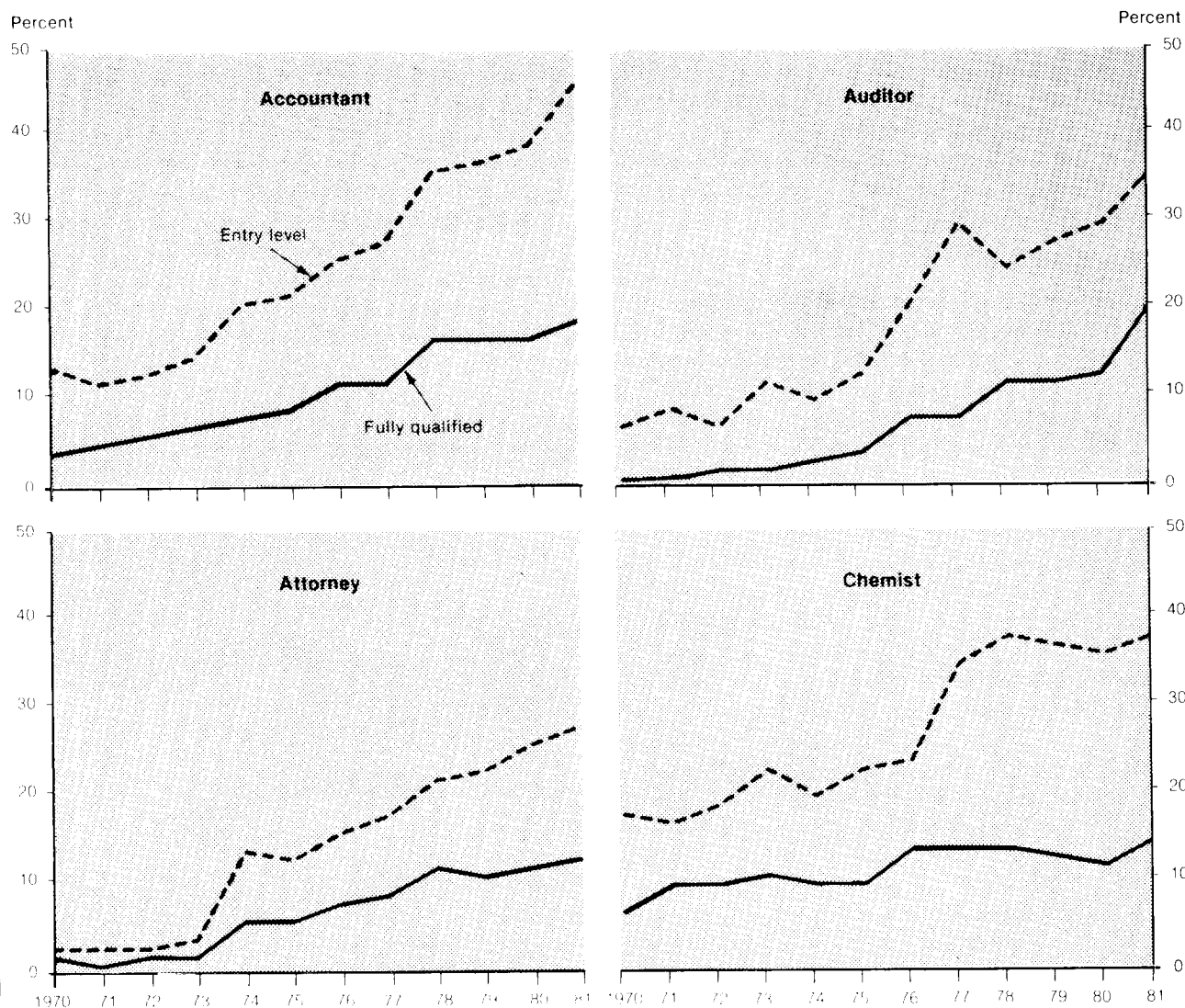
The PATC survey

Findings from the PATC survey, despite certain limitations noted below, provide an opportunity to analyze female-male occupational earnings differences. They provide the kind of detail that separates entry-level, experienced, and senior-level positions within an occupation to control for differences in skill levels, duties, responsibilities, and other job-related factors which help identify "equal work."⁴ Also, the survey obtains data from a sample of establishments, thereby permitting analysis of occupational pay relationships both within individual establishments and among establishments. Because the survey was not designed to compare earnings of women and men, it does not collect information on the reasons for female-male pay differences.

The PATC survey was primarily designed to permit comparisons of occupational pay rates in the private sector with those of the Federal Government.⁵ BLS conducts the survey, but the occupations and coverage specifications, such as establishment size and the private sector industries to be included, are determined by the President's Pay Agent—a tripartite entity consisting of the Secretary of Labor and the Directors of the Office of Management and Budget and the Office of Personnel Management.

The March 1981 PATC survey covered 96 work levels in 23 occupations.⁶ The industrial coverage and minimum size establishment were as follows: manufacturing, 100 or 250 employees; transportation, communications, electric, gas, and sanitary services, 100 or 250 employees; mining and construction, 250 employees; wholesale trade, 100 employees; retail trade, 250 employees; finance, insurance, and real estate, 100 employees; and selected services, 50 or 100 employees.

Chart 1. Women's share of entry level and fully qualified level of employment in selected professional occupations, 1970-81



NOTE: Entry level (I) employees are recent college graduates, fully qualified (level III) employees are experienced nonsupervisory staff.

The relatively small group of occupations surveyed, therefore, are not representative of all occupations, and the medium to large size establishments sampled do not statistically represent those employing under 100 workers or those in industries not covered, such as health and educational services. Information on occupational earnings of women and men working in establishments smaller than those covered by the PATC survey is included in BLS area wage surveys and industry wage surveys.⁷

Each occupational work level represents the type of duties and responsibilities in private industry that are comparable with those of Federal white-collar employees performing

the same level of work. The information on occupational pay relationships between women and men, however, is limited by two factors: many of the jobs surveyed are overwhelmingly populated by either women or men and collection of earnings data by sex is becoming increasingly difficult as such identification of individual workers is often absent from payroll records. Because of these factors, this analysis of female-male earnings differences was restricted to PATC work levels (1) having data identifiable by sex for at least 80 percent of the workers;⁸ (2) having each sex account for at least 5 percent of the workers; and (3) having a minimum of 50 establishments provide pay data for both men and

women when pay comparisons were made within establishments.

The analysis followed a sequential approach that provided some indication of the relative importance of staffing patterns and pay factors in explaining the overall pay differences between women and men.⁹ Average earnings of women and men were compared in a given occupation (for example, accountant); within a narrowly defined skill level of an occupation (for example, entry-level accountant); and within establishments, again using narrowly defined skill levels of an occupation.

Earnings differences

Table 1 presents findings on female-male earnings differences for 14 of the 23 PATC survey occupations. In only one occupation, messenger, did women average more than men. The lowest pay ratios were for purchasing assistants and chemists—where women averaged 74 and 75 percent of their male counterparts' pay. For other occupations, female-male pay relationships ranged from 78 to 92 percent. The data show no correlation between women's share of total employment and female-male pay ratios within occupations. For example, messenger, the occupation with the highest sex earnings ratio, and purchasing assistant, the occupation with the lowest, both ranked among the four highest occupations with respect to female employment.¹⁰

When comparisons are limited to work levels within occupations, relative earnings of women move closer to those of men: 43 of 48 female-male pay ratios reach 90 percent or more. (See table 2.) Thus, the greater earnings disparity shown in table 1 largely reflects an uneven distribution of men and women among the work levels of the occupation—that is, different staffing patterns. For example, a higher percentage of women than men are classified below the experienced level (III) of the four professional occupations surveyed. The following tabulation shows the percent of women and men in both entry and developmental level occupations in 1981:

	Women	Men
Accountants	59	28
Attorneys	60	30
Auditors	60	40
Chemists	47	16

Table 2 also shows the share of female employment in each work level. Consistently, the share for women was smallest at the highest levels of the occupation and, except for two occupations, was largest at the lowest levels. Salaries, of course, increased progressively from bottom to top.

The data in tables 1 and 2, however, are influenced by the distribution of women and men among establishments with differing pay scales. Table 3 eliminates these disparities by focusing on wage relationships within individual establishments with both women and men in the same occupa-

tional work level.¹¹ It displays the range of female-male pay ratios developed for such establishments, the frequency with which these ratios are at or near 100, and the tendency—particularly in professional and administrative jobs—for the percentage of establishments with low pay ratios to increase at the higher levels of an occupation. For example, among entry-level accountants (I), women averaged less than 85 percent of men's pay in 2 percent of the 260 establishments employing both women and men in the job. At the senior accountant level (V), 13 percent of 75 establishments had female-male pay ratios under 85. At the upper extreme, 7 percent of the establishments reported entry-level female accountants averaging at least 110 percent of their male counterparts; at the senior accountant level, 4 percent of the establishments had ratios of 110 or higher.

Table 3. Average salary relationship of women and men employed in the same job and establishment, selected occupational work levels, 1981

Occupational work level	Number of establishments	Percent of establishments with average female-male pay ratio of—						
		Under 85	85 to 89	90 to 94	95 to 99	100 to 104	105 to 109	110 and over
Professional:								
Accountant I	260	2	5	16	30	29	11	7
Accountant II	338	5	8	17	27	26	12	6
Accountant III	417	10	12	19	25	16	11	6
Accountant IV	220	11	11	24	25	16	7	6
Accountant V	75	13	21	25	23	9	4	4
Auditor I	58	—	3	10	34	29	12	10
Auditor II	91	3	10	19	29	19	12	9
Auditor III	104	10	14	13	35	13	10	5
Attorney II	67	9	4	25	18	22	12	9
Attorney III	68	9	12	24	22	22	7	4
Chemist I	51	—	10	27	27	22	8	6
Chemist II	92	5	4	22	29	26	9	4
Chemist III	93	6	11	19	33	17	6	6
Chemist IV	71	8	18	20	28	20	3	3
Administrative:								
Buyer I	104	8	14	13	20	27	8	11
Buyer II	264	10	12	22	26	17	6	7
Buyer III	183	14	17	29	19	14	3	4
Technical:								
Engineering technician I	71	4	4	8	30	25	17	11
Engineering technician II	139	3	7	11	32	31	10	6
Engineering technician III	143	5	8	12	38	27	8	3
Drafter II	178	3	3	15	28	33	10	8
Drafter III	233	4	6	16	33	24	11	6
Drafter IV	192	3	8	15	28	35	8	4
Computer operator I	93	1	1	18	22	35	11	12
Computer operator II	178	1	5	12	24	31	11	16
Computer operator III	403	4	6	13	28	29	10	10
Computer operator IV	243	5	8	17	29	25	9	6
Clerical:								
Accounting clerk I	95	5	6	11	18	22	23	15
Accounting clerk II	322	5	3	10	29	25	15	14
Accounting clerk III	319	5	5	14	23	29	12	11
Accounting clerk IV	212	4	7	13	26	30	13	7
Messenger	204	3	6	12	25	30	9	13

NOTE: This table is limited to establishments employing both women and men in the same occupational work level. For each establishment and work level studied, mean salaries were computed separately for women and for men. The mean for women was then expressed as a percent of the corresponding mean for men. Because of rounding, sums of individual items may not equal 100.

An earlier BLS study, based on area wage survey results, also found considerable diversity among establishments with respect to female-male pay differences, but the extent of these differences varied by industry division and geographic region.¹² (The PATC survey sample is not designed to permit analysis of industrial and regional differences.)

Range-of-rate pay systems partly explain why women and men may have different earnings, even when they work in the same establishment and in the same narrowly defined jobs. Such pay systems typically establish minimum and maximum pay rates for a company job and provide for periodic wage increases within this range based on an employee's length of service or job performance, or both.¹³ Employees in entry and developmental levels of professional jobs normally advance to higher work levels before pro-

gressing very far into their rate ranges. This pattern changes abruptly at the experienced levels, as opportunities for promotion diminish. Those who are not promoted progress through the rate range of their current job level, increasing the variation of earnings among incumbents.¹⁴ Because women tend to have less seniority than men in experienced work levels, they also tend to have lower pay levels when pay is related to years of service. Tables 2 and 3 illustrate this point by generally showing smaller female-male pay differences in lower work levels where seniority distinctions between men and women are less significant. More detailed consideration of this point is not possible here because the PATC survey does not collect information on workers' seniority.¹⁵ Other explanations for female-male pay differences also are beyond the scope of this analysis. □

—FOOTNOTES—

¹Statement before the Committee on Post Office and Civil Service, Subcommittee on Human Resources, Civil Service, and Compensation and Employee Benefits, U.S. House of Representatives, Sept. 16, 1982. Subsequently, this formed the basis for *The Female-Male Earnings Gap: A Review of Employment and Earnings Issues*, Report 673 (Bureau of Labor Statistics, 1982).

²See *Digest of Education Statistics* (Washington, National Center for Education Statistics, 1983).

³See *Educational Attainment of Workers, March 1981*, Bulletin 2159 (Bureau of Labor Statistics, 1983).

⁴See *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1981*, Bulletin 2808 (Bureau of Labor Statistics, 1981), pp. 36–71, for descriptions of occupations surveyed. Several of the occupations in the PATC survey have exclusions that help narrow their definitions. For example, the accountant definition does not cover workers whose principal or sole duties are designing or improving accounting systems or other nonoperating staff work, such as budget or financial analysis. In addition, workers without college degrees are almost always excluded from the professional jobs studied.

⁵5 U.S.C. 5301 (a) (3). The role of the PATC survey in the pay-setting process is described in George L. Stelluto, "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 18–28.

⁶PATC work levels are identified by Roman numerals, the higher the numeral the greater the duties and responsibilities. The number of work levels varies by occupation, ranging from 1 for messenger to 8 for chemist and engineer. For professional occupations, the first two levels are entry and developmental positions; the next two are for experienced workers; and higher levels generally are for supervisory or managerial positions.

⁷For a list of these surveys, see *Directory of Occupational Wage Surveys, 1974–79*, Report 609 (Bureau of Labor Statistics, 1980). Area wage survey findings are analyzed in John E. Buckley, "Pay differences between men and women in the same jobs," *Monthly Labor Review*, November 1971, pp. 36–39. Occupational earnings data by sex are also available from the household-based Current Population Survey, although without the detailed job definitions used in establishment-based occupational wage surveys. For an analysis of CPS data, see Nancy Rytina, "Earnings of men and women: a look at specific occupations," *Monthly Labor Review*, April 1982, pp. 25–31.

⁸The 1981 PATC survey reports salary data for nearly 1.8 million employees, about nine-tenths of whom were identified by sex. Those identified by sex were divided about evenly between men and women.

⁹Many studies employ multiple regression techniques in efforts to account for earnings differences between men and women. These analyses, often based on data collected in the Current Population Survey, use as explanatory variables such personal characteristics of workers as job tenure and educational attainment. A broadly defined occupational variable, along with such worker characteristics, is at times included in a wage regression. Nevertheless, except as modified by merit or length-of-service adjustments under rate-range systems, pay rates typically are set for individual jobs, rather than for the workers filling them. Worker characteristic variables thus may function in regression models both as proxies for occupation and as measures of productivity or skill differences among incumbents within a job. For a review of this research, see *Women, Work, and Wages: Equal Pay for Jobs of Equal Value* (Washington, National Academy of Sciences, 1981). See also Wesley Mellow, "Employer Size, Unionism, and Wages," in supplement to Vol. VI of *Research in Labor Economics* (Greenwich, Conn., JAI Press, 1983).

¹⁰For the 14 occupations, the coefficient of correlation between female-male pay relatives and female share of total employment was only -0.07 , which clearly is not statistically significant.

¹¹As in other BLS wage surveys, the PATC job descriptions are usually more generalized than those of individual establishments.

¹²See Buckley, "Pay differences."

¹³In the 1968–70 period—the latest time for which data are available—approximately two-thirds of the office workers in metropolitan areas were paid under range-of-rate plans. See John Howell Cox, "Time and incentive pay practices in urban areas," *Monthly Labor Review*, December 1971, p. 54.

¹⁴In some instances, a PATC survey occupational work level includes more than one company job title, for example, technicians and supervisors in an establishment that meet the survey job description for accountant IV. If rate ranges differ for company jobs matched to the same PATC work level, this adds to the potential for earnings variation.

¹⁵For a general discussion of seniority differences between men and women, see *Job Tenure and Occupational Change, 1981*, Bulletin 2162 (Bureau of Labor Statistics, 1983).