

Occupational Shares in Growing and Shrinking Establishments

By Zachary Warren

The Bureau of Labor Statistics (BLS) Business Establishment Dynamics program indicates that there is a great deal of churning in the labor market. In fact, in the second quarter of 2005, gross job gains represented 7.2 percent of private employment while gross job losses represented 6.6 percent.¹ Hardly surprising, there is a lot of interest among economists and politicians in the kinds of jobs that are being created and destroyed. Data from the BLS Occupational Employment Statistics (OES) program, which collects detailed occupational information from 1.2 million establishments, can be used to see how individual establishments change their staffing over time.

For each establishment in its database, the OES survey collects information on the detailed occupation and the wages of each worker. Detailed occupational information on more than 80 million workers is collected over a 3-year survey cycle. Information on the employer includes the employer's industry, location, and size. This information is used to examine differences in staffing patterns between establishments that have experienced employment growth and establishments that have experienced employment decline over a 3- to 5-year period. Particularly of interest are changes in staffing that are a result of an expanding or a contracting workforce within an establishment. The matched data allow for a unique perspective on occupational employment—for example, by isolating differences in industry staffing patterns between growing and shrinking establishments and by showing which occupations are being hired in growing establishments and shed in contracting ones.

Methodology:

The study presented in this article was conducted with the use of microdata from the OES. Establishment records from the 2000–02 survey were matched to establishment records in the 2003–05 survey in order to identify establishments that responded to the instrument at two separate points in time. These records cover private-sector establishments from the

50 U.S. States and the District of Columbia, as well as State and local government-owned hospitals and schools.

From this dataset, three subsets were drawn: establishments with an increase in employment of at least 5 workers and at least 33 percent; establishments with a decrease of at least 5 workers and at least 33 percent; and establishments whose workforce changed by fewer than 5 workers or less than 33 percent, or both. The weighted² employment from these subsets was used to generate measures of employment by occupation, for expanding and contracting establishments.

Comparisons of initial staffing patterns

The first task carried out in the study was to use the 2000–02 data to compare the initial staffing pattern of establishments that subsequently shrink with the initial staffing pattern of establishments that subsequently grow, over the ensuing 3- to 5-year period.

Table 1 shows the share of employment in each occupation for establishments that are about to grow and for establishments that are about to shrink, as well as the difference of the two shares. The final column shows the occupational share for all establishments, whether they grew, shrank, or remained unchanged. For example, registered nurses accounted for 2.9 percent of total employment in growing establishments, but only 1.2 percent of employment in shrinking establishments. By contrast, establishments that grew employed relatively fewer flight attendants, who represented only 0.02 percent of employment in growing establishments, but 0.40 percent in shrinking ones.

One fact from table 1 that stands out is that many of the largest differences are in production worker occupations. This is likely an industry effect, because employment in goods-producing industries, which accounts for 73 percent of the employment of production workers, has declined from 23.6 million workers to 23.2 million workers over the 2000–02 period.³ Similarly, occupations with higher concentrations in the establishments that are about to grow tend to be those

¹ Data from BLS Business Employment Dynamics program.

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² Employment is weighted to all establishments that existed at the reference date of the sample (either May 2002 or May 2005) and not to those establishments which existed at both times.

³ Data from BLS Quarterly Census of Employment and Wages (QCEW).

prevalent in service industries: healthcare support workers, retail workers, restaurant workers, and protection workers. The nature of these occupations makes them less likely to be detrimentally affected by technological improvements or offshoring, so it stands to reason that they will be less common in establishments that are shrinking.

Examination over time

Examining the occupational differences between establishments that are about to grow and establishments that are about to shrink, as in the previous section, is useful in establishing the staffing characteristics of the two kinds of establishments, but it does not explain what is happening when those establishments actually change. For this kind of analysis, a comparison of staffing patterns within each group at different points in time is necessary. Such an analysis provides information not only on the types of jobs that are being created in expanding establishments and eliminated in shrinking ones, but also on the types of jobs that are retained or expanded when establishments are eliminating other jobs. In addition, an analysis of this sort yields information on jobs that growing establishments are retaining at lower rates.

Job changes in expanding establishments. To see which types of jobs are being created by growing establishments, it is useful to examine their staffing patterns at two different points in time. Table 2 shows the percentage of total employment in each occupation in expanding establishments at the time of the initial observation and during a period 3 to 5 years later. The columns in table 2, from left to right, represent the occupational title, the percentage of total employment in the 2000–2002 period, the percentage in the 2003–2005 data, the percentage point difference between the two, and the percent difference. The last column shows the total share from 2003–2005, which is the employment share in all establishments, shrinking, growing and unchanging. For example, in expanding establishments, retail salespersons represented 2.7 percent of total employment in the 2000–02 period, but 3.1 percent of total employment in the period from 2003 to 2005. At the other end of the scale, the share of total employment composed of food-service-related occupations is smaller in the later period than it is in the earlier one, except for “all other cooks,” for which the situation is reversed. This does not necessarily mean that employment shrank in these occupations; it simply means that the occupation either declined or grew at a slower rate than did other occupations in expanding establishments. In interpreting the tables, one should remember that occupations whose shares *increase* in growing establishments represent new hires, and occupations whose shares *decrease* in shrinking establishments represent separations. However, occupations whose shares *decrease* in growing establishments or *increase* in shrinking ones do not represent absolute changes; rather, they must be interpreted as changes relative to employment in other occupations.

Probably the most interesting feature of the table is that it shows what types of jobs were created when establishments expanded during the last few years. At the national cross-in-

dustry level, the most noticeable hires in growing establishments were in the material-moving occupations. For example, freight handlers, truckdrivers, packers, industrial truck operators, and supervisors of material-moving workers all saw large increases in employment. These increases likely are due to the fact that a growing establishment probably will be expanding its output and those occupations heavily involved in the distribution of that output would be among the occupations the establishment needs to grow. More technically, material-moving occupations are among those which scale most directly with expansion. These occupations also require human involvement and so are less likely to be outsourced to foreign locations or replaced by technology. Among growing establishments, another occupational group that saw growth was the construction occupations, especially carpenters, laborers, painters, and roofers. Although the construction occupations did not show as dramatic an increase as did other occupations, nearly all the construction occupations increased somewhat. It is quite possible that their growth was the result of industry trends, because the construction occupations are heavily correlated with the construction industry, which saw an increase in employment from 6.7 million to 7.3 million over this period from 2000–02 to 2003–05.⁴ Other occupations that showed a large increase in jobs created over this period were market research analysts, title examiners, and financial analysts.

Another interesting feature of this table is that it shows the type of occupations that either were cut back or remained stagnant in a particular establishment while the establishment hired workers into other occupations to achieve overall employment growth. Prominent on this list of occupations that were cut back or that stagnated is the number of food service occupations. From food service managers, to cooks, to waitresses, to dishwashers, the food service occupations all represented a much smaller percent of employment during the later period in establishments that grew. Other occupations that stagnated in growing establishments included registered nurses, licensed nurses, lawyers, and legal secretaries.

It is possible that these occupations declined in relative importance because, as with production workers, the industries that primarily employ them did not grow as fast as other industries. However, it may be that these support occupations are not directly related to the number of employees in the establishment. For instance, even if an establishment grows and thereby increases its output, it may not need more employees in its cafeteria, health unit, or legal department. These occupations do not scale directly with employment growth. As an example, counter to the rest of the material-moving occupations, conveyor operators did not show growth between 2000–02 and 2003–05. The reason is probably that conveyor operators are more like those in nursing occupations than they are like those in the other material-moving occupations, in the sense that they both grow in a stepwise fashion and only after large changes within the establishment, such as the

⁴ Data from QCEW.

opening of new conveyor lines or shifts or the hiring of a great number of new workers.

Job changes in contracting establishments. Table 3 gives the same information as table 2, but for contracting establishments rather than growing ones. In table 3, occupations that increased in relative importance were those which were retained or expanded in a given establishment while the establishment was cutting employment, and those which decreased in relative importance were the occupations from which workers were cut. Occupations that saw high rates of retention in establishments that lost employment from 2000–02 to 2003–05 included retail salespersons, accountants, and flight attendants. Occupations that were cut dramatically from establishments that contracted included food service workers, teacher assistants, and amusement attendants.

The occupations that exhibited sizable differences in percentage of employment in shrinking establishments were relatively small in terms of total employment. Private detectives, archivists, and roustabouts all saw very large increases in employment relative to their shares of employment, but the absolute increases in employment in those occupations were relatively small.

The occupational groups with the two largest changes were food service workers and retail sales workers. Both growing and shrinking establishments give a low priority to employing or retaining food service workers. One possible explanation for this frame of mind is that it is due to a decrease in employment in the food services industry, in which the majority of these workers are employed; however, this explanation is clearly incorrect, because the food services industry actually grew by more than 600,000 workers over the period from 2000–02 to 2003–05.⁵ Another possible explanation is that when establishments expand, they hire workers directly related to their core products and revenue streams—those which generate profits—and the hiring of support workers such as food service and clerical workers lags that of the more directly connected workers. Similarly, establishments that must reduce their workforce eliminate these support jobs before all others.

Nearly all of the retail occupations, but especially salespersons, sales representatives, cashiers, and retail managers, saw an increase in share between 2000–2002 and 2003–2005, likely reflecting the general trend toward service positions in the economy. The nature of retail establishments, as a service industry, also dictates that a minimum number of workers always are employed, as long as the business is in operation; and because retail workers are central to the activities of these establishments, they will be among the last to be removed. Note that all of the establishments represented in table 3, by definition, remained in business, but registered employment losses.

Industry-specific analysis

The overall effect of nationwide job churning may be a result of varying growth rates among different sectors of the

economy. Accordingly, this section examines specific industries in order to isolate staffing pattern changes from industry economic shifts. Although an exhaustive list of the 290 four-digit NAICS industries present in the data set examined in this analysis is beyond the scope of this article, a brief analysis of three industries is useful. These industries are typical of those displaying the largest changes and coming from a variety of sectors of the economy.

The primary statistic for this staffing pattern analysis is the percent of industry employment in an occupation. Although unable to capture absolute changes in occupational employment, this statistic illustrates the “reshuffling” of occupations in the average growing or shrinking establishment. A shrinking establishment, for example, may reduce employment in occupations across the board when making layoffs, but it is likely that certain occupations will feel the reductions more heavily than other, “stickier” occupations.

Tables 4 through 6 present staffing patterns for each industry in growing and in shrinking establishments. The occupations listed account for at least 1 percent of industry employment in at least one of the two periods surveyed.

Scheduled air transportation. One interesting industry among those with the largest differences between growing and shrinking establishments is the scheduled air transportation industry (NAICS 4811). The staffing pattern of this industry is shown in the last column of table 4, which is the percent of industry employment in all establishments, which is the percent of industry employment in all establishments. The industry, which is composed of commercial passenger and cargo flight operations, has seen significant changes in the last few years, and the composition of its average staffing pattern reflects those changes. In this industry, growing establishments showed a total increase in employment of 30.7 percent, while shrinking establishments showed a decrease of 24.1 percent.

Arguably the most interesting change related by the data is the stability of aircraft mechanics and service technicians. Shrinking establishments saw a significant increase in the percent of industry employment in this occupation, from 6.4 percent to 10.2 percent, while growing establishments saw a huge decrease in share, from 23.5 percent to 12.5 percent. These percentages suggest that aircraft mechanics, represent a vital, relatively stable component of this industry across employment expansions and reductions.

The industry-related occupations aircraft mechanics, flight attendants, airline pilots, and ticket agents make up a significant portion of employment in both expanding and contracting establishments. These four occupations accounted for 53.7 percent of current employment in the former establishments and 64.1 percent in the latter. In all establishments, the four occupations were 61.7 percent of employment in the scheduled air transportation industry. The percentages suggest that expanding air transportation establishments expand by diversifying their employment, whereas contracting establishments in the industry tend to retain employment in these core occupations. In the growing establishments, be-

⁵ Data from QCEW.

cause flight service increased, employment apparently rose significantly among pilots and flight attendants, suggesting that flight service increased in these establishments.

Employment services. Another industry that is often of great interest to economists is employment services (NAICS 5613), shown in table 5. This industry consists of employment agencies, temporary agencies, and professional employer organizations. In 2005, temporary agencies accounted for 70.4 percent of employment in the industry,⁶ a fact that explains the unusual staffing pattern in the last column of the table. In the employment services industry, growing establishments showed an increase in employment of 126.4 percent, while shrinking establishments exhibited a decrease of -49.7 percent. Together, the two percentages indicate that the industry is more volatile than most.

One striking feature of table 5 is the large increase it shows in the relative employment of team assemblers in both growing and shrinking establishments, but especially the former. Because, by the very nature of the occupation, the team assembler learns new assembly tasks quickly, it is understandable that this occupation would be popular in employment services. Also, the decline of the manufacturing sector has coincided with an increase in employment of production workers in employment services in general.

Among both growing and shrinking establishments, telemarketers were a very small percentage of employment in the 2000–02 period. However, in shrinking establishments, telemarketers were among those with the highest retention rate, whereupon they became one of the larger occupations in such establishments. This transformation indicates that, in employment services, the establishments whose core business is supplying telemarketing workers did not shrink as much as others in the industry.

The other interesting feature the table shows about the employment services industry is the percentages of employment in the office and administrative support occupations in growing and shrinking establishments; these occupations are those most associated with the traditional role of the temporary services agency. Perhaps surprisingly, the office support occupations were more heavily concentrated in shrinking establishments, where they represented approximately one-third of employment in both periods studied, compared with growing establishments, where they were only approximately one-quarter of employment. These shares suggest that relatively successful employment service firms have branched out into more diverse staffing activities than relatively unsuccessful ones.

Psychiatric hospitals. The healthcare sector is another large piece of the economy that has seen enormous changes in the last few years. The industry of psychiatric hospitals (NAICS 6222) is an example of the staffing pattern changes in this sector. In psychiatric and substance abuse hospitals, growing establishments showed an increase in employment of 50.1

percent, while shrinking ones exhibited a decrease of 21.8 percent.

Table 6 shows the staffing patterns for both growing and shrinking psychiatric hospitals, and while each employs a variety of healthcare professions, such as nurses, in similar proportions, the most interesting occupations in this industry are the following seven directly related to psychiatry and substance abuse: psychiatrists, psychiatric technicians, psychiatric aides, mental health and substance abuse social workers, mental health counselors, rehabilitation counselors, and substance abuse counselors.

During 2000–02, these seven mental-health-specific occupations represented 31.1 percent of industry employment in hospitals that were about to shrink and only 17.0 percent of employment in hospitals that were about to grow. By 2003–05, the shares had grown to 38.6 percent and 21.3 percent, respectively. This increase appears to confirm the hypothesis that shrinking establishments tend to concentrate employment in occupations most closely related to their core mission. Growing establishments also increased employment in these core occupations, but not at the same rate, and still have smaller shares of these workers, indicating that growing establishments are more likely than shrinking establishments to diversify their workforce.

Among the seven occupations listed, the biggest difference in employment between growing and shrinking establishments is exhibited by psychiatric aides and psychiatric technicians, which together account for a full 30 percent of industry employment in shrinking hospitals, but only 5 percent in growing hospitals. Oddly, psychiatrists themselves run counter to the trend of these two support occupations: psychiatrists were hired in expanding hospitals and cut in contracting ones.

Another possible explanation of the hypothesis that contracting establishments tend to concentrate employment in core occupations while expanding establishments tend to diversify among occupations is that hospitals which focus on counseling are more likely to grow, while those which focus more on psychiatric activities are more likely to decline. The four mental health and substance abuse counseling occupations among the seven listed contributed 15.2 percent of industry employment in hospitals that grew, but only a 6.5-percent share in those which shrank. Because these shares are roughly reversed in the initial, 2000–02 period, there is no causal relationship between whether a hospital focused on counseling and its employment growth. Instead, it seems likely that the mix between psychiatric specialists and counselors can contribute to the fortunes of the hospital.

It is also possible that the difference is related to ownership: hospitals are unique in this study in that they include State and local government-owned hospitals along with private ones. If government-owned hospitals have been more likely to expand relative to private ones, the staffing pattern differences between government-owned and private hospitals would affect the findings of this article.

Interestingly, both registered nurses and licensed nurses had similar employment shares in shrinking and growing hos-

⁶ Data from QCEW.

pitals, each of which saw licensed nurses double in share—an unusual situation in that the share of licensed nurses in all psychiatric hospitals did not change between 2000–02 and 2003–05.

Summary

The tables in the appendix show the occupational employment trends in establishments that grew, and in those which shrank between 2002 and 2005. The transportation and material-moving occupations had the largest average increase of all occupations in growing establishments, while food preparation and serving workers exhibited the largest average decrease of all occupations in shrinking establishments.

The idea that shrinking establishments concentrate on occupations that are most central to their core activities while expanding establishments have more liberty to diversify their employment suggests an interesting conclusion: it is likely that expanding establishments utilize both newer occupations and occupations that were previously unusual to that industry, and such dual utilization may be a factor in those establishments' success. Also, as the analysis indicates, in expanding establishments support occupations tend to grow at a slower pace than both industry-specific occupations and occupations tied to production and distribution, each of which

tends to scale more directly. Both of these trends appeared in the small selection of industries examined here; whether they hold for the majority of industries must remain a subject for future research.

Extending the findings

The analysis presented in this article creates more questions than it answers. Along with an examination of the core occupations mentioned in the article, two other topics ripe for further inquiry are occupational employment in new establishments, an examination of which would show the types of jobs being created when new firms begin operating, and the final staffing patterns of establishments that have recently closed. An examination of the latter topic could in turn be expanded by an investigation into the types of jobs that are destroyed when a firm cuts employment, but before it has shut down completely. The analysis presented here also ignores a major portion of OES survey data by neglecting wages, but the same data set could be used to examine wage differences among shrinking and growing establishments, as well as wage differences among workers in the same occupation in recently created establishments compared with long-running ones. Linked establishment data from the OES survey can provide a variety of unique results regarding occupations that are not

Table 1. Cross-industry occupational share in 2000-02

Occupation	Share in growing establishments	Share in contracting establishments	Share difference	Total share
Chief executives	0.344	0.319	0.025	0.278
General and operations managers	1.674	1.246	.428	1.397
Financial managers .....	.424	.417	.007	.342
Managers, all other .....	.357	.408	-.051	.271
Management analysts .....	.179	.368	-.189	.176
All other business operations and human resources specialists .....	.465	.669	-.204	.418
Accountants and auditors .....	.624	.525	.099	.521
Computer programmers .....	.352	.422	-.070	.278
Computer software engineers, applications .....	.272	.382	-.110	.222
Computer support specialists .....	.379	.461	-.082	.318
Computer systems analysts .....	.214	.413	-.199	.216
Social and human service assistants .....	.258	.408	-.150	.212
Lawyers .....	.381	.368	.013	.484
Postsecondary teachers, all other .....	.336	.343	-.007	.269
Elementary school teachers, except special education	1.268	.819	.449	2.182
Middle school teachers, except special and vocational education .....	.579	.276	.303	.855
Secondary school teachers, except special and vocational education .....	.981	1.334	-.353	1.503
Teachers and instructors, all other .....	.337	.787	-.450	.688
Teacher assistants .....	.902	.862	.040	1.638
Registered nurses	2.859	1.187	1.672	2.207
Licensed practical and licensed vocational nurses .....	.684	.376	.308	.566
Home health aides .....	.725	.547	.178	.467
Nursing aides, orderlies, and attendants	1.033	.532	.501	1.058
Medical assistants .....	.467	.204	.263	.358
Security guards	1.383	1.035	.348	.850
First-line supervisors/managers of food preparation and serving workers .....	.596	.558	.038	.654
Cooks, fast food .....	.563	.527	.036	.625
Cooks, restaurant .....	.499	.472	.027	.585
Food preparation workers .....	.705	.652	.053	.789
Combined food preparation and serving workers, including fast food	1.635	2.304	-.669	2.067
Waiters and waitresses	1.545	1.318	.227	1.759
Dining room and cafeteria attendants and bartender helpers .....	.265	.387	-.122	.374
Dishwashers .....	.378	.314	.064	.430
Janitors and cleaners, except maids and housekeeping cleaners	1.805	1.674	.131	1.864
Maids and housekeeping cleaners .....	.726	.825	-.099	.819
Landscaping and groundskeeping workers .....	.734	.496	.238	.515
Flight attendants .....	.023	.395	-.372	.137
Personal and home care aides	1.024	.441	.583	.479
First-line supervisors/managers of retail sales workers .....	.752	.561	.191	.865
Cashiers	2.426	2.007	.419	2.771
Retail salespersons	2.747	2.153	.594	3.081
Sales representatives, wholesale and manufacturing, except technical and scientific products .....	.865	.784	.081	.884
Telemarketers .....	.369	.490	-.121	.222
First-line supervisors/managers of office and administrative support workers	1.109	.996	.113	1.025
Bill and account collectors .....	.424	.320	.104	.260
Billing and posting clerks and machine operators .....	.501	.299	.202	.385
Bookkeeping, accounting, and auditing clerks	1.288	1.037	.251	1.227
Customer service representatives	1.395	1.904	-.509	1.299
Receptionists and information clerks	1.016	.759	.257	.902
Production, planning, and expediting clerks .....	.183	.343	-.160	.201
Shipping, receiving, and traffic clerks .....	.654	.724	-.070	.620
Stock clerks and order fillers	1.265	1.203	.062	1.371
Executive secretaries and administrative assistants	1.178	.963	.215	.960
Medical secretaries .....	.337	.126	.211	.394
Secretaries, except legal, medical, and executive	1.323	.929	.394	1.431
Office clerks, general	1.895	1.903	-.008	1.960
Office and administrative support workers, all other .....	.309	.484	-.175	.377
Farmworkers and laborers, crop, nursery, and greenhouse .....	.343	.425	-.082	.167
First-line supervisors/managers of construction trades and extraction workers .....	.576	.419	.157	.361
Carpenters .....	.945	.920	.025	.732
Construction laborers .....	.835	.832	.003	.574
Electricians .....	.590	.782	-.192	.529
Plumbers, pipefitters, and steamfitters .....	.463	.446	.017	.372
Automotive service technicians and mechanics .....	.343	.283	.060	.518

Table 1. Cross-industry occupational share in 2000-02—Continued

Occupation	Share in growing establishments	Share in contracting establishments	Share difference	Total share
Maintenance and repair workers, general .....	.809	.885	-.076	.915
First-line supervisors/managers of production and operating workers ..	.532	.720	-.188	.565
Electrical and electronic equipment assemblers .....	.130	.588	-.458	.210
Team assemblers .....	.937	1.494	-.557	1.029
Assemblers and fabricators, all other .....	.340	.614	-.274	.285
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic.....	.177	.376	-.199	.253
Machinists.....	.239	.403	-.164	.291
Welders, cutters, solderers, and brazers.....	.297	.449	-.152	.305
Sewing machine operators.....	.171	.355	-.184	.203
Inspectors, testers, sorters, samplers, and weighers .....	.332	.672	-.340	.399
Helpers—production workers .....	.281	.439	-.158	.336
Production workers, all other .....	.236	.757	-.521	.350
Bus drivers, school .....	.413	.307	.106	.573
Truck drivers, heavy and tractor-trailer	1.554	.981	.573	1.079
Truck drivers, light or delivery services .....	.635	.552	.083	.686
Industrial truck and tractor operators.....	.459	.564	-.105	.489
Laborers and freight, stock, and material movers, hand	1.564	2.310	-.746	1.633
Packers and packagers, hand.....	.626	.993	-.367	.731

Table 2. Cross-industry occupational shares in growing establishments, 2000-02 and 2003-05

Occupation	2000-02 share	2003-05 share	Share difference	Percent difference	Total share
Chief executives .....	.344	.246	-.098	-28	.213
General and operations managers	1.674	1.174	-.500	-30	1.172
Financial managers .....	.424	.346	-.078	-18	.301
Managers, all other .....	.357	.280	-.077	-22	.185
All other business operations and human resources specialists .....	.465	.679	.214	46	.554
Accountants and auditors .....	.624	.680	.056	9	.682
Financial analysts .....	.076	.122	.046	61	.099
Computer programmers .....	.352	.274	-.078	-22	.228
Computer support specialists .....	.379	.435	.056	15	.332
Mathematicians .....	.001	.007	.006	600	.003
Market research analysts .....	.085	.147	.062	73	.134
Environmental science and protection technicians, including health .....	.009	.030	.021	233	.018
Lawyers .....	.381	.173	-.208	-55	.271
Court reporters .....	.001	.004	.003	300	.005
Postsecondary teachers, all other .....	.336	.483	.147	44	.310
Elementary school teachers, except special education	1.268	.899	-.369	-29	1.865
Middle school teachers, except special and vocational education .....	.579	.413	-.166	-29	.756
Secondary school teachers, except special and vocational education .....	.981	.580	-.401	-41	1.237
Teachers and instructors, all other .....	.337	.727	.390	116	.663
Teacher assistants .....	.902	.928	.026	3	1.403
Registered nurses	2.859	2.700	-.159	-6	2.297
Licensed practical and licensed vocational nurses .....	.684	.581	-.103	-15	.509
Home health aides .....	.725	1.022	.297	41	.587
Nursing aides, orderlies, and attendants	1.033	.998	-.035	-3	1.002
Medical assistants .....	.467	.349	-.118	-25	.311
Security guards	1.383	1.391	.008	1	.866
Lifeguards, ski patrol, and other recreational protective service workers .....	.027	.095	.068	252	.059
First-line supervisors/managers of food preparation and serving workers .....	.596	.341	-.255	-43	.442
Cooks, fast food .....	.563	.384	-.179	-32	.347
Cooks, restaurant .....	.499	.281	-.218	-44	.438
Cooks, all other .....	.003	.012	.009	300	.008
Food preparation workers .....	.705	.434	-.271	-38	.610
Combined food preparation and serving workers, including fast food	1.635	1.370	-.265	-16	1.441
Waiters and waitresses	1.545	.854	-.691	-45	1.223
Dishwashers .....	.378	.213	-.165	-44	.295
Janitors and cleaners, except maids and housekeeping cleaners	1.805	1.686	-.119	-7	1.814
Maids and housekeeping cleaners .....	.726	.559	-.167	-23	.734
Landscaping and groundskeeping workers .....	.734	.851	.117	16	.584
Travel guides .....	.001	.005	.004	400	.002
Flight attendants .....	.023	.099	.076	330	.150
Child care workers .....	.306	.436	.130	42	.483
Personal and home care aides	1.024	1.068	.044	4	.484
First-line supervisors/managers of retail sales workers .....	.752	.735	-.017	-2	.976
Cashiers	2.426	2.167	-.259	-11	2.963
Retail salespersons	2.747	3.111	.364	13	3.697
Sales representatives, wholesale and manufacturing, except technical and scientific products .....	.865	.835	-.030	-3	1.032
Telemarketers .....	.369	.344	-.025	-7	.208
First-line supervisors/managers of office and administrative support workers	1.109	.988	-.121	-11	.988
Bill and account collectors .....	.424	.423	-.001	0	.290
Billing and posting clerks and machine operators .....	.501	.449	-.052	-10	.387
Bookkeeping, accounting, and auditing clerks	1.288	1.117	-.171	-13	1.355
Tellers .....	.327	.475	.148	45	.627
Customer service representatives	1.395	1.779	.384	28	1.483
Receptionists and information clerks	1.016	.811	-.205	-20	.806
Shipping, receiving, and traffic clerks .....	.654	.624	-.030	-5	.628
Stock clerks and order fillers	1.265	1.364	.099	8	1.489
Executive secretaries and administrative assistants	1.178	1.025	-.153	-13	.989
Legal secretaries .....	.211	.071	-.140	-66	.161
Medical secretaries .....	.337	.298	-.039	-12	.357

Table 2. Cross-industry occupational shares in growing establishments, 2000-02 and 2003-05—Continued

Occupation	2000-02 share	2003-05 share	Share difference	Percent difference	Total share
Secretaries, except legal, medical, and executive.....	1.323	.935	-.388	-29	1.311
Office clerks, general.....	1.895	2.063	.168	9	2.097
Farmworkers and laborers, crop, nursery, and greenhouse	.343	.623	.280	82	.209
First-line supervisors/managers of construction trades and extraction workers .....	.576	.563	-.013	-2	.414
Carpenters.....	.945	1.180	.235	25	.782
Construction laborers .....	.835	1.013	.178	21	.659
Operating engineers and other construction equipment operators .....	.318	.365	.047	15	.262
Electricians .....	.590	.603	.013	2	.515
Painters, construction and maintenance .....	.187	.262	.075	40	.230
Plumbers, pipefitters, and steamfitters .....	.463	.474	.011	2	.344
Roofers .....	.128	.150	.022	17	.116
Mine cutting and channeling machine operators.....	.001	.006	.005	500	.006
Electronic equipment installers and repairers, motor vehicles .....	.002	.010	.008	400	.015
Automotive service technicians and mechanics.....	.343	.266	-.077	-22	.525
Maintenance and repair workers, general .....	.809	.862	.053	7	1.086
First-line supervisors/managers of production and operating workers.....	.532	.510	-.022	-4	.641
Aircraft structure, surfaces, rigging, and systems assemblers .....	.025	.076	.051	204	.041
Team assemblers .....	.937	1.441	.504	54	1.187
Assemblers and fabricators, all other .....	.340	.340	.000	0	.284
Welders, cutters, solderers, and brazers.....	.297	.348	.051	17	.352
Textile knitting and weaving machine setters, operators, and tenders.....	.011	.034	.023	209	.051
Power plant operators .....	.005	.017	.012	240	.027
Inspectors, testers, sorters, samplers, and weighers .....	.332	.495	.163	49	.471
Packaging and filling machine operators and tenders.....	.270	.365	.095	35	.329
Helpers--production workers .....	.281	.587	.306	109	.506
First-line supervisors/managers of helpers, laborers, and material movers, hand.....	.117	.142	.025	21	.143
Commercial pilots.....	.012	.046	.034	283	.029
Bus drivers, school .....	.413	.433	.020	5	.528
Truck drivers, heavy and tractor-trailer.....	1.554	1.707	.153	10	1.227
Truck drivers, light or delivery services .....	.635	.663	.028	4	.701
Conveyor operators and tenders .....	.056	.035	-.021	-100	.044
Industrial truck and tractor operators.....	.459	.573	.114	25	.567
Laborers and freight, stock, and material movers, hand	1.564	2.155	.591	38	1.745
Packers and packagers, hand.....	.626	.757	.131	21	.721

Table 3. Cross-industry occupational shares in shrinking establishments, 2000-02 and 2003-05

Occupation	2000-02 share	2003-05 share	Share difference	Percent difference	Total share
General and operations managers	1.246	1.460	0.214	17	1.172
Financial managers .....	.417	.394	-.023	-6	.301
Managers, all other .....	.408	.225	-.183	-45	.185
Agents and business managers of artists, performers, and athletes .....	.001	.006	.005	500	.003
Purchasing agents, except wholesale, retail, and farm products .....	.226	.337	.111	49	.204
Management analysts .....	.368	.299	-.069	-19	.206
All other business operations and human resources specialists .....	.669	.755	.086	13	.554
Accountants and auditors .....	.525	.940	.415	79	.682
Computer programmers .....	.422	.309	-.113	-27	.228
Computer software engineers, applications .....	.382	.510	.128	34	.254
Computer software engineers, systems software .....	.327	.342	.015	5	.184
Computer support specialists .....	.461	.463	.002	0	.332
Computer systems analysts .....	.413	.401	-.012	-3	.244
Industrial engineers .....	.248	.336	.088	35	.169
Conservation scientists .....	.001	.005	.004	400	.002
Social and human service assistants .....	.408	.194	-.214	-52	.189
Lawyers .....	.368	.236	-.132	-36	.271
Arbitrators, mediators, and conciliators .....	.001	.006	.005	500	.003
Postsecondary teachers, all other .....	.343	.307	-.036	-10	.310
Elementary school teachers, except special education .....	.819	1.527	.708	86	1.865
Secondary school teachers, except special and vocational education	1.334	.766	-.568	-43	1.237
Teachers and instructors, all other .....	.787	.265	-.522	-66	.663
Archivists, curators, and museum technicians .....	.006	.020	.014	233	.018
Teacher assistants .....	.862	.456	-.406	-47	1.403
Registered nurses	1.187	1.308	.121	10	2.297
Licensed practical and licensed vocational nurses .....	.376	.297	-.079	-21	.509
Home health aides .....	.547	.509	-.038	-7	.587
Nursing aides, orderlies, and attendants .....	.532	.466	-.066	-12	1.002
Private detectives and investigators .....	.019	.074	.055	289	.029
Security guards	1.035	.935	-.100	-10	.866
First-line supervisors/managers of food preparation and serving workers .....	.558	.412	-.146	-26	.442
Cooks, fast food .....	.527	.397	-.130	-25	.347
Cooks, restaurant .....	.472	.326	-.146	-31	.438
Food preparation workers .....	.652	.436	-.216	-33	.610
Bartenders .....	.237	.206	-.031	-13	.252
Combined food preparation and serving workers, including fast food	2.304	1.339	-.965	-42	1.441
Counter attendants, cafeteria, food concession, and coffee shop .....	.254	.300	.046	18	.297
Waiters and waitresses	1.318	.884	-.434	-33	1.223
Food servers, nonrestaurant .....	.247	.100	-.147	-60	.151
Dining room and cafeteria attendants and bartender helpers .....	.387	.115	-.272	-70	.259
Janitors and cleaners, except maids and housekeeping cleaners	1.674	1.591	-.083	-5	1.814
Maids and housekeeping cleaners .....	.825	.721	-.104	-13	.734
Landscaping and groundskeeping workers .....	.496	.575	.079	16	.584
Slot key persons .....	.002	.011	.009	450	.013
Amusement and recreation attendants .....	.267	.115	-.152	-57	.126
Flight attendants .....	.395	.565	.170	43	.150
Child care workers .....	.286	.365	.079	28	.483
Personal and home care aides .....	.441	.368	-.073	-17	.484
First-line supervisors/managers of retail sales workers .....	.561	.783	.222	40	.976
Cashiers	2.007	2.186	.179	9	2.963
Gaming change persons and booth cashiers .....	.016	.005	-.011	-69	.027
Counter and rental clerks .....	.234	.316	.082	35	.355
Parts salespersons .....	.142	.125	-.017	-12	.211
Retail salespersons	2.153	3.001	.848	39	3.697
Sales representatives, services, all other .....	.209	.446	.237	113	.291
Sales representatives, wholesale and manufacturing, except technical and scientific products .....	.784	1.117	.333	42	1.032
Telemarketers .....	.490	.390	-.100	-20	.208
First-line supervisors/managers of office and administrative support workers .....	.996	1.116	.120	12	.988

Table 3. Cross-industry occupational shares in shrinking establishments, 2000-02 and 2003-05—Continued

Occupation	2000-02 share	2003-05 share	Share difference	Percent difference	Total share
Billing and posting clerks and machine operators .....	.299	.348	.049	16	.387
Bookkeeping, accounting, and auditing clerks	1.037	1.446	.409	39	1.355
Tellers .....	.317	.606	.289	91	.627
Customer service representatives	1.904	1.724	-.180	-9	1.483
Eligibility interviewers, government programs .....	.001	.008	.007	700	.004
Receptionists and information clerks .....	.759	.738	-.021	-3	.806
Reservation and transportation ticket agents and travel clerks .....	.326	.397	.071	22	.172
Production, planning, and expediting clerks .....	.343	.425	.082	24	.239
Shipping, receiving, and traffic clerks .....	.724	.871	.147	20	.628
Stock clerks and order fillers	1.203	1.282	.079	7	1.489
Executive secretaries and administrative assistants .....	.963	1.271	.308	32	.989
Secretaries, except legal, medical, and executive .....	.929	1.027	.098	11	1.311
Office clerks, general	1.903	1.893	-.010	-1	2.097
Office and administrative support workers, all other .....	.484	.137	-.347	-72	.204
Farmworkers and laborers, crop, nursery, and greenhouse .....	.425	.222	-.203	-48	.209
First-line supervisors/managers of construction trades and extraction workers .....	.419	.540	.121	29	.414
Carpenters .....	.920	.934	.014	2	.782
Construction laborers .....	.832	.794	-.038	-5	.659
Electricians .....	.782	.822	.040	5	.515
Plumbers, pipefitters, and steamfitters .....	.446	.326	-.120	-27	.344
Septic tank servicers and sewer pipe cleaners .....	.002	.020	.018	900	.014
Roustabouts, oil and gas .....	.017	.056	.039	229	.021
First-line supervisors/managers of mechanics, installers, and repairers .....	.283	.369	.086	30	.345
Telecommunications equipment installers and repairers, except line installers .....	.281	.412	.131	47	.144
Industrial machinery mechanics .....	.197	.345	.148	75	.237
Maintenance and repair workers, general .....	.885	1.150	.265	30	1.086
First-line supervisors/managers of production and operating workers .....	.720	.939	.219	30	.641
Electrical and electronic equipment assemblers .....	.588	.518	-.070	-12	.196
Team assemblers	1.494	1.647	.153	10	1.187
Assemblers and fabricators, all other .....	.614	.501	-.113	-18	.284
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic .....	.376	.410	.034	9	.281
Machinists .....	.403	.636	.233	58	.381
Welders, cutters, solderers, and brazers .....	.449	.454	.005	1	.352
Sewing machine operators .....	.355	.437	.082	23	.213
Inspectors, testers, sorters, samplers, and weighers .....	.672	.757	.085	13	.471
Packaging and filling machine operators and tenders .....	.315	.352	.037	12	.329
Helpers--production workers .....	.439	.493	.054	12	.506
Production workers, all other .....	.757	.526	-.231	-31	.235
Truck drivers, heavy and tractor-trailer .....	.981	1.036	.055	6	1.227
Truck drivers, light or delivery services .....	.552	.562	.010	2	.701
Industrial truck and tractor operators .....	.564	.669	.105	19	.567
Laborers and freight, stock, and material movers, hand	2.310	1.924	-.386	-17	1.745
Packers and packagers, hand .....	.993	.862	-.131	-13	.721
Gas compressor and gas pumping station operators .....	.001	.006	.005	500	.003

Table 4. Occupational shares in scheduled air transportation (NAICS 4811)

Occupation	2000-02 share	2003-05 share	Share difference	Percent difference	Total share
Growing establishments					
Managers, all other.....	3.246	1.014	-2.232	-69	0.348
Management analysts	1.173	2.146	.973	83	.701
All other business operations and human resources specialists.....	4.170	1.482	-2.688	-64	1.205
Financial specialists, all other.....	1.257	.346	-.911	-72	.080
Computer programmers .....	.086	1.033	.947	1101	.236
Computer specialists, all other	1.587	.807	-.780	-49	.160
Baggage porters and bellhops.....	1.085	.305	-.780	-72	2.486
Flight attendants.....	3.323	16.665	13.342	402	21.952
First-line supervisors/managers of office and administrative support workers.....	1.769	1.451	-.318	-18	2.330
Bookkeeping, accounting, and auditing clerks	1.166	.909	-.257	-22	.434
Customer service representatives	4.580	1.390	-3.190	-70	1.194
Reservation and transportation ticket agents and travel clerks.....					
	16.653	12.982	-3.671	-22	17.302
Cargo and freight agents	1.089	1.831	.742	68	2.750
Production, planning, and expediting clerks.....	.680	1.125	.445	65	.920
Stock clerks and order fillers	1.926	1.155	-.771	-40	1.132
Secretaries, except legal, medical, and executive.....	1.465	.069	-1.396	-95	.115
Office and administrative support workers, all other.....	3.588	1.307	-2.281	-64	.421
Aircraft mechanics and service technicians.....					
	23.473	12.506	-10.967	-47	9.495
Maintenance and repair workers, general	1.281	1.413	.132	10	1.372
Inspectors, testers, sorters, samplers, and weighers	1.808	.163	-1.645	-91	.035
Airline pilots, copilots, and flight engineers.....					
	5.059	11.555	6.496	128	12.951
Commercial pilots.....	.040	2.202	2.162	5405	.508
Cleaners of vehicles and equipment	1.675	2.306	.631	38	1.083
Laborers and freight, stock, and material movers, hand ....	.037	2.709	2.672	7222	1.631
Material moving workers, all other.....	1.511	7.289	5.778	382	2.010
Shrinking establishments					
All other business operations and human resources specialists.....	1.295	1.015	-.280	-22	1.205
Baggage porters and bellhops.....	4.825	4.921	.096	2	2.486
Flight attendants.....	24.521	27.477	2.956	12	21.952
First-line supervisors/managers of office and administrative support workers.....	1.117	2.169	1.052	94	2.330
Customer service representatives	5.732	.858	-4.874	-85	1.194
Reservation and transportation ticket agents and travel clerks.....					
	15.813	15.713	-.100	-1	17.302
Cargo and freight agents .....	.795	1.244	.449	56	2.750
Stock clerks and order fillers	1.335	1.671	.336	25	1.132
Aircraft mechanics and service technicians.....					
	6.402	10.159	3.757	59	9.495
Maintenance and repair workers, general	1.915	2.843	.928	48	1.372
Installation, maintenance, and repair workers, all other	7.984	.186	-7.798	-98	.128
Airline pilots, copilots, and flight engineers.....					
	10.962	10.761	-.201	-2	12.951
Transportation workers, all other	1.264	6.255	4.991	395	4.217
Cleaners of vehicles and equipment	1.743	1.827	.084	5	1.083
Material moving workers, all other.....	.596	2.634	2.038	342	2.010
Aerospace engineering and operations technicians.....	1.340	.000	1.340	-	.095

Bolded occupations are those specifically related to this industry and highlighted in the text.

Table 5. Occupational shares in employment services (NAICS 5613)

Occupation	2000-02 share	2003-05 share	Share difference	Percent difference	Total share
Growing establishments					
General and operations managers	1.043	0.415	-0.628	-60	0.495
Employment, recruitment, and placement specialists	1.773	1.119	-.654	-37	1.773
Registered nurses	1.231	2.182	.951	77	1.941
Licensed practical and licensed vocational nurses.....	.509	1.001	.492	97	1.069
Security guards.....	.759	1.058	.299	39	.739
Cooks, short order.....	1.085	.010	-1.075	-99	.004
Waiters and waitresses	1.043	.234	-.809	-78	.207
Janitors and cleaners, except maids and housekeeping cleaners.....	1.850	1.334	-.516	-28	1.212
Ushers, lobby attendants, and ticket takers.....	3.570	.402	-3.168	-89	.166
Telemarketers .....	.668	.346	-.322	-48	.611
Bookkeeping, accounting, and auditing clerks	1.177	.787	-.390	-33	.873
Customer service representatives	2.628	3.255	.627	24	3.170
Receptionists and information clerks.....	2.388	1.559	-.829	-35	2.114
Information and record clerks, all other .....	.347	1.345	.998	288	1.815
Shipping, receiving, and traffic clerks .....	.794	2.059	1.265	159	1.639
Stock clerks and order fillers	1.588	1.234	-.354	-22	1.220
Executive secretaries and administrative assistants	2.407	1.593	-.814	-34	2.370
Secretaries, except legal, medical, and executive.....	2.122	1.628	-.494	-23	1.567
Data entry keyers	1.643	1.544	-.099	-6	1.932
Office clerks, general.....	4.412	6.182	1.770	40	6.121
Carpenters.....	1.587	.705	-.882	-56	.678
Construction laborers	1.664	1.575	-.089	-5	2.018
Team assemblers .....	.796	9.214	8.418	1058	7.676
Assemblers and fabricators, all other	3.267	1.122	-2.145	-66	.924
Extruding and drawing machine setters, operators, and tenders, metal and plastic.....	1.042	.150	-.892	-86	.073
Machinists.....	.899	1.097	.198	22	.731
Inspectors, testers, sorters, samplers, and weighers .....	.976	1.115	.139	14	.983
Packaging and filling machine operators and tenders.....	1.820	1.884	.064	4	1.645
Helpers--production workers	1.966	5.777	3.811	194	4.415
Production workers, all other	1.392	3.136	1.744	125	3.181
Industrial truck and tractor operators.....	.993	1.310	.317	32	1.149
Laborers and freight, stock, and material movers, hand	11.643	11.258	-.385	-3	12.342
Packers and packagers, hand.....	7.849	5.918	-1.931	-25	5.307
Shrinking establishments					
Employment, recruitment, and placement specialists .....	.643	2.604	1.961	305	1.773
All other life, physical, and social science technicians	1.003	.038	-.965	-96	.069
Registered nurses	1.416	2.581	1.165	82	1.941
Licensed practical and licensed vocational nurses.....	1.873	1.560	-.313	-17	1.069
Home health aides.....	1.126	1.696	.570	51	.713
Nursing aides, orderlies, and attendants.....	2.591	1.595	-.996	-38	.978
Janitors and cleaners, except maids and housekeeping cleaners	1.062	1.246	.184	17	1.212
Telemarketers .....	.288	1.531	1.243	432	.611
Bookkeeping, accounting, and auditing clerks	1.664	.919	-.745	-45	.873
Customer service representatives	1.546	2.565	1.019	66	3.170
File clerks	1.206	1.324	.118	10	.793
Receptionists and information clerks.....	2.331	3.188	.857	37	2.114
Information and record clerks, all other .....	.312	2.280	1.968	631	1.815
Stock clerks and order fillers	1.412	.865	-.547	-39	1.220
Executive secretaries and administrative assistants	2.184	4.562	2.378	109	2.370
Secretaries, except legal, medical, and executive.....	4.079	1.870	-2.209	-54	1.567
Data entry keyers	2.358	2.158	-.200	-8	1.932
Office clerks, general.....	7.473	6.538	-.935	-13	6.121
Office and administrative support workers, all other.....	1.047	.200	-.847	-81	.403
Construction laborers	2.130	2.268	.138	6	2.018
Team assemblers	1.142	5.460	4.318	378	7.676
Assemblers and fabricators, all other	2.961	.271	-2.690	-91	.924
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	1.247	1.077	-.170	-14	1.220
Packaging and filling machine operators and tenders.....	1.598	1.186	-.412	-26	1.645
Helpers--production workers	1.480	2.697	1.217	82	4.415
Production workers, all other	3.379	3.569	.190	6	3.181
Industrial truck and tractor operators.....	.567	1.160	.593	105	1.149
Laborers and freight, stock, and material movers, hand	17.748	13.355	-4.393	-25	12.342
Packers and packagers, hand.....	5.839	3.611	-2.228	-38	5.307

Table 6. Occupational shares in psychiatric hospitals (NAICS 6222)

Occupation	2000-02 share	2003-05 share	Share difference	Percent difference	Total share
Growing establishments					
Medical and health services managers	2.538	1.456	-1.082	-43	1.753
Substance abuse and behavioral disorder counselors	1.190	3.922	2.732	230	1.524
Mental health counselors	2.247	5.762	3.515	156	1.635
Rehabilitation counselors	1.010	1.079	.069	7	.471
Child, family, and school social workers .....	.526	1.088	.562	107	.793
Medical and public health social workers .....	.568	2.341	1.773	312	1.166
Mental health and substance abuse social workers	4.308	4.401	.093	2	3.976
Social and human service assistants	3.513	2.115	-1.398	-40	2.632
Community and social service specialists, all other .....	.095	1.857	1.762	1855	.440
Teachers and instructors, all other	1.796	.754	-1.042	-58	.305
Psychiatrists	1.160	1.033	.873	546	1.819
Registered nurses	1.497	11.661	.164	1	12.796
Recreational therapists	1.302	.846	-.456	-35	1.228
Psychiatric technicians	4.100	3.413	-.687	-17	8.943
Licensed practical and licensed vocational nurses	2.141	4.849	2.708	126	3.757
Nursing aides, orderlies, and attendants	2.324	15.718	13.394	576	3.796
Psychiatric aides	3.999	1.662	-2.337	-58	12.012
Medical assistants .....	.410	1.956	1.546	377	.193
Healthcare support workers, all other	16.999	.249	-16.750	-99	.742
Cooks, institution and cafeteria	1.014	.651	-.363	-36	1.096
Food servers, nonrestaurant	4.163	.125	-4.038	-97	.850
Maids and housekeeping cleaners	4.545	2.946	-1.599	-35	1.449
First-line supervisors/managers of office and administrative support workers	1.007	.633	-.374	-37	.667
Executive secretaries and administrative assistants .....	.725	1.209	.484	67	1.058
Office clerks, general .....	.623	1.025	.402	65	1.372
Maintenance and repair workers, general	1.118	1.085	-.033	-3	1.510
Combined food preparation and serving workers, Including fast food .....	.000	1.655	1.655	-	.719
Shrinking establishments					
Medical and health services managers	1.643	1.599	-.044	-3	1.753
Managers, all other	1.081	.187	-.894	-83	.264
Clinical, counseling, and school psychologists	3.726	1.602	-2.124	-57	1.764
Substance abuse and behavioral disorder counselors	1.162	2.169	1.007	87	1.524
Mental health counselors	2.994	.552	-2.442	-82	1.635
Rehabilitation counselors	1.174	.277	-.897	-76	.471
Mental health and substance abuse social workers	6.139	3.469	-2.670	-43	3.976
Social and human service assistants	2.697	2.256	-.441	-16	2.632
Community and social service specialists, all other	3.154	.455	-2.699	-86	.440
Psychiatrists	2.384	1.445	-.939	-39	1.819
Registered nurses	11.092	10.744	-.348	-3	12.796
Recreational therapists	1.377	1.325	-.052	-4	1.228
All other health diagnosing and treating practitioners	1.150	.254	-.896	-78	.298
Psychiatric technicians	4.994	9.516	4.522	91	8.943
Licensed practical and licensed vocational nurses	2.944	4.496	1.552	53	3.757
Nursing aides, orderlies, and attendants .....	.609	1.535	.926	1522	3.796
Psychiatric aides	12.240	21.179	8.939	73	12.012
Healthcare support workers, all other	2.476	.216	-2.260	-91	.742
Security guards	5.382	1.793	-3.589	-67	2.151
Combined food preparation and serving workers, including fast food .....	.052	1.027	.975	1875	.719
Janitors and cleaners, except maids and housekeeping cleaners	2.415	2.395	-.020	-1	1.901
Recreation workers .....	.240	2.038	1.798	749	.407
Executive secretaries and administrative assistants .....	.412	1.506	1.094	266	1.058
Secretaries, except legal, medical, and executive	3.565	.764	-2.801	-79	1.555
Word processors and typists	1.176	.145	-1.031	-88	.727
Office clerks, general .....	.940	2.778	1.838	196	1.372
Maintenance and repair workers, general	1.096	2.135	1.039	95	1.510
Child, family, and school social workers	1.549	.000	-1.719	-	.793
Protective service workers, all other .....	.000	4.561	4.651	-	.262

Bolded occupations are those specifically related to this industry and highlighted in the text.