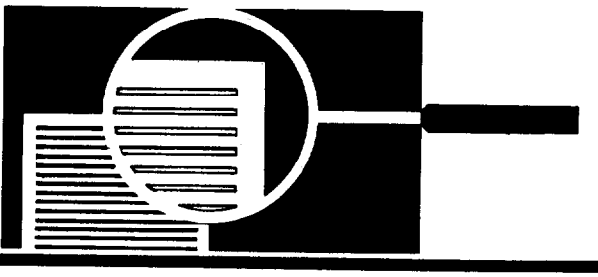
Research summaries



White-collar pay in goods-producing industries, March 1990

Michael A. Miller

Recent engineering graduates received an average annual salary of $31,412, while experienced top level engineers planning, organizing, and guiding highly complex engineering programs averaged $93,514, according to the Bureau of Labor Statistics' March 1990 survey of white-collar pay in private goods-producing industries.[1] Engineers, divided into eight work levels of skill and experience,[2] accounted for 77 percent of the workers surveyed in the larger occupational group designated "professional." The survey shows that skill and experience continued to be the primary determinants of white-collar pay. (See table 1.)

The effects of skill and experience on pay levels are evident for the three other broad occupational categories studied: administrative, technical, and clerical. The five levels of systems analysts were the largest cohort of administrative workers surveyed—29 percent. Salaries ranged from $34,883 per year for analysts working independently on routine projects (level I) to $69,520 for those who develop broad, unprecedented computer systems (level V).

Engineering technicians accounted for about half of the workers surveyed in technical support occupations. Engineering technicians I, the lowest of five work levels, perform simple, routine tasks under close supervision or follow detailed procedures; they averaged $19,674 per year. Average annual sala-

Michael A. Miller is a labor economist in the Division of Occupational Pay and Employee Benefit Levels, Bureau of Labor Statistics.

Table 1. **Average salaries in selected white-collar occupations, private goods-producing industries, March 1990**

Occupation and level	Number of employees[1]	Average annual salaries[2]
Professional and administrative		
Accountants I	9,534	$24,723
Accountants II	22,169	29,307
Accountants III	30,158	36,055
Accountants IV	18,387	45,013
Accountants V	6,097	56,792
Accountants VI	1,349	73,097
Auditors I	265	28,622
Auditors II	1,424	30,708
Auditors III	1,284	39,751
Auditors IV	581	48,999
Chief accountants I	953	43,353
Chief accountants II	1,097	56,947
Chief accountants III	631	72,068
Attorneys I	133	46,760
Attorneys II	616	51,560
Attorneys III	1,341	62,603
Attorneys IV	1,297	80,502
Attorneys V	879	97,060
Attorneys VI	375	119,670
Buyers I	4,787	23,935
Buyers II	17,618	29,917
Buyers III	17,800	38,742
Buyers IV	4,679	45,932
Professional and administrative—continued		
Computer programmers I	4,572	$27,661
Computer programmers II	15,948	30,584
Computer programmers III	11,411	34,425
Systems analysts I	12,452	34,883
Systems analysts II	21,359	40,836
Systems analysts III	14,359	48,651
Systems analysts IV	5,063	57,512
Systems analysts V	776	69,520
Systems analyst managers I	2,368	55,630
Systems analyst managers II	1,892	62,902
Systems analyst managers III	809	72,888
Systems analyst managers IV	92	87,388
Personnel specialists I	1,401	26,344
Personnel specialists II	7,434	28,229
Personnel specialists III	15,107	34,759
Personnel specialists IV	11,392	44,998
Personnel specialists V	3,938	56,570
Personnel specialists VI	423	71,262
Personnel supervisors/managers I	1,558	47,085
Personnel supervisors/managers II	2,212	60,072

See footnotes at end of table.

Table 1. **Continued—Average salaries in selected white-collar occupations, private goods-producing industries, March 1990**

Occupation and level	Number of employees[1]	Average annual salaries[2]
Professional and administrative–continued		
Personnel supervisors/managers III	1,442	$75,501
Personnel supervisors/managers IV	352	92,676
Directors of personnel I	924	45,032
Directors of personnel II	1,643	58,385
Directors of personnel III	905	74,831
Directors of personnel IV	260	97,381
Chemists I	2,686	28,798
Chemists II	7,478	33,191
Chemists III	8,433	40,863
Chemists IV	7,896	49,494
Chemists V	6,438	59,448
Chemists VI	2,538	73,114
Chemists VII	565	85,676
Engineers I	26,427	31,412
Engineers II	59,692	35,389
Engineers III	113,889	41,157
Engineers IV	134,983	49,195
Engineers V	86,458	59,460
Engineers VI	40,757	70,646
Engineers VII	10,264	81,597
Engineers VIII	1,839	93,514
Registered nurses I	2,153	26,043
Registered nurses II	3,873	30,910
Registered nurses III	86	39,974
Technical support		
Licensed practical nurses II	691	19,826
Engineering technicians I	2,991	19,674
Engineering technicians II	12,506	22,581
Engineering technicians III	22,517	26,868
Engineering technicians IV	28,492	32,245
Engineering technicians V	14,380	37,036
Drafters I	1,049	14,382
Drafters II	8,054	18,146
Drafters III	16,564	22,516
Drafters IV	19,104	27,959
Drafters V	9,480	34,158
Technical support–continued		
Computer operators I	2,079	$16,577
Computer operators II	11,859	20,220
Computer operators III	9,779	25,331
Computer operators IV	2,830	29,797
Photographers II	286	25,940
Photographers III	646	30,186
Photographers IV	307	36,242
Clerical[3]		
Accounting clerks I	7,077	14,638
Accounting clerks II	61,468	17,207
Accounting clerks III	31,994	20,706
Accounting clerks IV	11,172	25,843
File clerks I	2,840	12,905
Key entry operators I	20,524	16,141
Key entry operators II	10,591	18,925
Messengers	3,217	15,283
Personnel clerks/assistants I	1,207	15,368
Personnel clerks/assistants II	3,218	18,974
Personnel clerks/assistants III	2,718	22,507
Personnel clerks/assistants IV	1,133	26,366
Purchasing clerks/assistants I	2,812	15,784
Purchasing clerks/assistants II	7,862	19,025
Purchasing clerks/assistants III	3,404	24,641
Purchasing clerks/assistants IV	593	32,522
Secretaries I	20,541	19,850
Secretaries II	31,140	22,081
Secretaries III	57,385	24,683
Secretaries IV	25,273	28,266
Secretaries V	9,866	32,830
Typists I	4,362	16,276
General clerks I	4,161	11,522
General clerks II	22,705	15,027
General clerks III	30,026	18,368
General clerks IV	14,108	22,312

[1] Occupational employment estimates relate to the total in all establishments within scope of the survey and not to the number actually surveyed.

[2] Excludes premium pay for overtime and for work on weekends, holidays, and late shifts. Also excluded are performance bonuses and lump-sum payments of the type negotiated in the auto and aerospace industries, as well as profit-sharing payments, attendance bonuses, Christmas or yearend bonuses, and other nonproduction bonuses. Cost-of-living allowances and incentive payments, however, are included.

[3] To conserve resources and reduce respondent burden, data for six clerical occupations were largely collected as part of the Bureau's Area Wage Survey program. The six clerical occupations are accounting clerk, file clerk, key entry operator, messenger, secretary, and typist.

NOTE: The following occupational levels were surveyed but insufficient data were obtained to warrant publication: chief accountants IV and V; personnel supervisors/managers V; directors of personnel V; computer programmers IV and V; chemists VIII; registered nurses II specialist and registered nurses IV; licensed practical nurses I and III; nursing assistants I-IV; medical machine technicians I-IV; civil engineering technicians I-V; computer operators V and VI; photographers I and V; personnel clerks/assistants V; file clerks II and III; and typists III.

ries rose to $37,036 for engineering technicians (level V), who plan and conduct complex projects under general guidelines supplied by a supervisor or professional engineer.

Secretaries were divided into five pay levels and accounted for about three-eights of the clerical workers surveyed. Secretaries (level I) averaged $19,850 annually for independently performing routine office procedures. Secretaries (level V), who use initiative and judgment in performing nonroutine duties for executives of large establishments, averaged $32,830.

The survey also found that workers in different occupations, but in positions requiring similar skills and experience, were often paid comparable salaries. A relatively narrow spread in average annual salary (about 14 percent) separated the highest and lowest paid workers in the following eight professional and administrative jobs:[3]

Table 2. **Pay levels[1] for selected occupations in selected manufacturing industries, March 1990**

Occupation and level	All manufacturing	Durable goods						Nondurable goods	
		All durable goods	Fabricated metal products	Industrial and commercial machinery	Electrical and electronic equipment	Transportation equipment	Measuring instruments and related products	All nondurable goods	Chemical and allied products
Accountants III	$35,666	$35,582	$34,422	$35,673	$35,212	$36,927	$34,806	$35,836	$37,704
Personnel specialists III	34,698	34,903	31,290	34,272	33,657	38,406	35,600	34,305	37,325
Buyers II	29,807	29,337	29,141	28,712	29,114	29,715	30,054	32,073	33,543
Computer programmers III	34,300	33,843	33,147	33,013	34,918	33,964	33,411	34,975	36,069
Systems analysts II	40,661	39,963	38,448	38,881	41,473	40,456	39,601	42,414	43,167
Engineers III	40,911	40,633	39,618	40,875	41,107	40,311	40,965	43,219	43,952
Drafters III	22,354	22,108	22,569	21,526	22,361	22,018	22,772	25,499	27,286
Computer operators II	20,154	20,429	20,139	20,403	20,942	21,389	21,096	19,752	21,387

[1] Excludes premium pay for overtime and for work on weekends, holidays, and late shifts. Also excluded are performance bonuses and lump-sum payments of the type negotiated in the auto and aerospace industries, as well as profit-sharing payments, attendance bonuses, Christmas or yearend bonuses, and other nonproduction bonuses. Cost-of-living allowances and incentive payments, however, are included.

Work level	*Average annual salary level*
Attorney IV	$80,502
Personnel supervisor/ manager III	75,501
Director of personnel III	74,831
Accountant VI	73,097
Chemist VI	73,114
Chief accountant III	72,068
Personnel specialist VI	71,262
Engineer VI	70,646

However, pay for similar skill and experience across occupations was skewed by labor market demands, especially at entry level professional positions. For example, both beginning engineers and beginning accountants work under close supervision, perform routine tasks, and are just learning to apply knowledge and principles learned through schooling. But, the average annual salary for beginning engineers was $31,412, 27 percent higher than the $24,723 for entry level accountants.

Manufacturing industries

In 1990, average annual salaries in all goods-producing industries—mining, construction, and manufacturing—ranged from $11,522 for general clerks in level I to $119,670 for attorneys in level VI. Salary data were dominated, however, by input from manufacturing establishments. About four-fifths of the workers in each of the 28 occupations surveyed were in manufacturing firms.

When the data were compiled by industry, pay levels in establishments producing chemical and allied products were generally higher than in other manufacturing industries. In 40 of the 46 occupations for which data could be presented for the chemical and allied products industry, pay rates were higher than the average for all manufacturing industries. The pay advantage, however, was typically less than 10 percent. (See table 2 for selected examples.)

Survey methodology

The March 1990 survey of private goods-producing industries reflects changes introduced in 1986 to broaden the coverage of the Bureau's White-Collar Pay Survey (formerly known as the National Survey of Professional, Administrative, Technical, and Clerical Pay—PATC) to include more industries and smaller establishments.[4] Complementing the March 1990 survey of private goods-producing industries is the March 1989 survey of white-collar pay in private service-producing industries. Rotating industry coverage in alternate years allows the Bureau to obtain a broader scope of pay data within budgetary constraints. The 1990 survey findings were combined with update information from the service-producing establishments studied in 1989 and delivered to the President's Pay Agent in August 1990. These data were used to make recommendations for Federal salary levels, based on comparable jobs in the private sector.

A comprehensive report, *White-Collar Pay: Private Goods-Producing Industries, March 1990, Bulletin 2374* (Bureau of Labor Statistics, 1990), is available for $6.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 or from the Bureau of Labor Statistics, Publication Sales Center, P.O. Box 2145, Chicago IL 60690. The bulletin provides salary distributions by occupational work levels, tabulations by establishment size, and salaries by occupation work level for selected manufacturing industries. A separate appendix presents the combined data from the 1989 and 1990 surveys. □

Footnotes

[1] The White-Collar Pay Survey (formerly the National Survey of Professional, Administrative, Technical, and Clerical Pay—PATC) is conducted by the Bureau of Labor Statistics. Survey occupations used in Federal pay comparisons and survey coverage issues, such as establishment size and the private industries to be included, are determined by the President's Pay Agent—the Secretary of Labor and the Directors of the Office of Management and Budget and the Office of Personnel Management. The arrangement reflects the use of survey findings in the pay-setting process for Federal employees. The role of the survey is described in George L. Stelluto's, "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 19–28.

The 1990 survey covered establishments employing 50 workers or more.

[2] The survey occupations are divided into work levels based on duties and responsibilities. The number of work levels (designated by roman