# Investigating the differences in weekly earnings of women and men 

Studies report wide variances in the value of factors explaining the female-male earnings gap; standardization of BLS weekly earnings data shows that some of the gap is explained by age, education, occupation, and hours worked

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Studies seeking to identify and rank the most important reasons for the earnings disparity between men and women have proliferated in recent years. Although the many compendiums of such studies frequently emphasize different viewpoints-of business, government, or academia-they have one aspect in common: each reports an astonishingly wide variance in the explanatory power of the factors used in the studies. For example, in a summary of 16 studies published by various analysts between 1964 and 1979. Cynthia Lloyd and Beth Niemi show that the variables in these studies explained from little or none of the sex-earnings gap to as much as 71 percent. ' Such large differences arise mostly from the variables selected for analysis, the measure of earnings used (for example, hourly, annual), and the source of the data. In general, models employing only a small number of variables-for example, age, race. and educational attainment-explain far less of the earnings gap than those with many more variables. including occupational detail, hours worked, and several work experience items.

This article looks at sex-earnings differences using a relatively newer data series published by the Bureau of Labor Statistics. The information comes from the Current Popu-

[^0]lation Survey, conducted by the Bureau of the Census for the Bureau of Labor Statistics. The monthly survey includes data on how much full-time wage and salary workers usually earn per week, by race, age, education. occupation, hours worked, and several other characteristics. (See box.) Most of the analysis is based on a statistical technique called standardization. This technique permits us to examine each characteristic at the macroeconomic level, and then to estimate what the earnings of women would be if. for each characteristic, the distribution of women had been the same as that for men, and all other characteristics remained unchanged.

In the most aggregate terms, median usual weekly earnings of full-time workers were $\$ 309$ in 1982. (See table 1.) With a median of $\$ 241$, women earned 65 percent as much as men (\$371). The following discussion illustrates how part of this 35 -percent gap is explained through standardizations by age, education, occupation. industry, and hours of work. Also, discussed briefly is the possible effect of labor force interruptions on male-female earnings differences.

## Age, education account for small amount

The age-earnings profile for women peaks at younger ages than for men. Median usual weekly earnings of women peak at $\$ 261$ in the 25 -to- 34 age group: peak earnings of men are attained in the $35-t 0-44$ category at a figure $\$ 67$ higher
than the median for men 25 to 34 . (See table 1.)
Among teenagers, the female-to-male earnings ratio for full-time workers was 87.6 percent-slightly higher than that for 20 - to 24 -year-olds, and considerably higher than that for other age groups. However, a large number of young workers have earnings at or near the prevailing minimum wage $(\$ 3.35$ per hour in 1982 , or $\$ 134$ for a 40 -hour workweek). About one-third of the male teenagers and nearly half of the female teenagers earned under $\$ 150$ a week in 1982. The sex-earnings ratio for workers 25 to 34 was 72 percent and was even lower for the groups comprising 35 to 64 -year-old workers.

The age distribution of women who work full time is slightly different from that of men. The women tend to be a bit younger; nearly 20 percent were under 25 . compared to 16 percent for men in 1982. However. age apparently does little to explain earnings differences between the sexes. The following shows the actual age distribution of women in 1982, their distribution if they had the same age profile as men, and median weekly earnings in both cases:

|  | Achal | Redistribuled |
| :---: | :---: | :---: |
| Age 16 and over: |  |  |
| Total, (thousands) | 28.267 | 28.267 |
| Percent | 100.0 | 100.0 |
| 16 to 19 | 3.4 | 3.1 |
| 20 to 24 | 16.1 | 13.2 |
| 25 to 54 | 68.6 | 71.0 |
| 25 to 34 | 31.5 | 31.6 |
| 35 to 44 | 21.2 | 22.5 |
| 45 to 54 | 16.0 | 16.9 |
| 55 and over | 11.9 | 12.7 |
| Median carnings | \$241 | \$ 243 |

If women who work full time had an age distribution identical to that of men, and all other characteristics had remained the same, the estimated median earnings (assuming the weekly earnings distribution for each age group did not change) would have been only $\$ 2$ higher in 1982, and the sex-earnings ratio would have edged upward by 0.5 percentage point, from 65.0 to 65.5 percent.

Differences in years of school completed also account for only a small amount of the earnings gap. If the distribution of years of school completed by employed women 25 and over had been the same as that for men. median earnings of women would have moved up by only $\$ 2$ and the sexearnings ratio also would have been raised by only 0.5 percentage point. (Age 25 and over is used in looking at educational attainment because a large number of the population 16 to 24 are still in school.)

## Occupations play a larger role

More of the earnings gap can be explained by the variations in the employment of women and men among occupations. Information by occupation is published from the CPS at three levels of detail. The least detailed in 1982 was the major group, or "one-digit"' level, with II categories.2

## Note on weekly earnings data

The Bureau of Labor Statistics has been collecting quarterly and annual average data on the usual weekly carnings of individuals and families by various demographic characteristics since the first quarter of 1979. These data have certain distinct advantages over other sources of earnings information. They are timely, in that quarterly reports with summary measures are issued about 1 month following the close of each quarter. The series can be tabulated by the exact number of hours reported as usually worked; hence, there is no need to make assumptions in order to estimate hours worked as is the case with the various sources on annual carnings. Of greater significance is the large sample that can be accumulated over the course of a year. Even though the question on weekly earnings is asked of only one-quarter of the monthly Current Population Survey (CPS) sample of some 60,000 houscholds each month. over the course of a year there are about 180.000 unduplicated records of the carnings for full-time workers. Such a data base permits detailed annual average tabulations. including. for example. the carnings of workers by sex for hundreds of occupations. For additional details on the CPS and the merits and limitations of the data on weekly carnings. see Earl F. Mellor. Technical Description of the Quartcrly Data on Weekly Earnings from the Current Population Survey. Bulletin 2113 (Bureau of Labor Statistics. 1982).

The next level of detail ("two-digit") had 40 occupational groups relevant to wage and salary workers. For example. professional and technical workers were divided into six groups and craftworkers into eight. The "three-digit" level of detail had 422 occupational titles applicable to wage and salary workers. However, many of these titles had too few sample observations to permit the estimation of reliable earnings medians, especially separately for men and women.

Among the 11 major occupational groups, there are large and longstanding differences between the sexes. Women remain underrepresented in some major groups and overrepresented in others. ${ }^{3}$ For example, in 1982, women accounted for about 6 percent of all craftworkers and 78 percent of all clerical workers. However, an analysis of earnings on the basis of only the major occupational groups does little to explain the female-male earnings gap. If women were distributed among the 11 major groups the same as men (with earnings in each group unchanged), their median earnings would have risen by $\$ 6$ to $\$ 247$. The earnings ratio in 1982 thus would have been 66.6 percent, closing the female-male gap by very little ( 1.6 percentage points).

Because there are both high- and low-paying jobs within major groups, it is important to know what jobs within each group are held by women. For example. among wage and salary workers, women actually are more likely than men to work in the professional and technical group ( 20 versus 17 percent) but are less likely to hold the higher paying jobs
within this group. On one hand, they account for only 5 percent of the engineers, 23 percent of the lawyers, and 22 percent of the physicians employed as wage and salary workers. ${ }^{4}$ (See table 2.) On the other hand, women make up very large shares of the lower paying professional and technical jobs- 94 percent of the registered nurses. 70 percent of the health technologists and technicians, 67 percent of teachers below the college level, and 65 percent of the social and recreation workers.

Another example is salesworkers, a middle-paying category in which women are somewhat underrepresented. About half the women in sales were sales clerks in retail trade. one of the lowest paying sales occupations. Only about onesixth of the men in sales worked in this category-more of them were sales representatives in wholesale trade. Large numbers of men were also employed as sales representatives in manufacturing; salesworkers, other than sales clerks. in retail trade; ${ }^{5}$ and as stock and bond sales agents-all relatively high-paying sales jobs.

As noted, the adjustment of the employment distribution of women to that of men yielded only a small ( 1.6 percentage point) increase in the sex-earnings ratio when major groups were used. However, the ratio moved up 5.1 percentage points to 70.1 percent when the redistribution method was applied to 40 two-digit occupations. In dollar terms, median earnings of women rose $\$ 19$ to $\$ 260$. The ratios would undoubtedly rise even higher if the very detailed three-digit occupations were redistributed. However. serious data constraints would complicate such an analysis, as there are many jobs on the list for which no. or very few. women (and, in some cases, men) were found in the CPS sample. Where the exercise can be applied on a more limited scalefor example, to the 13 categories of salesworkers-a marked narrowing is apparent. Overall, women in sales jobs earned only 55 percent as much as men in 1982; but, if women were distributed among the sales jobs in the same way as men, the ratio would jump 11 points to 66 percent.

Even at the finest level of detail for which the CPS data are available, women earn less than men in almost all occupations for which comparisons can be made. For most jobs, full-time usual weekly earnings of women were 60 to 80 percent as much as those of men. For some (for example. nurses, secondary school teachers, cashiers, postal clerks). the ratio was 85 percent or more.

It is important to note that the three-digit level of detail for occupations cannot take into consideration the wide range of full-time jobs which is found in each category. For example, under physicians, there are 85 specialties $^{6}$ (for example, interns and neurological surgeons) for which data are not collected and would not be statistically reliable if they were. For each three-digit occupation, there are numerous specialties with differences in skill levels, market demand for the jobs, and other variables not available from the CPS, but which affect the earnings of each. Obviously, earnings differences between men and women reflect these

Table 1. Median usual weekly earnings of full-time wage and salary workers, by selected characteristics, 1982 annual averages

| Characteristic | Median weekly earnings |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Total | Men | Women | Female-tomale ratio |
| Race and Hispanic origin |  |  |  |  |
| 16 years and over | \$309 | \$371 | \$241 | 65.0 |
| White | 317 | 382 | 244 | 63.9 |
| Black | 247 | 281 | 223 | 79.4 |
| Hispanic | 242 | 272 | 207 | 76.1 |
| Age |  |  |  |  |
| 16 to 24 years 16 to 19. | 214 167 | 231 177 | 194 <br> 155 | 84.0 87.6 |
| 20 to 24 | 226 | 246 | 205 | 83.3 |
| 25 to 34 | 319 | 364 | 261 | 71.7 |
| 35 to 44 | 359 | 431 | 260 | 60.3 |
| 45 to 54 | 350 | 428 | 254 | 59.3 |
| 55 to 64 | 336 | 409 | 246 | 60.1 |
| 65 and over | 257 | 299 | 210 | 70.2 |
| Years of school completed |  |  |  |  |
| 25 years and over | 335 | 403 | 257 | 63.8 |
| Less than 4 years of high schoo | 248 | 298 | 189 | 63.4 |
| Elementary 8 years or less.. | 230 | 262 | 176 | 67.2 |
| 1 to 3 years of high school | 268 | 327 | 197 | 60.2 |
| 4 years or more of high school | 354 | 424 | 273 | 64.4 |
| 4 years of high school | 308 | 381 | 238 | 62.5 |
| 1 to 3 years of college | 356 | 422 | 279 | 66. |
| 4 years or more of coilege | 444 | 525 | 351 | 66.9 |
| 5 years or more of college | 420 | 503 | 326 | 64.8 |
| Hours usually worked |  |  |  |  |
| 35 to 39 hours | 230 | 305 | 213 | 69.8 |
| 40 hours or more | 318 | 374 | 247 | 66.0 |
| 40 hours | 300 | 355 | 241 | 67.9 |
| 41 hours or more | 400 | 429 | 311 | 72.5 |
| 60 hours or more | 411 | 435 | 304 | 69.9 |

variables to some degree. ${ }^{7}$
Skill level. Some insight into sex-earnings differences by the skill level of a set of selected. narrowly defined occupations is provided in the National Survey of Professional. Administrative. Technical, and Clerical Pay (Patc) conducted by the Bureau of Labor Statistics. An accompanying article reports that earnings of women in the March 1981 PATC survey ranged from 74 to 101 percent of those of men. and. in all but two occupations. the ratio was under 90 percent. But, when the skill level (based on an examination of job duties and responsibilities) is taken into consideration. women earned at least 90 percent as much as men in almost every job and experience category. ${ }^{8}$ The Patc data do not indicate the number of years workers remain at a given skill level, that is. how long it takes to be promoted to positions with greater duties and responsibilities.

Distribution of earnings. The distributions from which the medians are calculated in the CPS cover a wide range of usual weekly earnings among workers in job groups for which there were a reasonably large number of sample observations. Regardless of the median value. there often were some workers earning under $\$ 200$ or even under $\$ 100$, and others earning hundreds of dollars above the median. For example, lawyers employed full time as wage and salary workers had median weekly earnings of $\$ 626$, but nearly 10 percent reported earnings below $\$ 300$. and roughly twice that percentage had earnings of $\$ 900$ or more. Among retail

Table 2. Weekly earnings of wage and salary workers who usually work full time in occupations employing 50,000 or more, by sex, 1982 averages

| Occupation | Total |  | Men |  | Women |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employed | $\begin{aligned} & \text { Weekly } \\ & \text { earnings }{ }^{1} \end{aligned}$ | Employed | Weekly earnings ${ }^{1}$ | Employed | $\underset{\text { Weekly }}{\text { earnings }}{ }^{1}$ earnings |
| Total ${ }^{2}$ | 70.546 | \$309 | 42,279 | \$371 | 28.267 | \$241 |
| Professional, technical, and kindred workers | 12,983 | 410 | 7.379 | 484 | 5,604 | $342$ |
| Accountants . . . . . . . . . . . . . . . . . | 968 | 404 | 585 | 468 | 383 | 325 |
| Architects | 58 | 460 | 53 | 504 | 5 | - |
| Computer specialists . . . | 699 | 492 | 499 | 529 | 199 | 401 |
| Computer programmers . | 386 | 444 | 263 | 478 | 123 | 382 428 |
| Computer systems analysts Computer specialists, n.e.c. | 246 66 | 539 611 | 181 55 | 568 636 | 65 11 | 428 |
| Computer speciaists, n.e.c. |  |  |  |  |  |  |
| Engineers | 1.471 | 586 | 1.391 | 592 | 80 | 479 |
| Aeronautical and astronautical engineers | 73 | 628 | 71 | 632 | 2 | - |
| Chemical engineers . . . . . . . . . . . . | 64 | 629 | 58 | 641 | 6 | - |
| Civit engineers . . | 187 | 558 | 184 | 561 | 3 |  |
| Electrical and electronic engineers | 382 | 599 | 366 | ${ }_{566}$ | 16 |  |
| Industrial engineers | 237 | 550 | 208 | 566 588 | 99 9 |  |
| Mechanical engineers Engineers, n.e.c. . | 2230 | 584 592 | 207 | 588 596 | 12 | - |
| Foresters and conservationists | 57 | 382 | 53 | 398 | 5 |  |
| Lawyers and judges . . . . . . | 306 | 633 | 238 | 660 | 68 | 502 |
| Lawyers ..... | 284 | 626 | 218 | 653 | 66 | 492 |
| Librarians, archivists, and curators | 159 | 349 | 35 | - | 124 | 340 |
| Librarians | 149 | 346 | 29 | 553 | 119 | 338 |
| Life and physical scientists | 279 54 | 519 399 | 225 31 | -553 | 54 23 | $\underline{378}$ |
| Biological scientists Chemists . . . . . | 54 +122 | 399 520 | 31 98 | 546 | 23 | - |
| Operations and systems research analysts | 232 | 508 | 159 | 547 | 73 | 447 |
| Personnel and labor relations workers | 390 | 430 | 196 | 530 | 194 | 354 |
| Physicians, dentists, and related practitioners | 358 | 507 | 279 | 530 | 80 | 421 |
| Pharmacists . . . . . . . . . . . . . . | 113 | 501 | 85 | 517 | 28 | - |
| Physicians, medical and osteopathic | 217 | 526 | 169 | 564 358 | 47 | 357 |
| Nurses, dietitians, and therapists . . | 1.215 | 357 | 123 6 | 358 | 1.092 | 357 |
| Dietitians.... | 55 | 295 | ${ }_{56}^{6}$ |  | 49 897 | $\overline{366}$ |
| Registered nurses | 952 207 | 365 333 | 56 62 | 363 348 | 897 145 | 328 |
| Health technologists and technicians | 499 | 316 | 153 | 365 | 346 | 298 |
| Clinical laboratory, technologists and technicians | 211 | 326 | 53 | 369 | 158 | 317 |
| Radiologic technologists and technicians Health technologists and technicians. n.e.c. | +82 | 325 293 | 29 66 | $\overline{362}$ | 53 97 | 299 |
| Health technologists and technicians. n.e.c. | 163 | 293 | 66 | 362 | 97 | 257 |
| Religious workers | 281 | 299 | 251 | 305 | 31 | - |
| Clergy ..... | 243 253 | 302 518 | 232 165 | 304 580 | 11 88 | 420 |
| Social scientists Economists | 253 | 518 581 | 165 117 | 580 638 | 88 44 | 420 |
| Economists Psychologists | 161 | 581 420 | 34 | - | 38 | - |
| Social and recreation workers | 414 | 311 | 146 | 359 | 268 | 291 |
| Social workers | 329 | 328 | 113 | 382 | 216 | 307 |
| Recreation workers | 85 | 234 | 33 | - | 52 | 203 |
| Teachers, college and university | 423 | 499 | 312 | 528 | 110 | 415 |
| Teachers, except college and university | 2.621 | 360 | 861 | 413 | 1.760 | 338 |
| Adult education teachers | 56 | 432 | 38 | $\overline{41}$ | 18 | 939 |
| Elementary school teachers. | 1.261 | 349 | 236 | 411 | 1.025 | 339 |
| Prekindergarten and kindergarten teachers | 156 | 284 | 3 | 711 | 153 | 283 |
| Secondary school teachers Teachers, except college and university, n.e.c. | 1.092 56 | 384 314 | 560 25 | 411 | 532 31 | 357 |
| Teachers, except college and university, n.e.c. | 56 | 314 | 25 | - | 31 |  |
| Engineering and science technicians | 1.022 | 379 384 | 843 | 394 | $\begin{array}{r}178 \\ \hline\end{array}$ | 307 |
| Chemical technicians | 928 | 384 365 | 69 23 | 400 | 23 46 | - |
| Electrical and electronic engineering technicians | 292 | 400 | 256 | 411 | 36 |  |
| Surveyors . . . . . . . . . . . . . . . . . . . | 58 | 336 | 58 | 336 | 0 | - |
| Engineering and science technicians, n.e.c. | 242 | 380 | 184 | 404 | 58 | 308 |
| Technicians, except health, engineering, and science | 171 | 411 | 132 | 465 | 40 | - |
| Airplane pilots | 56 56 | 588 296 | 54 28 | - 60 | 28 | - |
| Radio operators .............. vocational and educational counselors | - 142 | 402 | 72 | $\overline{459}$ | 69 | 348 |
| Vocational and educational counseliors |  |  |  |  |  |  |
| Writers, artists, and entertainers | 766 | 391 | 477 | 444 | 289 | 314 |
| Designers | 170 | 461 383 | 127 83 | 526 451 | 44 74 |  |
| Editors and reporters Painters and sculptors | 157 89 | 383 344 | 83 49 | $\stackrel{451}{-}$ | 74 40 | 325 |
| Public relations specialists and publicity writers | 112 | 411 | 60 | 550 | 52 | 341 |
| Writers, artists, and entertainers, n.e.c. . . . | 72 | 391 | 42 | $\overline{50}$ | 30 | - |
| Research workers, not specified ...... | 149 | 486 | 100 | 562 | 49 | - |
| Managers and administrators. except farm | 7.908 | 430 | 5.595 | 507 | 2.313 | 309 |
| Bank officers and financial managers | 710 153 | 471 | 445 | 574 | 264 | 336 |
| Buyers, wholesale and retail trade | 153 63 | 334 382 | 84 32 | 412 | 69 31 | 271 |
| Credit and collection managers |  |  |  |  |  |  |

See footnotes at end of table.

Table 2. Continued-Weekly earnings of wage and salary workers who usually work full time in occupations employing 50,000 or more, by sex, 1982 averages
[Numbers in thousands]

| Occupation | Total |  | Men |  | Women |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employed | Weekly earnings ${ }^{1}$ | Employed | Weekly earnings ${ }^{1}$ | Employed | Weekly earnings ${ }^{1}$ |
| Health administrators | 205 | \$461 | 104 | \$587 | 101 | \$394 |
| Inspectors, except construction and public administration | 107 | 420 | 94 | 429 | 13 | - |
| Managers and superintendents, building . . . . . . . . . . | 113 | 285 | 54 | 353 | 59 | 253 |
| Office managers, n.e.c. . . . . . . . . | 444 | 337 | 124 | 512 | 320 | 312 |
| Officials and administrators, public administration, ne.c. | 407 | 463 | 296 | 501 | 110 | 392 |
| Officials of lodges, societies, and unions . . . . . . . . . | 108 | 479 | 79 166 | 525 | 29 | - |
| Purchasing agents and buyers, n.e.c. | 254 424 | 421 274 | 166 237 | 494 309 | 88 187 | 319 233 |
| Restaurant, cateteria, and bar managers | 424 | 274 | 237 | 309 | 187 | 233 |
| Sales managers and department heads. retail trade | 321 | 302 | 193 | 386 | 128 | 227 |
| Sales managers, except retail trade . . . . . . . . . | 342 | 566 | 302 | 585 | 40 | - |
| School administrators, college . . | 119 | 505 | 78 181 | 547 | 41 | 338 |
| School administrators, elementary and secondary | 269 3.699 | 517 | 181 2979 | 566 518 | 87 720 | 338 312 |
| Managers and administrators, n.e.c. . . . . . . . | 3.699 | 463 | 2.979 | 518 | 720 | 312 |
| Salesworkers . . . . . . . . . . . . . . | 3.643 | 317 | 2.416 | 383 | 1.227 | 212 |
| Advertising agents and salesworkers | 103 | 344 | 52 | 449 | 51 | 286 |
| Insurance agents. brokers, and underwriters | 444 | 357 339 | 297 | 419 435 | 147 | 284 |
| Real estate agents and brokers . . . . . . . | 202 | 339 | 91 | 435 | 111 | 292 |
| Stock and bond sales agents | 150 | 549 | 116 | 642 | 34 | 315 |
| Sales representatives, manufacturing industries | 338 795 | 462 409 | 278 691 | 512 426 | 59 104 | 315 308 |
| Sales representatives, wholesale trade . . . . . | 795 1.020 | 409 188 | 691 420 | 426 239 | 104 600 | 308 167 |
| Sales clerks, retail trade . . . . . . . . | 1.020 | 188 | 420 | 310 | 43 | 167 |
| Salesworkers, except clerks, retail trade Salesworkers, services and construction | 376 181 | 298 346 | 122 | 408 | 59 | 252 |
| Salesworkers, services and construction | 181 | 346 | 122 | 408 | 59 | 252 |
| Clerical and kindred workers | 13.845 453 | 248 199 | 2.997 32 | 347 | 10.848 422 | 236 198 |
| Bank tellers. | 453 128 | 199 235 | 32 16 | - | 422 111 | 198 233 |
| Billing clerks Bookkeepers | 1.324 | 244 | 116 | 330 | 1.205 | 240 |
| Cashiers . | 720 | 176 | 112 | 196 | 608 | 172 |
| Clerical supervisors, n.e.c. | 262 | 345 | 76 | 474 | 185 | 313 |
| Collectors, billing and account | 71 | 260 | 26 | 277 | 46 182 | 213 |
| Counter clerks, except food | 243 | 225 | 62 | 277 | 182 | 213 |
| Dispatchers and starters, vehicle | 97 | 335 | 67 | 370 | 31 | $\overline{289}$ |
| Estimators and investigators. n.e.c. | 505 | 337 | 206 | 426 | 298 | 289 |
| Expediters and production controllers | 254 | 342 | 146 | 398 | 108 | 294 |
| File clerks . . . . . . . . . . . . | 180 | 220 | 23 | $\overline{383}$ | 158 | 217 |
| Insurance adjusters, examiners, and investigators | 185 56 | 300 240 | 79 7 | 383 | 106 50 | 236 |
| Library attendants and assistants | 569 | 240 | 209 | $\overline{423}$ | 30 | 236 |
| Mail carriers, post office . ... | 239 146 | 229 | 80 | 250 | 66 | 209 |
| Mailhandlers, except post office Messengers and office helpers | 71 | 204 | 58 | 212 | 14 | - |
| Office machine operators | 988 | 259 | 257 | 343 | 731 |  |
| Computer and peripheral equipment operators | 530 | 285 | 201 | 354 | 329 | 253 |
| Keypunch operators ... . . . . . . . . . . . . | 332 | 240 | 19 | - | 312 35 | 237 |
| Office machine operators. n.e.c. | 54 | 261 | 19 | - | - 164 |  |
| Payroll and timekeeping clerks | 203 | 275 420 | 39 175 | - 427 | 164 73 | 257 403 |
| Postal clerks . . . . | 248 | 420 | 175 | 427 | 73 | 403 |
| Receptionists | 442 | 207 | 9 | - | 433 | 206 |
| Secretaries. | 3.086 | 243 | 22 | - | 3.084 | 243 |
| Secretaries, legal | 151 | 285 | 1 | - | 150 65 | 285 |
| Secretaries, medical | 65 | 247 | ${ }^{0}$ | - | 65 2849 | 241 |
| Secretaries, n.e.c. . . . | 2.870 464 | 258 | 358 | 274 | - 106 | 221 |
| Shipping and receiving clerks Statistical clerks ....... | 323 | 271 | 67 | 341 | 255 | 256 |
| Stock clerks and storekeepers | 439 | 287 | 282 | 322 | 157 | 241 |
| Teachers aides, except school monitors | 145 | 164 | 9 | - | 136 | 162 |
| Telephone operators . . . . . . . . . . . | 237 | 269 | 16 | $\overline{-1}$ | 221 | 267 |
| Ticket, station, and express agents | 133 | 434 | 72 | 465 | 62 | 387 |
| Typists . . . . . . . . . . . . . | 691 | 227 | 22 | - | 670 | 227 |
| Miscellaneous clerical workers | 927 | 247 | 173 | 322 | 754 | 239 236 |
| Not specified clerical workers | 340 | 245 | 68 | 297 | 272 | 236 |
| Craft and kindred workers | 10.068 | 375 | 9.417 | 384 | 651 | 247 |
| Bakers . . . . . . . . . | 97 | 236 | 62 | 271 | 35 | - |
| Brickmasons and stonemasons | 87 | 392 | 86 | 395 | 1 | - |
| Bulldozer operators | 79 | 317 | 78 | 319 | 1 | - |
| Cabinetmakers . . . | 52 | 302 | 48 | - | 3 | - |
| Carpenters | 672 | 341 | 664 | 341 | 9 | - |
| Compositors and typesetters | 146 111 | 278 | 92 | 334 | 54 | 224 |
| Crane, derrick, and hoist operators | 111 | 420 | 110 | 421 | 1 | - |
| Decorators and window dressers | 69 | 221 | 27 | $\overline{4}$ | 42 | - |
| Electricians . . . . . . . . . . . | 538 | 432 | 528 | 434 | 10 | - |
| Electric power line and cable installers and repairers | 112 | 441 | 110 | 441 | 1 | - |
| Excavating, grading, and road machine operators, except buildozer | 257 | 351 | 253 | 351 | 4 | - |

See footnotes at end of table.

Table 2. Continued-Weekly earnings of wage and salary workers who usually work full time in occupations employing 50,000 or more, by sex, 1982 averages
[Numbers in thousands]

| Occupation | Tolal |  | Men |  | Women |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employed | $\begin{aligned} & \text { Weekly } \\ & \text { earnings }{ }^{1} \end{aligned}$ | Employed | Weekly earnings ${ }^{1}$ | Employed | Weekly earnings ${ }^{1}$ |
| Blue-collar worker supervisors, n.e.c. | 1.640 | \$422 | 1,448 | \$438 | 192 | \$263 |
| inspectors, n.e.c. . . . . . . . . | 133 | 408 | 117 | 414 | 16 | - |
| Job and die setters, metal | 70 | 358 | 68 | 364 | 2 | - |
| Machinists . . . . . . . | 466 | 371 | 451 | 375 | 16 | - |
| Mechanics and repairers | 2.801 | 345 | 2.740 | 346 | 61 | 318 |
| Airconditioning, heating, and refrigeration | 173 | 360 | 173 | 360 | 1 | - |
| Aircraft . . . . . . . . . . . . . . . . . . . | 123 | 431 | 117 | 435 | 7 | - |
| Automobile body repairers | 135 | 305 | 133 | 305 | 2 |  |
| Automobile mechanics . . | 778 | 307 | 772 | 308 | 6 | - |
| Data processing machine repairers | 75 | 429 | 70 | 433 | 6 |  |
| Farm implement ......... Heav equipment mechanics, including diesel | 50 901 | 269 366 | 50 889 | 269 367 | 12 | - |
| Heavy equipment mechanics, including diesel ....... Househoid appliance accessory installers and mechanics | 118 | 340 | 114 | 340 | 4 | - |
| Office machine . . . . . . . . . . . . . . . . . . . . . . . . | 75 | 373 | 70 | 379 | 5 | - |
| Radio and television | 71 | 338 | 65 | 346 362 | 6 | - |
| Miscellaneous mechanics and repairers | 215 | 361 | 208 | 362 | 7 | - |
| Millwrights | 91 | 458 | 90 | 460 | 1 | - |
| Painters, construction and maintenance | 250 | 294 | 240 | 298 | 11 | - |
| Plumbers and pipe fitters . . . . . . . . | 385 | 422 | 381 | 421 | 3 | - |
| Printing press operators. | 171 | 345 | 148 | 362 | 23 | - |
| Rooters and slaters | 67 | 306 | 66 | 308 | 5 |  |
| Sheetmetal workers and tinsmiths | 141 | 401 | 136 | 405 | 5 |  |
| Stationary engineers | 182 | 393 | 179 | 391 | 3 |  |
| Structural metal workers ..... | 73 307 | 449 | 272 | 451 | 35 | - |
| Telephone line installers and repairers | 101 | 396 | 94 | 398 | 6 | - |
| Tool and die makers . . . . . . . . . . | 150 | 437 | 148 | 439 | 2 | - |
| Operatives, except transport | 8.291 | 252 | 4.998 | 311 319 | 3.294 | 198 |
| Assemblers . . . . . . . . | 1.016 | 246 | 460 | 319 | 556 | 220 |
| Checkers, examiners, and inspectors, manufacturing | 699 | 284 | 326 | 360 | 372 | 235 |
| Clothing ironers and pressers | 878 | 169 | 22 128 | $\overline{249}$ | 65 | 156 |
| Cutting operatives, n.e.c... | 188 55 | 232 | 128 55 | 249 356 | 0 | 186 |
| Orywall installers and athers filers, polishers, sanders, and butfers | 109 | 234 | 78 | 256 | 32 | - |
| Garage workers and gas station attendants | 190 | 184 | 179 | 186 | 11 | $\overline{107}$ |
| Laundry and dry cleaning operatives, n.e.c. | 119 | 178 | 35 | - | 84 | 167 |
| Meat cutters and butchers, except manufacturing | 153 | 341 | 147 | 342 | 7 | - |
| Meat cutters and butchers, manufacturing .... | 81 | 279 | 54 | 329 | 27 | - |
| Mine operatives, n.e.c. | 212 | 432 | 210 | 432 | 2 | - |
| Mixing operatives ...... | 75 | 289 | 71 | 289 246 | $\stackrel{4}{4}$ | 204 |
| Packers and wrappers, except meat and produce | 508 117 | 218 | 212 | 246 | 296 | 204 |
| Painters, manufactured articies Photographic process workers | 117 69 | 258 245 | 98 33 | 279 | 19 36 | - |
| Photographic process workers | 69 | 245 | 3 | - | 3 |  |
| Precision machine operatives | 258 | 330 | 227 | 345 | 31 | - |
| Grinding machine operatives | 92 | 317 | 83 | 326 | 8 | - |
| Lathe and milling machine operatives | 80 | 362 | 74 | 371 | 35 | - |
| Punch and stamping press operatives | 86 | 282 | 50 | 317 | 35 | - |
| Sawyers | 100 | 228 | 87 | 230 | 13 |  |
| Sewers and stitchers | 634 | 166 | 32 | - | 602 | 165 |
| Shoemaking machine operatives ..... | 61 67 | 176 369 | 16 66 | 372 | 45 | - |
| Furnace tenders and stokers. except metal | 67 | 369 | 66 | 372 | 2 |  |
| Textile operatives | 251 | 213 | 93 | 232 | 158 | 198 |
| Spinners, twisters, and winders | 90 | 220 | 28 | - | 62 | 217 |
| Textile operatives, ne.c. ... | 107 | 204 | 49 | - | 59 | 176 |
| Welders and flame cutters | 561 | 345 | 531 | 351 | 31 | - |
| Machine operatives, miscellaneous specified | 1.098 | 288 | 809 | 322 | 289 | 213 |
| Machine operatives, not specified | 284 | 252 | 191 | 280 | 92 175 | 214 |
| Miscellaneous operatives | 549 151 | 248 300 | 374 97 | 287 348 | 175 54 | 193 250 |
| Not specified operatives . . . . . . . . . . . . . . . | 151 | 300 | 97 | 348 | 54 | 250 |
| Transport equipment operatives | 2.638 | 323 | 2.506 | 328 | 133 | 237 |
| Bus drivers | 168 | 332 | 123 | 370 | 46 | - |
| Delivery and route workers.... Forkifit and tow motor operators | 438 312 | 307 | 411 | 316 307 | 27 |  |
| Forkitt and tow motor operators | 38 90 | 240 | 85 | 244 | 6 | - |
| Truck drivers . . . | 1.519 | 330 | 1.495 | 331 | 24 | - |
| Laborers, except farm | 3.092 | 243 | 2.757 | 248 | 335 | 205 |
| Construction laborers, except carpenters' heipers | 611 | 254 | 595 | 253 | 17 | - |
| Freight and material handlers | 594 | 270 | 533 | 274 | 61 | 244 |
| Garbage coilectors | 61 | 233 | 60 356 | 232 | 1 | - |
| Gardeners and groundskeepers, except farm | 372 | 209 | 356 357 | 210 | 16 138 | $\overline{191}$ |
| Stock handlers . . . . . . . . . . . . . . . . | 495 | 222 205 | 357 108 | 237 203 | 138 19 | 191 |
| Vehicle washers and equipment cleaners Warehouse laborers, n.e.c. | 127 253 | 205 275 | 108 235 | 282 | 19 18 | - |
| Warehouse laborers, n.e.c. . . . . . . |  |  |  |  |  |  |

See footnotes at end of table.

Table 2. Continued-Weekly earnings of wage and salary workers who usually work full time in occupations employing 50,000 or more, by sex, 1982 averages
[Numbers in thousands]

| Occupation | Total |  | Men |  | Women |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employed | Weekly earnings ${ }^{1}$ | Employed | Weekly earnings ${ }^{1}$ | Employed | Weekly earnings ${ }^{1}$ |
| Miscellaneous laborers Not specified laborers | 164 227 | $\begin{array}{r} \$ 284 \\ 241 \end{array}$ | $\begin{aligned} & 145 \\ & 207 \end{aligned}$ | $\begin{array}{r} \$ 296 \\ 244 \end{array}$ | $\begin{aligned} & 19 \\ & 20 \end{aligned}$ | - |
| Service workers, except private household | 7.011 | 207 | 3.518 | 246 | 3.493 | \$180 |
| Cleaning service workers . . . . . . . | 1.624 | 211 | 1.104 | 231 | 520 | 175 |
| Lodging quarters cleaners | 105 | 142 | 6 | - | 100 | 140 |
| Building interior cleaners, n.e.c. | . 515 | 192 | 234 | 217 | 281 | $177$ |
| Janitors and sextons | 1.003 | 229 | 864 | 234 | 140 | 195 |
| Food service workers | 1.960 | 168 | 796 | 192 | 1.164 | 155 |
| Bartenders . . . . | 175 | 196 | 87 | 224 | 88 | 177 |
| Waiter assistants | 72 | 140 | 62 | 140 | 10 | $\overline{156}$ |
| Cooks . . . . . | 724 | 180 | 386 | 205 | 338 | 156 |
| Dishwashers | 105 | 140 | 81 | 141 | 24 | 13 |
| Food counter and fountain workers | 98 | 145 | 25 | 22 | 73 448 | 143 |
| Waiters . . . . . . . . | 531 256 | 158 169 | 83 | 229 182 | 448 185 | 149 164 |
| Food service workers, n.e.c. . . | 256 | 169 | 7 | 182 | 185 |  |
| Health service workers | 1.410 | 200 | 163 | 222 | 1.248 | 198 |
| Dental assistants . | 95 | 202 | 2 | - | 93 | 201 |
| Health aides, except nursing | 218 | 219 | 30 118 | 211 | 189 | 216 |
| Nursing aides, orderlies, and attendants | 826 | 182 255 | 118 12 | 211 | 708 255 | 179 253 |
| Practical nurses | 268 | 255 | 12 | - | 255 | 253 |
| Personal service workers | 662 | 202 | 211 | 251 | 451 | 188 |
| Attendants, recreation and amusement | 88 | 197 | 55 | 222 | 33 | - 141 |
| Child care workers . . . . . . . . . . | 92 | 148 | 10 | - | 82 | 141 |
| Hairdressers and cosmetologists | 184 | 199 | 24 | - | 160 | 194 |
| Housekeepers . ....... | $\begin{array}{r}132 \\ \hline 355\end{array}$ | 221 | $\begin{array}{r}48 \\ \hline 1245\end{array}$ | 338 | 84 | 193 |
| Protective service workers. | $\begin{array}{r}1.355 \\ \\ \hline 18\end{array}$ | 331 | 1.245 | 338 | 110 | 254 |
| Firefighters | 218 | 393 | 216 | 393 | ${ }_{6}^{2}$ | $\overline{241}$ |
| Guards | 561 | 241 | 494 | 240 | 66 | 241 |
| Police and detectives | 487 | 405 | 455 | 409 | 32 | - |
| Sheritfs and bailiff . | 75 | 321 | 68 | 336 | 7 | - |
| Private household workers | 301 | 111 | 10 | - | 291 | $111$ |
| Child care workers . . | 125 | 88 | 1 | - | 124 | $\begin{array}{r} 83 \\ 127 \end{array}$ |
| Housekeepers ..... | 60 111 | 128 127 | 2 | - | r 58 | 127 |
| Cleaners and servants . . . . . . . . . . . . | 111 | 127 | 6 | - | 105 | 128 |
| Farm workers | 765 | 190 | 686 | 192 | 79 | 174 |
| Farm laborers, wage workers | 696 | 184 | 623 | 185 | 74 | 170 |

Farm laborers, wage workers
${ }^{1}$ Excludes earnings from self employment.
${ }^{2}$ Includes data for occupations not shown.
Nore: n.e.c. $=$ not elsewhere classified. Dashes indicate earnings not shown where base is less than 50.000
sales clerks, with a median of $\$ 188$, a small proportion (about 1 percent) reported earnings of $\$ 900$ or more. but a much larger proportion ( 81 percent) had earnings under $\$ 300$ and some ( 29 percent) were under $\$ 150$.

As shown in table 3, 1 of 3 full-time wage and salary female workers earned under $\$ 200$ a week, compared to 1 of 8 men. For most of the major occupational groups. women were 2 to 5 times as likely as men to earn under $\$ 200$. Only for the three lowest paying groups was the ratio at or below 2. At the upper end of the earnings distribution. men were at least twice as likely as women to earn $\$ 500$ or more for each of the major groups.

The data thus show that differences by sex are greater at the extremes of the earnings scale than a comparison of medians alone suggests. These large differences persist even among the detailed occupations. In each of the 10 lowest paying and the 10 highest paying occupations in which 50,000 or more of each sex were employed. women were far more likely than men to earn under $\$ 200$ and far less
likely than men to earn $\$ 500$ or more. However, among the lowest paying occupations. the proportion of women to that of men earning under $\$ 200$ generally was lower than was the case among the higher paying occupations. This may reflect. as with teenagers. some effect of the minimum wage on large differences at the low end of the earnings spectrum.

Another way to look at earnings differences is to find the top decile of women's earnings and ascertain how much a woman must earn to be among the highest 10 percent of women in an occupation. and then estimate the proportion of men who are earning at least that level. For most major occupational groups, about 40 percent of the men earn at least as much as the highest 10 percent of women workers. (See table 4.)

Unfortunately, this type of analysis cannot be extended to the 10 lowest and highest paying of each of the detailed occupations because of the relatively few sample observations in the vicinity of the top decile boundary. (Observations tend to be clustered near average earnings values.)

However, an examination of the seven three-digit occupations in table 4 in which at least 250,000 workers of each sex were employed in 1982 produced results similar to those for the major groups.

## Job and occupational tenure

Questions on both job and occupational tenure were asked in a special CPS supplement conducted in January 1983. Job

| Table 3. Median usual weekly earnings of women and men, and percent earning under $\$ 200$ and $\$ 500$ or more in major occupations and in selected low-and high-paying occupations, tull-time workers, 1982 annual averages |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Occupation | Median usual weekly earnings | Percent under \$200 |  | Percent $\$ 500$ or more |  |
|  |  | Men | Women | Men | Women |
| Major occupation groups |  |  |  |  |  |
|  | \$309 | 12.7 | 32.7 | 26.7 | 6.0 |
| Professional and technical workers | 410 | 3.4 | 8.8 | 47.8 | 15.6 |
| Managers and administrators, except farm | 430 | 3.2 | 16.2 | 47.8 51.3 | 14.6 14.9 |
| Salesworkers | 317 | 11.8 | 45.8 | 32.6 | 7.5 |
|  | 248 | 13.0 | 30.3 | 16.5 | 2.4 |
| Craft and kindred workers $\qquad$ | 375 | 7.0 | 28.4 | 23.9 | 7.7 |
| Operatives, except transport | 252 | 16.7. | 50.7 | 10.1 | 1.0 |
| Transport equipment operatives | 323 | 14.4 | 35.3 | 16.6 | 6.8 |
| Nontarm laborers | 243 | 32.3 | 47.5 | 5.9 | 1.5 |
| Private household workers | 111 | ( ${ }^{\prime}$ ) | 90.7 | (1) | 0.3 |
| Other service workersFarm workers .... | 207 | 31.9 | 61.7 | 7.8 | 0.8 |
|  | 190 | 53.8 | 62.0 | 1.6 |  |
| Lowest paying occupations ${ }^{2}$ |  |  |  |  |  |
| Waiters Food service workers, n.e.c. | 158 | 36.1 | 77.5 | 6.0 | - |
|  |  |  |  |  |  |
|  | 169 | 60.6 | 75.1 | 2.8 | 0.5 |
| Cashiers Cooks, except private household | 176 | 52.7 | 66.3 | 5.4 | 0.2 |
|  | 180 | 47.4 | 76.3 | 0.3 | 2.8 |
| Nursing aides, orderlies, and attendants | 182 | 43.2 | 65.1 | 2.5 | 0.1 |
| Farm laborers Sales clerks, retail trade Building interior cleaners, n.e.c. Bartenders | 184 | 57.8 | 63.5 | 1.0 |  |
|  | 188 | 34.5 | 71.0 | 8.8 | 1.2 |
|  | 192 | 41.0 | 66.2 | 3.8 | - |
|  | 196 | 37.9 | 65.9 | 4.6 | - |
| Personal service workers | 202 | 33.2 | 56.1 | 7.6 | 3.1 |
| Highest paying occupations ${ }^{2}$ |  |  |  |  |  |
| Lawyers Engineers Computer systems | 626 | 2.3 | 3.0 | 74.8 | 48.5 |
|  | 586 | 0.4 | 1.3 | 71.3 | 45.0 |
| Computer systems analysts | 539 | - | 4.6 | 66.9 | 35.4 |
| Life and physicalscientists . |  |  |  |  |  |
|  | 519 | 4.0 | 11.1 | 59.1 | 31.5 |
| Social scientists | 518 | 1.8 | 2.3 | 61.8 | 35.2 |
| School administrators, elementary and secondary | 517 | 0.6 | 20.7 | 65.2 | 28.7 |
| Operations and systemsresearchers and |  |  |  |  |  |
|  | 508 | 1.3 | 2.7 | 61.6 | 28.8 |
| Physicians, dentists, and |  |  |  |  |  |
| related practitioners . | 507 | 1.8 | 7.5 | 55.2 | 37.5 |
| Teachers, college and university Bank officers and financial managers | 499 | 2.6 | 6.4 | 56.1 | 32.7 |
|  | 471 | 0.7 | 7.6 | 63.6 | 18.2 |
| ${ }^{1}$ Percent not shown where the base is under 50,000 workers. ${ }^{2} 0$ ccupations in which at least 50,000 of each sex are employed. Note: Dashes indicate zero or rounds to zero. |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

tenure differs from occupational tenure in that it refers to the time spent with the current employer, while the latter refers to the number of years in the same occupation without regard to the number of employers. Job tenure results showed that men had been with their current employer an average of 5.1 years, compared to 3.3 years for women. Men in each 10-year age group 35 years and over also had more seniority with their employer than did women. Up to about the mid-30's, job tenure does not differ significantly by sex. ${ }^{9}$

In a study of the effect of occupational tenure on the male-female earnings gap, Nancy Rytina found that the combination of potential work experience (age minus years of schooling minus 6), tenure in the same three-digit occupation, marital status, part- versus full-time employment, residence, and major occupation and industry group accounted for 25 percent of the wage difference between the sexes. ${ }^{10}$ However, occupational tenure alone accounted for 4 percent of the gap.

The CPS contains no information about the work history of an individual which may encompass several jobs of different but closely related titles and several employers. Clearly, differences in skills and other aspects of career development accumulated over the worklife may have more impact on current earnings than the length of time spent working in the current occupational field or for the current employer.

Several studies of work history have analyzed other measures of education, training, work history, and labor force attachment--most of which are not available from the CPSto explain wage differences by race and sex. For example, in an analysis of work history and other data, Mary Corcoran and Greg Duncan explained 44 percent of the hourly wage gap between white men and women. Tenure with the current employer prior to the present position, combined with the number of years of training completed in the present position, explained 23 percent of the gap. Although posttraining job tenure in the present position contributed to higher wages, it did not explain any of the wage gap between the sexes. An additional 8 percent of the gap was associated with the number of years of worklife that were at full-time jobs. ${ }^{11}$

## Industry

Data from a BLS survey of business establishments illustrate the extent to which employed women are concentrated in lower paying industries and underrepresented in the higher paying ones. ${ }^{12}$ In a ranking of 52 industries (from the July 1982 establishment survey), the apparel and other textile industries ranked first in female employment ( 82 percent) but ranked 50th in average hourly earnings. Conversely, the bituminous coal and lignite mining industry ranked 52nd in percentage of women employees ( 5 percent) but first in average hourly earnings.

Current Population Survey data amplify the above findings, showing that women are less likely than men to be employed in mining, durable goods manufacturing, trans-
portation and public utilities, and the Federal Governmentgroups in which women's earnings are relatively high. A redistribution of female employment to that of male employment among an all-inclusive list of 15 private industry groups and the three levels of government would raise the 1982 sex-earnings ratio 1.0 percentage point, or $\$ 4$. However, if the standardization exercise is done on a more detailed list of 46 industry groups in the private sector and 14 groups among government, the median usual weekly earnings of women would rise by $\$ 11$, narrowing the sexearnings ratio by 2.9 percentage points.

## Hours worked

To facilitate comparisons among groups, analysis in this article is restricted to full-time workers-those who usually work 35 hours or more per week. Even so, full-time earnings vary widely, depending on whether the worker is at the low or high end of the hours range. For example, full-time workers putting in fewer than 40 hours had median earnings of $\$ 230$ per week in 1982 . For those working 40 hours, the median was $\$ 300$, while those usually working 41 hours or more averaged $\$ 400$ a week. The fact that men work more hours explains some of the differential in weekly earnings. Among full-time workers, 24 percent of the men, compared to 10 percent of the women, usually worked more than 40 hours per week in 1982. Thus, men could be expected to earn more per week even if both sexes earned the same hourly rate. If the distribution of hours worked by women were the same as that of men, with women's earnings in each category of hours worked unchanged, median usual weekly earnings of women in 1982 would have been $\$ 253$, or 68.2 percent of those of men, instead of $\$ 241$ or 65 percent. In other words, the $\$ 12$ increase would represent 9.2 percent of the earnings gap between the sexes, or 3.2 percentage points.

Because some people may associate working more than 40 hours a week with the receipt of overtime pay, men may be expected to earn more per week than women as a result of such premium pay. However, the data indicate that premium pay for overtime work may not be a contributing factor to the $\$ 12$ disparity attributed to differences in hours usually worked. In fact, the opposite may be the case.

May 1978 is the latest date for which CPS data on both weekly earnings and the receipt of premium pay for working more than 40 hours are available. Among workers who put in 41 hours or more during the survey reference week, more than two-thirds of those who usually worked 41 hours or more did not receive a premium rate for their long workweeks. ${ }^{13}$ Among those usually working 35 to 40 hours, only about one-third did not receive premium pay. For both groups, those who did receive premium pay usually earned less per week than those not paid a higher overtime rate. This was true for both men and women.

An explanation for this apparent paradox is that higher paying jobs often are salaried, demand more weekly hours,
and are not covered by either collective bargaining agreements or the overtime provisions of the Fair Labor Standards Act. The data show that among those working 41 hours or more during the reference week who usually worked 41 or more hours, professional-technical workers and managersadministrators accounted for 14 percent of the population receiving premium pay, but 55 percent of the population not paid higher rates.
The numbers suggest that the effect on women's earnings as a result of their working fewer hours than men is brought about more because women are less likely to hold higher paying jobs which demand long workweeks than the fact that they are less likely to work overtime and receive premium pay. In support of this explanation is the fact that, for workers putting in 41 hours or more a week in May 1978, women were somewhat more likely than men (45 versus 42 percent) to receive premium pay.

## Labor force interruptions

The role labor force interruptions play in sex-earnings differences has been analyzed using data which are not available in the CPS. In 1974, Jacob Mincer and Solomon Polachek used data from the 1967 National Longitudinal Survey of Work Experience to suggest that because of depreciation and a shorter overall payoff period, workers who expect to interrupt their careers will have lower investments

| Table 4. Top decile earnings of men and women, and percent of men earning as much as the highest paid decile of women for major occupational groups and for selected occupations, full-time workers, 1982 annual averages |  |  |  |
| :---: | :---: | :---: | :---: |
| Occupation | Lower boundary of lop decile |  | Percent of men eaming at least as much as women's top decile |
|  | Men | Women |  |
| Major occupation groups |  |  |  |
| Total | \$688 | \$437 | 37 |
| workers | 848 | 561 | 37 |
| Managers and administrators. except farm | '900 + | 568 | 40 |
| Salesworkers | 790 | 440 | 40 |
| Clerical workers | 571 | 386 | 42 |
| Craft and kindred workers | 616 | 470 | 29 |
| Operatives, except transport | 502 | 338 | 43 |
| Transport equipment operatives | 569 | 445 | 24 |
| Nonfarm laborers | 448 | 355 | 25 |
| Private household workers | (2) | 355 197 | 25 12 |
| Other service workers | 469 | 295 | 38 |
| Farm workers | 315 | 285 | 14 |
| Selected occupations ${ }^{\mathbf{3}}$ |  |  |  |
| Accountants | 776 | 532 | 39 |
| Secondary school teachers | 637 | 567 | 18 |
| Sales clerks, retail trade | 482 | 290 | 37 |
| Assemblers | 477 | 362 | 40 |
| Cooks, except private household | 358 | 243 | 34 |
| Checkers, examiners, and inspectors | 540 | 380 | 45 |
| Bank officers and tinancial managers | ${ }^{1900}+$ | 597 | 46 |
| ${ }^{1}$ Earnings of $\$ 900$ or more. Decile boundaries are estimated using linear interpolation of $\$ 50$ - and $\$ 100$-wide intervals. Since the $\$ 900+$ interval is open-ended, the boundary cannot be estimated. <br> ${ }^{2}$ Decile boundary and percent not estimated where base is under 50,000 . <br> ${ }^{3}$ Occupations in which at least 250,000 of each sex are employed. |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

in human capital than those who expect no interruptions. ${ }^{14}$ In 1981, Polachek showed that if the cost of withdrawing from the labor force varied among occupations and lifetime labor force participation differs among individuals, an individual will choose occupations which result in the smallest atrophy penalty (depreciation and forgone appreciation) in his or her lifetime. ${ }^{15}$
Using data from the Panel Study of Income Dynamics, Mary Corcoran, Greg Duncan, and Michael Ponza found that even though women earned relatively lower wages when they returned to work than they had prior to dropping out of the labor force, they experienced a subsequent rapid wage growth (a rebound) such that the net long-term loss from dropping out is small. ${ }^{16}$ In addition, they found that depreciation does not differ significantly between "male" and "female" jobs, confirming research by Paula England, who, using data from the National Longitudinal Survey, found that neither the depreciation rate nor returns to work experience were correlated with the percent female in the current occupation. ${ }^{17}$ They also showed that there is enough mobility between "men's" and "women's" jobs to suggest that "the use of current occupation as a proxy for occupational history is inappropriate and may provide misleading information about whether job choice is conditioned by expectations about future work or whether experience garnered in 'female' jobs results in lower wage growth and less depreciation than experience garnered in "male' jobs."

## A recap and related issues

Theories such as human capital theory, dual labor markets, and comparable worth all encompass factors that have a bearing on earnings differences between men and women. As discussed, studies focusing on these theories show a great diversity of views and reveal an exceedingly wide variance in the explanatory power of their investigations. ${ }^{18}$ Using data from a relatively new bls earnings series published quarterly, I examined separately certain aspects of employment, and estimated how much the sex-earnings ratio would change if women were distributed in employment more like men. The following summarizes my findings:

|  | Female-male ratio. median weekly earnings, 1982 | Percentagepoint change |
| :---: | :---: | :---: |
| Actual | 65.0 | - |
| Redistributed by: <br> Age | 65.5 | 0.5 |
| Years of school (age 25 and over) | 64.3 | 0.5 |
| Occupation ............ | 70.1 | 5.1 |
| Industry ............... | 67.9 | 2.9 |
| Hours worked | 68.2 | 3.2 |

Although differences in age, years of school completed. industry, occupation, and hours worked each account for a relatively small part of the earnings gap between women and men, it would be inappropriate to accumulate these

Table 5. Median usual weekly earnings of men and women, full-time wage and salary workers, May 1967-78, and quarterly and annual averages, 1979-83

| Date | Median weekly earnings |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Total | Men | Women | Female-to-male ratio |
| May ${ }^{1}$ |  |  |  |  |
| 1967 | \$109 | \$125 | \$ 78 | 62.4 |
| 1969 | 121 | 142 | 86 | 60.6 |
| 1970 | 130 | 151 | 94 | 62.3 |
| 1971 | 138 | 162 | 100 | 61.7 |
| 1972 | 144 | 168 | 106 | 63.1 |
| 1973 | 159 | 188 | 116 | 61.7 |
| 1974 | 169 | 204 | 124 | 60.8 |
| 1975 | 185 | 221 | 137 | 62.0 |
| 1976 | 196 | 233 | 145 | 62.2 |
| 1977 | 211 | 252 | 156 | 61.9 |
| 1978 | 226 | 271 | 166 | 61.3 |
| 1979: |  |  |  |  |
| 1. | 238 | 290 | 182 | 62.8 |
| 11 | 242 | 295 | 183 | 62.0 |
| III | 243 | 298 | 187 | 62.8 |
| IV | 252 | 309 | 192 | 62.1 |
| Annual average | 244 | 298 | 186 | 62.4 |
| 1980: |  |  |  |  |
| 1. | 260 | 315 | 200 | 63.5 |
| 11 | 261 | 317 | 200 | 63.1 |
| III | 266 | 321 | 205 | 63.9 |
| IV | 277 | 334 | 211 | 63.2 |
| Annual average | 266 | 322 | 204 | 63.4 |
| 1981: |  |  |  |  |
| 1 | 283 | 342 | 220 | 64.3 |
| 11 | 284 | 343 | 221 | 64.4 |
| 111 | 287 | 345 | 224 | 64.9 |
| IV | 300 | 360 | 232 | 64.4 |
| Annual average | 289 | 347 | 224 | 64.6 |
| 1982: |  |  |  |  |
| 1. | 304 | 363 | 238 | 65.6 |
| 11 | 308 | 370 | 240 | 64.9 |
| III | 307 | 371 | 240 | 64.7 |
| IV | 316 | 379 | 248 | 65.4 |
| Annual average | 309 | 371 | 241 | 65.0 |
| 1983: |  |  |  |  |
| 1 | 319 | 385 | 252 | 65.5 |
| 11 | 320 | 383 | 253 | 66.1 |
| III | 320 | 388 | 251 | 64.7 |
| IV | 327 | 393 | 260 | 66.2 |
| Annual average | 322 | 387 | 254 | 65.6 |

'Data for $1967-78$ are not strictly comparable to those for later years.
Note: Data are not seasonally adjusted. Earnings data were not collected in 1968.
reductions. They may explain more or less than their sum depending on their interaction. Clearly, there is an overlapping of the individual parts. For example, a redistribution of women among occupations to close the 5.1 -percentagepoint gap due to occupational differences may also reduce some of the differences in both industry and hours worked as well as any from job or occupational tenure. Although statistical techniques have been applied to various human capital variables (education, on-the-job training, and so forth) using individual CPS records, they cannot establish precisely to what extent the differences in occupations are based on human capital factors alone, as opposed to differences caused by individual selections between higher and lower paying jobs-voluntarily or otherwise- and differences resulting from discrimination in hiring, advancement, and pay scales on the part of employers. The CPS contains no questions on the last factors. Moreover, many components of human capital are not available from either the CPS or other sample
survey data; indeed, some may be virtually impossible to measure.

If an occupation pays little simply because women constitute a large share of the total employed, one may expect the earnings of men employed in these occupations to be lower than those in which men predominate. A simple regression equation shows a weak inverse, but not statistically significant, relationship. The share of women in an occupation was associated with only 1.4 percent of the variance in men's earnings. ${ }^{19}$ Thus, this regression alone cannot suggest that employers pay less for certain jobs simply because women predominate in them.

A regression of women's median earnings on the percent employed in a specific occupation (done on 112 occupational titles with 50,000 women or more) does show a significant inverse relationship. The slope of the estimated regression line indicates that for each increase of 10 percent in the proportion of women in the occupation, median usual weekly earnings in 1982 would fall by $\$ 13$. The equation accounted for about 19 percent of the variance in women's earnings among these occupations. ${ }^{20}$ The relationship shows a correlation with, but not a cause for, women earning less than men.

## Recent trends

The overall median weekly earnings ratio of women to men employed full time did not change much between 1973 and 1978 , fluctuating mostly between 61 and 62 percent. (See table 5.) Among specific age groups, changes were mixed. The ratio of the medians rose for teenagers and for workers $25^{\circ}$ to 34 years and fell for those 45 to 54 and 55 to 64 . Apparent changes for the remaining groups were not statistically significant.

The overall ratio of female-to-male earnings did change significantly between 1979 and 1982. For workers 25 and over, the sex-earnings ratio rose from 61 to 64 percent, and it rose even after race and years of school completed were taken into consideration. Among whites age 25 and over, women gained relative to men for the educational groups with less than 4 years of college. Although the earnings of women with 4 years or more of college did not advance relative to men, they continued to have a higher sex-earnings ratio ( 67 percent) than those completing fewer years of school. Among blacks 25 and over, there were apparent gains in the earnings ratio for all educational groups between 1979 and 1982. However, because of their smaller sample size, only gains for those completing 4 years of high school or less are statistically significant. ${ }^{21}$

One possible explanation of the recent rise in the female-to-male earnings ratio could be that there has been a changed mix of occupations. That is, proportionately more women than men may have moved into higher paying jobs. The data, however, do not confirm this. If both women and men age 16 and over in 1982 were distributed among either the major or the two-digit occupational groups as their counterparts were in 1979, with earnings distributions within each occupational group the same as they were in 1982, the ratio of female-to-male earnings would have been 64.9 per-cent-not significantly different from the actual ratio.

Another factor which could affect the earnings ratio is change in the economic situation, particularly if the unemployment rate and hours worked by men are more sensitive to overall fluctuations than those of women. In such a case, the sex-earnings ratio would have risen as a result of recent recessions if more men than women lost higher paying jobs or had their hours reduced.
${ }^{\prime}$ Cynthia B. Lloyd and Beth T. Niemi. The Economics of Sex Diffierentials (New York, Columbia University Press. 1979). The table beginning on page 232 summarizes the results of these studies. most of which use multiple regression analysis.
${ }^{2}$ There were actually 12 such categories in the classification system used for the 1972-82 period, but there are so few farmers and farm managers employed as wage and salary workers that they are combined with the farm laborers and supervisors category.
${ }^{3}$ See Janet L. Norwood, The Female-Male Earnings Gap: A Review of Employment and Earnings Issues, Report 673 (Bureau of Labor Statistics. 1982), pp. 2 and 8; and Carol Boyd Leon, "Occupation winners and losers: who they were during 1972-80," Monthly Labor Review. June 1982. pp. 18-28.
${ }^{4}$ Because these proportions exclude the self-employed and unpaid family workers, they differ from those published in the Bureau of Labor Statistics' monthly publication, Employment and Earnings, which generally have as a universe all employed persons.
${ }^{5}$ Salesworkers in retail trade, excluding clerks, include such job categories as automobile salesworkers, estimators, comparison and investigative shoppers, and various sales consultants. See U.S. Bureau of the

Census, 1970 Census of Population. Classitied Index of Industries and Occuputions (Washington. U.S. Government Printing Office. 1971).
${ }^{6}$ 'See Clussified Index. pp. 0-7 and 0-8 for a list of these specialties.
${ }^{7}$ See Michael Finn. "The Earnings Gap: Discrimination or Economic Choices." a paper presented to the Conference on Comparable Worth. sponsored by The Eagle Forum Education and Legal Defense Fund. held in Washington. D.C.. October 1983.
${ }^{8}$ The job titles covered are accountant. auditor, attorney. chemist. director of personnel, job analyst, buyer, engineering technician. drafter. computer operator. photographer. accounting clerk. messenger. and purchasing assistant.
${ }^{9}$ U.S. Department of Labor. USDL News. 84-86. Mar. I. 1984.
${ }^{10}$ Nancy F. Rytina. "Tenure as a factor in the male-female earnings gap." Monthly Labor Review. April 1982, pp. 32-34.
"Mary Corcoran and Greg J. Duncan. "Work History, Labor Force Attachment, and Earnings Differences Between the Races and Sexes." Journal of Human Resources. Winter 1979, pp. 3-20.
${ }^{12}$ The Female-Male Earnings Gap. pp. 2 and 7.
${ }^{13}$ U.S. Department of Labor. Bureau of Labor Statistics, unpublished
data from the May 1978 Current Population Survey.
${ }^{14}$ Jacob Mincer and Solomon Polachek, "Family Investments in Human Capital: Earnings of Women," Journal of Political Economy, March/April 1974, pp. S76-S 108.
${ }^{15}$ Solomon Polachek, "Occupational Self-Selection: A Human Capital Approach to Sex Differences in Occupational Structure," The Review of Economics and Statistics. February 1981, pp. 60-69.
${ }^{16}$ Mary Corcoran, Greg J. Duncan. and Michael Ponza. "Work Experience, Job Segregation, and Wages." a paper prepared in 1982 for the National Academy of Science Conference on Job Segregation by Sex. Much of the discussion in this section is drawn from this paper.
${ }^{17}$ Paula England. "The Failure of Human Capital Theory to Explain Occupational Sex Segregation." Journal of Himmen Resources. Summer 1982, pp. 358-70.
${ }^{18}$ For an example of two compendiums espousing different viewpoints on comparable worth. see Donald J. Treiman and Heidi 1. Hartman. eds.. Women, Work, and Wages: Equal Pay for Jobs of Equal Value (Washington, National Academy Press. 1981): and E. Robert Livernash. ed.. Comparable Worth: Issues and Alternatives (Washington. The Equal Employment Advisory Council. 1980).
${ }^{19}$ The regression equation for the carnings of men is:

$$
\begin{aligned}
\mathrm{E}_{m}= & \$ 398.3-0.57 \mathrm{P}_{\mathrm{f}}, \\
(30.02) & (-1.55)
\end{aligned}
$$

where $E_{m, \prime}$ is the usual weekly earning of men. and $P_{t}$ is the percent of workers in each occupation who are women (numbers in parentheses are $T$-statistics.) The slope term is not significant at the 0.1 level. and the $R$ square is only 0.014 .
${ }^{21}$ The regression equation for the carnings of women is:

$$
\begin{aligned}
& E_{i}= \$ 333.9-1.28 P_{f} \\
&(21.04) \\
&(-5.11)
\end{aligned}
$$

where $E_{f}$ is the usual weekly earnings of women. and $P_{1}$ is the percent of workers in each occupation who are women. The slope term is significant at better than the 0.1 level. and the $R$-square is 0.192 . The universe of occupations is those in which 50,000 women or more were employed, either at the three-digit level of detail or the first lower level of detail having 50.000 or more female employees.
${ }^{2}$ See Earl F. Mellor. Techmical Description of The Quarterly Data on Weekly Earnings from the Current Population Survey, Bulletin 2113 (Bureau of Labor Statistics. 1982), for information pertaining to the merits and limitations of the carnings data from the CPS.

## A contemporary social problem

The logic of paying housewives for keeping the work force in good condition is not likely to appeal to either employers or to husbands. And certainly there are many hurdles to overcome. But. who knows, by the 21 st century employers may be contributing to a fund to pay for the services supplied to their workers by wives in the home as routinely as they contribute to social security funds, or unemployment accounts. It may be simply a matter of getting used to the idea. Such a system would require conceptualizing housewives as part of the labor force and counting their contribution to the gross national product. It would constitute a major shrinkage of the segment of social life for which the societal model was relevant. With what "unanticipated consequences." we cannot yet say. But if such a system were inaugurated, it would entitle employers to impose standards of performance, the implementation of which would no doubt be rejected by most housewives.
-Jessie Bernard
"Between Two Worlds: The Housewife,"
in Phyllis L. Stewart and Murial G. Cantor, eds., Varieties of Work
(Beverly Hills, Calif.,
Sage Publications, Inc., 1982), p. 89.


[^0]:    Earl F. Mellor is an economist in the Division of Employment and Unemployment Analysis. Office of Employment and Unemployment Statistics, Bureau of Labor Statistics.

