

JOB QUALITY IN THE METROPOLITAN AREAS OF THE UNITED STATES

**A Report from the Productivity and Prosperity Project (P3),
Supported by the Office of the University Economist**

May 2017

Dennis Hoffman, Ph.D.

Professor, Department of Economics; Director, L. William Seidman Research Institute;
and Director, Office of the University Economist

Tom Rex, M.B.A.

Associate Director, Center for Competitiveness and Prosperity Research;
and Manager of Research Initiatives, Office of the University Economist

Center for Competitiveness and Prosperity Research
L. William Seidman Research Institute
W. P. Carey School of Business
Arizona State University
Box 874011
Tempe, Arizona 85287-4011

(480) 965-5362

FAX: (480) 965-5458

EMAIL: Tom.Rex@asu.edu

wpcarey.asu.edu/research/competitiveness-prosperity-research

economist.asu.edu



TABLE OF CONTENTS

Summary	1
Introduction	3
Summary of Job Quality in Metropolitan Areas	4
Job Quality by Metropolitan Area Within States	12
Clusters in Arizona and Its Metropolitan Areas	72
Appendix: Job Quality for Metropolitan Areas That Extend Across State Lines	79

LIST OF TABLES

1. Job Quality by Metropolitan Area Size Class	5
2. Job Quality in the Largest Metropolitan Areas	7
3. Variation Across the Metropolitan Areas in the Industrial Job Mix in Selected Economic Clusters in 2015	9
4. Job Quality by State	13
5. Job Quality by Metropolitan Area Within States	20
6. Industrial Mix in Arizona	73
7. Clusters Having a Significant Impact on the 2015 Traded-Cluster Industrial Mix in Arizona's Metropolitan Areas	74
8. Clusters Having a Significant Impact on the 2001-to-2015 Change in the Traded-Cluster Industrial Mix in Arizona's Metropolitan Areas	78

SUMMARY

Job quality in 2015 ranged significantly over the nation’s 381 metropolitan areas, with a strong relationship between metro area size and job quality. Based on employment, the metro areas were categorized into five size classes. On average, the largest metro areas had the highest job quality and smallest metro areas had the lowest job quality, with a significant difference between these two size classes, as seen in Table S-1.

Over all metropolitan areas, job quality in 2015 was greater than the national average — thus, job quality in the nonmetropolitan portion of the country was below average. The metro area size-class mean was greater than the U.S. average only in the largest size class of employment of 1 million or more. Just 34 of the 381 metro areas (9 percent) were in this size class. However, these 34 metro areas accounted for 57 percent of the employment in all metro areas (and 49 percent of the nation’s employment). The job quality in 85 percent of these large metro areas was positive (greater than the national average). In contrast, only 10 percent of the metro areas in the smallest size class had a positive job quality value.

Unlike job quality in 2015, the change in job quality between 2001 and 2015 was not related to metropolitan area size.

Job quality is calculated as the average of the industrial mix and the occupational mix. The two job mix values were highly correlated in 2015. The industrial mix can be split into two parts by defining each industry as being either a traded activity (most sales are to customers located outside the metropolitan area) or an untraded activity (most sales are to local customers). Traded industries are grouped into 53 traded clusters and untraded industries are categorized into 17 untraded clusters. Since traded activities drive any economy, the focus is on the traded clusters.

The relationship between the industrial mix value and metropolitan size largely is the result of a relatively small number of traded clusters — particularly business services, financial services, and information technology and analytical instruments — that disproportionately locate in large metro areas. Several other traded clusters exhibit a more modest relationship between metro size and the industrial mix value: marketing, design, and publishing; insurance services; education and knowledge creation; farming and ranching; and aerospace vehicles and defense. In each of

**TABLE S-1
JOB QUALITY BY METROPOLITAN AREA SIZE CLASS**

Employment Size Class	2015	2001-to-2015 Change
All Metropolitan Areas	0.75	-0.51
1 Million or More	3.75	-0.86
350,000 to 999,999	-0.85	0.14
200,000 to 349,999	-3.02	-0.60
100,000 to 199,999	-4.86	-0.08
Less Than 100,000	-6.75	0.25

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

these clusters, the mean industrial mix value in 2015 was highest in the largest size class and lowest in the smallest size class. The farming and ranching cluster's industrial mix value is inversely related to metro size; unlike the other traded clusters mentioned above, its average earnings per worker is below average.

Consistent with the lack of an overall relationship between metropolitan area size and the change between 2001 and 2015 in the industrial mix value, the change over time was related to size in just one cluster, with only a mild relationship in business services. The clusters exhibiting the most variation across metro areas in the change over time in the industrial mix value were business services; information technology and analytical instruments; oil and gas production and transportation; and marketing, design, and publishing.

Job Quality in Arizona

Job quality in Arizona in 2015 was nearly equal to the national average, as a modestly above-average occupational mix nearly offset a somewhat-below-average industrial mix. The change in job quality between 2001 and 2015 also was nearly equal to the U.S. average, as a minimal gain in the occupational mix nearly offset a slight decline in the industrial mix.

Only two of the state's seven metropolitan areas — Flagstaff and Sierra Vista-Douglas — had above-average job quality in 2015 relative to their size-class mean; Sierra Vista-Douglas ranked in the top 10 percent of the nation's metro areas. Job quality was considerably below the size-class mean in the Lake Havasu City-Kingman, Prescott, and Yuma metro areas. In five of the state's metro areas, the change in job quality from 2001 to 2015 was above the size-class mean, with Metro Sierra Vista-Douglas and Metro Yuma in the nation's top 10 percent. However, the two most-populous metro areas in Arizona — Phoenix-Mesa-Scottsdale and Tucson — had below-average job quality in 2015 and a below-average change in job quality from 2001 to 2015, relative to their size-class means.

The traded-cluster industrial mix in 2015 was greater than the size-class mean only in Metro Sierra Vista-Douglas, but Metro Tucson was near average. Four metro areas had a gain in the traded-cluster industrial mix between 2001 and 2015 relative to the size-class mean, including much-above-average increases in Yuma and Sierra Vista-Douglas. However, the changes were substantially below the norm in the Phoenix-Mesa-Scottsdale and Tucson areas.

The business services cluster was primarily responsible for the traded-cluster industrial mix being below the size-class average in 2015 in Metro Phoenix-Mesa-Scottsdale. The strongest positive contribution came from the financial services cluster. Business services also had a large negative effect on the traded-cluster industrial mix in Metro Tucson, but this was offset by a very strong positive value in the aerospace vehicles and defense cluster. The federal government cluster also had a strong positive contribution in the Tucson area.

The information technology and analytical instruments cluster was primarily responsible for the change in the traded-cluster industrial mix between 2001 and 2015 being below the size-class average in Metro Phoenix-Mesa-Scottsdale. Metro Tucson experienced an even-larger decrease in this cluster and also experienced declines in the aerospace vehicles and defense and business services clusters.

INTRODUCTION

Job quality was discussed in the March 2017 report from the Office of the University Economist, “Job Quality in 2015 and the Change in Job Quality Between 2001 and 2015,” <https://wpcarey.asu.edu/sites/default/files/jobquality03-17.pdf>. As in that report, this report looks at the industrial job mix, the occupational job mix, and job quality (the average of the industrial mix and the occupational mix) in 2015 and for the change between 2001 and 2015. The data come from Economic Modeling Specialists International (Emsi), a private-sector firm that provides estimates of employment and earnings per worker for all industries and occupations. The earliest Emsi data are for 2001. While estimates for 2016 are available from Emsi, they are based on incomplete federal government data that is subject to revision. Thus, 2015 is considered to be the most recent reliable data.

The “Introduction” section of the March 2017 report (pages 7 through 11) discussed methodology, data, and economic clusters. Two differences in data make the results from that report inconsistent with those published in this report:

- Emsi updates their dataset quarterly. The previous report used their data from fourth quarter 2016; this paper uses their estimates from first quarter 2017.
- In the prior report, all four categories of employment reported by Emsi were included. In this report, the fourth category of workers — individuals with earnings from self-employment, but whose self-employment does not make up the majority of their earnings or time spent at work — was excluded from the analysis.

While the prior report discussed job quality in metropolitan areas, the analysis was limited to 50 large metro areas. In this report, all of the nation’s 381 metro areas — as officially defined in 2013 based on 2010 decennial census data — are included.

Because of the strong relationship between job quality and metropolitan area size that is discussed in the next section, metropolitan areas are the preferred geographic unit of analysis. Job quality in metropolitan areas are presented by state in a subsequent section. For the 47 metro areas that extend across more than one state, the job mixes in each state’s portion of the metro area were calculated, using county data provided by Emsi. In many of the metro areas that are split across two or more states, the job mixes vary widely across the subparts of the metro area. Generally, job quality is highest in the core of the metro area and lower (frequently, much lower) in the outlying areas that extend into other states. For these 47 metro areas, job quality for the entire metro area is presented in the Appendix.

In addition to the metropolitan area data, job quality is presented for each state and for the nonmetropolitan area of each state, which is calculated as the difference between the state’s job quality and the weighted (by employment) job quality of each of the metro areas within the state. Readers need to be aware that a state’s job quality is in part the result of its distribution of metro areas by size.

As an example of the type of analysis of the industrial job mix that can be undertaken through the analysis of economic clusters, the 2015 industrial mix and the 2001-to-2015 change in industrial mix are examined for Arizona and each of its seven metropolitan areas by cluster in the final section of this report.

SUMMARY OF JOB QUALITY IN METROPOLITAN AREAS

Relationship Between Job Quality and Metropolitan Area Size

The 381 metropolitan areas were grouped into five size classes based on employment in 2015:

- Employment of at least 1 million: 34 metro areas, with employment as high as 9.85 million in Metro New York
- Employment from 350,000 to 999,999: 42 metro areas
- Employment from 200,000 to 349,999: 45 metro areas
- Employment from 100,000 to 199,999: 88 metro areas
- Employment of less than 100,000: 172 metro areas

Thus, 45 percent of the metro areas had employment of less than 100,000 and 68 percent had employment of less than 200,000.

Job mix values by size class were calculated in three ways:

- Weighted mean. The job mix value for each metropolitan area in a size class was multiplied by the metro area's share of total employment in the size class, and these weighted values were summed over the metro areas.
- Unweighted mean. The simple average of the job mix values over the metro areas in the size class was calculated.
- Unweighted median. The job mix values of the metro areas in the size class were sorted and the mid-point of the range was determined.

In each case, the values are expressed relative to the national average, with a positive value indicating a job mix superior to the national average.

Except in the size class of metropolitan areas with employment of at least 1 million, in which the weighted mean was higher than the unweighted mean, not much difference was present between the two means, for either the industrial mix or the occupational mix. Over all 381 metro areas, the weighted mean was much higher than the unweighted mean. Differences between the unweighted mean and the unweighted median were erratic — for example, significant differences between the median and mean job mix values for 2001 and 2015 generally were present in the size class with employment of at least 1 million and in the size class with employment between 200,000 and 349,999, but not in the size class with employment of 350,000 to 999,999. The mean was higher than the median in most cases.

Regardless of the method used to calculate size-class figures, job mix values in 2015 ranged significantly by size class, with large metropolitan areas having the highest job quality and small metro areas having the lowest job quality, as seen in Table 1.

While job quality in 2015 calculated by the weighted mean was greater than the national average over all metropolitan areas, the size-class mean was greater than the U.S. average only in the category of employment of 1 million or more. Just 34 of the 381 metro areas (9 percent) were in this size class. However, these 34 metro areas accounted for 57 percent of the employment in all metro areas (and 49 percent of the nation's employment). The difference in the weighted mean job mix between the size classes of the largest and smallest metro areas was substantial: 10.73 in the industrial mix and 10.27 in the occupational mix.

TABLE 1
JOB QUALITY BY METROPOLITAN AREA SIZE CLASS

Employment Size Class	2015			2001-to-2015 Change		
	Industrial Mix	Occupational Mix	Job Quality	Industrial Mix	Occupational Mix	Job Quality
Weighted Mean						
All Metro Areas	0.53	0.96	0.75	-0.72	-0.29	-0.51
1 Million or More	3.63	3.88	3.75	-1.32	-0.40	-0.86
350,000 to 999,999	-1.23	-0.46	-0.85	0.12	0.16	0.14
200,000 to 349,999	-3.42	-2.63	-3.02	-0.69	-0.51	-0.60
100,000 to 199,999	-5.04	-4.69	-4.86	0.19	-0.35	-0.08
Less Than 100,000	-7.10	-6.39	-6.75	0.67	-0.17	0.25
Unweighted Mean						
All Metro Areas	-4.64	-4.05	-4.34	0.18	-0.23	-0.03
1 Million or More	3.44	3.50	3.47	-0.47	-0.04	-0.25
350,000 to 999,999	-1.14	-0.38	-0.76	0.08	0.12	0.10
200,000 to 349,999	-3.53	-2.76	-3.14	-0.61	-0.49	-0.35
100,000 to 199,999	-5.01	-4.67	-4.84	0.15	-0.37	-0.11
Less Than 100,000	-7.19	-6.46	-6.83	0.55	-0.22	0.17
Unweighted Median						
All Metro Areas	-4.94	-4.97	-4.96	0.14	-0.20	-0.03
1 Million or More	2.57	2.68	2.67	-0.56	0.12	-0.13
350,000 to 999,999	-1.29	-0.12	-0.90	0.18	0.06	0.12
200,000 to 349,999	-3.71	-3.70	-3.50	-0.67	-0.52	-0.61
100,000 to 199,999	-4.26	-5.05	-4.88	0.05	-0.38	-0.19
Less Than 100,000	-7.51	-7.10	-7.05	0.65	-0.15	0.27

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

Within the size class of employment of 1 million or more, job quality generally was higher in the largest metropolitan areas. Nearly all of the 15 metro areas with employment of more than 1.75 million had job mix values greater than the national average in 2015; based on the unweighted means, the industrial mix value was 4.22 and the occupational mix value was 4.15. Of the 19 metro areas with employment between 1-and-1.75 million, three-fourths had job mix values greater than the national average, with unweighted means of 1.67 for the industrial mix and 1.82 for the occupational mix. In the size class with employment between 350,000 and 999,999, less than half of the metro areas had positive job mix values; the proportion dropped to about 10 percent in the size class of the smallest metro areas. Over all 381 metros, less than one-fourth had job mix values greater than the national average.

Other indicators also were related to metropolitan area size. Average earnings per worker was highest in the size class of the largest metro areas and lowest in the size class of the smallest metros. The employment-to-population (E-P) ratio was about the same in the 350,000-to-999,999 size class as the 1-million-or-more size class, but the E-P ratio was lower in the other size classes. In contrast, no pattern was seen in the changes in the job mix between 2001 and 2015 across the size classes.

Since the industrial and occupational job mix values in 2001 and 2015 calculated by the weighted mean were positive for all metropolitan areas combined, average job quality in the nonmetropolitan portion of the nation was negative (below the national average). In 2001, the industrial and occupational mix values in the nonmetro area of the nation was less than in metro areas of less than 100,000 employees. However, job quality jumped between 2001 and 2015 in the nonmetro portion of the country, particularly for the industrial mix. In 2015, the nonmetro occupational mix value still was less than the figure for metro areas of less than 100,000 workers, but the nonmetro industrial mix value was higher than the figures for the less than 100,000 and 100,000-to-199,999 size classes.

Correlations

Over the 381 metropolitan areas, the correlation between the industrial mix and the occupational mix in 2015 was a high 0.85. The correlation between the 2001-to-2015 change in the industrial mix and the change in the occupational mix was not quite as high at 0.76. The changes between 2001 and 2015 in the industrial job mix and the occupational job mix were unrelated to their level in 2001.

Metropolitan area size, as measured by either population or employment, was only moderately correlated (approximately 0.3) to 2015 job mix values, with the correlations a little higher with the occupational mix than the industrial mix. The correlations between metropolitan area size and the job mixes in 2015 were relatively low due to significant outliers: a few of the small metro areas had large positive job mix values while a few of the populous metros had large negative job mix values. Metro area size had an insignificant negative relationship with the changes in the job mix values. Employment size, earnings per worker, and the employment-to-population ratio were interrelated. Earnings per worker was strongly correlated with the job mixes. Moderately strong correlation existed between the E-P ratio and the job mixes.

Job Quality in Specific Metropolitan Areas

Job quality in the nation's 34 largest metropolitan areas, as measured by employment in 2015, is shown in Table 2.¹ There is a significant difference in size between 15th-ranked Metro Detroit (1.993 million workers) and 16th-ranked Metro San Diego (1.629 million workers). Among the 15 largest metro areas, Miami stands out as the only one whose 2015 job quality was below the national average, though the value in Los Angeles was barely positive. Metro Phoenix had the next-lowest job quality in this group. In contrast, job quality exceeded 10 in the Washington, Boston, and San Francisco metro areas in 2015. Among the other 19 metro areas with employment of more than 1 million, job quality in 2015 was positive in 15, including the highest value in the country in San Jose. In contrast, job quality was far below the national average in the Riverside and Orlando metro areas.

The change in job quality between 2001 and 2015 was negative in 13 of the 15 largest metro areas, with a particularly large decline in New York, the largest metro area. In contrast, Metro Seattle experienced a strong gain in job quality. Among the other 19 metro areas with employment of more than 1 million, the change in job quality was positive in 11. However, Austin experienced a significant decrease in job quality.

¹ Metropolitan areas in this paper generally are referred to by only the first city named in the official title. For example, the full name of Metro New York is New York-Newark-Jersey City, NY-NJ-PA.

TABLE 2
JOB QUALITY IN THE LARGEST METROPOLITAN AREAS

Metropolitan Area	Employment (000) In 2015	2015			2001-to-2015 Change		
		Industrial Mix	Occupation- al Mix	Job Quality	Industrial Mix	Occupation- al Mix	Job Quality
New York-Newark, NY-NJ-PA	9,850	4.79	4.36	4.58	-4.42	-2.17	-3.29
Los Angeles-Long Beach-Anaheim, CA	6,578	-1.59	1.81	0.11	-3.32	-0.89	-2.11
Chicago-Naperville-Elgin, IL-IN-WI	4,770	2.12	3.54	2.83	-1.52	-0.61	-1.07
Dallas-Fort Worth-Arlington, TX	3,620	4.22	0.78	2.50	-0.64	-0.37	-0.50
Washington-Arlington, DC-VA-MD-WV	3,374	12.57	16.03	14.30	-1.03	0.79	-0.12
Houston-The Woodlands, TX	3,204	6.66	1.77	4.21	-1.57	-1.02	-1.30
Philadelphia-Camden, PA-NJ-DE-MD	2,963	3.51	2.42	2.97	-1.46	-1.14	-1.30
Boston-Cambridge-Newton, MA-NH	2,839	9.95	11.32	10.64	-4.17	-1.19	-2.68
Miami-Fort Lauderdale, West Palm, FL	2,715	-3.94	-2.87	-3.41	-1.05	-0.95	-1.00
Atlanta-Sandy Springs-Roswell, GA	2,683	3.34	5.31	4.33	-1.77	0.18	-0.80
San Francisco-Oakland-Hayward, CA	2,528	10.84	10.58	10.71	-1.07	0.38	-0.35
Seattle-Tacoma-Bellevue, WA	2,071	10.22	7.88	9.05	2.74	1.48	2.11
Phoenix-Mesa-Scottsdale, AZ	2,060	0.94	2.02	1.48	-1.16	-0.02	-0.59
Minneapolis-St. Paul, MN-WI	2,018	4.39	5.21	4.80	-1.13	-0.25	-0.69
Detroit-Warren-Dearborn, MI	1,993	2.50	4.15	3.32	-0.53	0.99	0.23
San Diego-Carlsbad, CA	1,629	1.02	2.94	1.98	1.10	0.69	0.89
Riverside-San Bernardino-Ontario, CA	1,556	-11.92	-8.43	-10.18	-0.73	-0.72	-0.72
Denver-Aurora-Lakewood, CO	1,523	6.93	6.91	6.92	-0.37	0.21	-0.08
Baltimore-Columbia-Towson, MD	1,460	3.73	5.90	4.81	1.68	1.14	1.41
St. Louis, MO-IL	1,435	1.29	0.55	0.92	0.03	-0.15	-0.06
Tampa-St. Petersburg-Clearwater, FL	1,313	-0.42	-0.59	-0.51	1.28	0.32	0.80
Portland-Vancouver-Hillsboro, OR-WA	1,232	2.55	3.81	3.18	-0.51	0.23	-0.14
Orlando-Kissimmee-Sanford, FL	1,215	-9.84	-6.77	-8.30	-0.59	-0.88	-0.73
Pittsburgh, PA	1,212	1.67	-0.16	0.75	2.49	0.42	1.45
Charlotte-Concord-Gastonia, NC-SC	1,198	2.85	2.12	2.48	1.95	1.52	1.74
San Jose-Sunnyvale-Santa Clara, CA	1,134	34.36	23.62	28.99	1.28	0.26	0.77
Kansas City, MO-KS	1,106	4.13	2.99	3.56	1.59	1.12	1.36
Cleveland-Elyria, OH	1,097	0.71	1.82	1.27	-0.24	0.30	0.03
Cincinnati, OH-KY-IN	1,096	2.60	1.66	2.13	1.03	0.68	0.86
Columbus, OH	1,082	2.00	1.69	1.85	0.93	0.67	0.80
San Antonio-New Braunfels, TX	1,080	-2.71	-3.83	-3.27	1.56	-0.09	0.74
Indianapolis-Carmel-Anderson, IN	1,056	0.14	1.21	0.68	-0.08	0.05	-0.01
Sacramento-Roseville-Arcade, CA	1,031	-0.46	3.95	1.75	-1.34	-0.39	-0.86
Austin-Round Rock, TX	1,017	7.88	5.13	6.50	-4.83	-1.92	-3.37

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

Industrial Mix

Eleven metropolitan areas had an industrial mix value in 2015 greater than 10. The highest value was 34.4 in Metro San Jose, which had employment of more than 1.1 million. Three metro areas with employment of more than 1.75 million also had a value exceeding 10: Washington, San Francisco, and Seattle. Eighteen metro areas had an industrial mix value of between 5 and 10, including two with employment of more than 1.75 million (Boston and Houston) and two others with more than 1 million workers: Austin and Denver.

In contrast, 76 metropolitan areas had a 2015 industrial mix value of -10 or less. The Kahului, Hawaii metro area had the lowest value of -23.1. Most of the metro areas with such low values were relatively small, but Metro Riverside, with employment of more than 1.5 million, had a value of -11.9 and Metro Las Vegas, with nearly 1 million workers, had a value of -14.2.

The industrial mix value rose by at least 5 between 2001 and 2015 in 14 metropolitan areas. The Midland, Texas metro area had the greatest gain at 14.1. Among metro areas of at least 1 million workers, the largest gain was 2.7 in Seattle. The industrial mix value decreased by at least 5 in 16 metro areas, with the largest drop of 11.1 in Corvallis, Oregon. Among metro areas of at least 1 million workers, the largest decrease was 4.8 in Austin.

Occupational Mix

Ten metropolitan areas had an occupational mix value in 2015 greater than 10. The highest value was 23.6 in Metro San Jose. Three metro areas with employment of more than 1.75 million also had a value exceeding 10: Washington, Boston, and San Francisco. Fourteen metros had an occupational mix value of between 5 and 10, including three — Seattle, Atlanta, and Minneapolis — with employment of more than 1.75 million and three others with employment of more than 1 million: Denver, Baltimore, and Austin.

In contrast, 47 metropolitan areas had a 2015 occupational mix value of -10 or less. The Yakima, Washington metro area had the lowest value of -16.3. Las Vegas was the only large metro area in this group, with a value of -11.9.

The occupational mix value did not change as much between 2001 and 2015 as the industrial mix value. The occupational mix rose by at least 3 in eight metro areas, with the largest change of 6.0 in the California-Lexington Park, Maryland metro area. Among metro areas of at least 1 million workers, the largest gain was 1.5 in Charlotte. The occupational mix value decreased by at least 3 in 10 metro areas, with the largest drop of 6.0 in Midland, Michigan. Among metro areas of at least 1 million workers, the largest decrease was 2.2 in New York.

Job Quality by Economic Cluster

Each industry has been designated as either a traded economic activity or a nontraded activity. Traded activities serve a market broader than the local labor market, selling their goods and services to customers outside the local market. Nontraded activities primarily serve local customers. Most traded activities can locate anywhere, while nontraded activities locate close to their local customers. The 1,000 industries have been grouped into 53 traded clusters and 17 nontraded clusters.

The focus of this analysis is traded clusters. Nationally, the size of the 53 traded clusters ranged very broadly in 2015, with 12 clusters employing more than 1 million (as many as 9.09 million in the business services cluster) and nine clusters employing fewer than 100,000 (as few as less than 14,000 in the tobacco cluster). Earnings per worker also ranged widely across the traded clusters, from more than \$100,000 in 13 clusters (as high as \$162,000 in the financial services cluster) to less than \$34,000 in the farming and ranching cluster.

Thus, the impact on the industrial mix varied widely by cluster due to the cluster’s size and earnings per worker. Moreover, the industrial mix value in some clusters ranged more widely across the metropolitan areas than in other clusters. In some of these clusters with a wide range, the variation across the metro areas was highly correlated to metro area size as measured by employment. Thus, the relationship between the industrial mix value and metro size described earlier largely is the result of a relatively small number of clusters.

The traded clusters that were most responsible for the variation across the metropolitan areas in the industrial mix value in 2015 are shown in Table 3. Three measures are provided of the variation in the industrial mix value:

- The range between the maximum and minimum values. Because of outliers, this measure may overstate the sensible variation.
- The number of metropolitan areas with an industrial mix value (either positive or negative) beyond a certain value. Numbers are shown for values of 1 and 0.5.

TABLE 3
VARIATION ACROSS THE METROPOLITAN AREAS IN THE INDUSTRIAL JOB MIX
IN SELECTED ECONOMIC CLUSTERS IN 2015

Traded Cluster	Highest to Lowest Range	Number of Metro Areas With a Positive or Negative Industrial Mix Value:		Difference Between the Largest and Smallest Size Classes	
		>1	>0.5	Mean	Median
Oil and Gas Production and Transportation	27.12	34	296	-0.22	0.01
Federal Government	20.27	97	261	0.10	0.44
Information Tech & Analytical Instruments	20.05	90	323	1.57	1.37
Education and Knowledge Creation	13.52	29	103	0.44	0.35
Financial Services	13.32	301	343	1.92	1.56
Business Services	12.66	291	347	3.38	3.54
Insurance Services	10.89	13	125	0.34	0.53
Farming and Ranching*	9.05	32	52	0.53	0.21
Aerospace Vehicles and Defense	8.68	16	30	0.40	0.24
Marketing, Design, and Publishing	8.58	5	80	0.72	0.40
Hospitality and Tourism*	8.04	131	174	0.21	0.09

* Earnings per worker was below average in these clusters.

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com. Most of the clusters were defined by the Institute for Strategy and Competitiveness at the Harvard Business School.

- The difference in the size-class mean and median between metropolitan areas of more than 1 million workers and those with less than 100,000 workers.

As seen in Table 3, the relationship between metropolitan area size and the industrial mix value was strongly driven by three traded clusters — business services, financial services, and information technology and analytical instruments — that disproportionately locate in large metro areas. Several other traded clusters exhibited a more modest relationship between metro area size and the industrial mix value: marketing, design, and publishing; insurance services; education and knowledge creation; farming and ranching; and aerospace vehicles and defense. In each of these clusters, the mean industrial mix value was highest in the largest size class and lowest in the smallest size class. The farming and ranching cluster's industrial mix value was inversely related to metro size; unlike the other traded clusters mentioned above, its average earnings per worker was below average.

The variation across the metropolitan areas in the 2001-to-2015 change in the industrial mix value was not as highly related to clusters as the 2015 level. The clusters exhibiting the most variation were business services; information technology and analytical instruments; oil and gas production and transportation; and marketing, design, and publishing. Consistent with the lack of overall relationship between metro area size and the change over time in the industrial mix value, the change over time was related to size in just one cluster, with only a mild relationship in business services.

Among the larger traded clusters, average earnings per worker in 2015 was below the overall figure in hospitality and tourism (the fifth-largest cluster nationally; average earnings per worker was 33 percent below average) and farming and ranching (the 10th-largest cluster nationally; average earnings per worker was 46 percent below average). Several smaller traded clusters, including those related to agriculture (such as agricultural inputs and services), also had below-average earnings per worker. Relative to most of the traded clusters, these low-paying clusters have an inverse relationship with the industrial job mix: the overall industrial job mix suffers in areas with a disproportionate portion of the economy in these clusters and the industrial job mix rises as these activities decline in relative size. For example, a decline in agricultural clusters in a particular area will boost job quality, but may cause serious economic dislocations.

While agricultural activities primarily are found in nonmetro areas, a number of mostly small metropolitan areas had considerable agricultural activity in 2015. Most of these metro areas had very low overall industrial mixes due to the negative effects from the agricultural clusters. Most of the metro areas whose overall job quality was strongly affected by agriculture are located in California or Washington. For example, of the 22 metro areas whose combined farming and ranching and agricultural inputs and services clusters had a negative impact of at least 2.5 on the industrial job mix, 14 are in California and four are in Washington. The negative effect exceeded 10 in three of these metro areas.

The magnitude of the negative effects from the hospitality and tourism cluster were not as large as for agriculture, but the overall industrial job mix in metropolitan areas with substantial tourism was negatively affected. In 30 metro areas, the industrial mix value in the hospitality and tourism cluster in 2015 was -1 or less. All three metro areas in Nevada and two in New Jersey

are among this group, the result of the gaming industry attracting tourists. Other tourist destinations with large negative impacts on the job mix are geographically dispersed, but include both metro areas in Hawaii, two in Arizona, two in South Carolina, and two in California.

JOB QUALITY BY METROPOLITAN AREA WITHIN STATES

Job quality at the state level is summarized in Table 4, for 2015 and for the change between 2001 and 2015. Including the District of Columbia as a “state,” only 21 states had an industrial mix value greater than the national average in 2015. Only two states had an industrial mix value in 2015 greater than 5, while 10 states had a value less than -5. The industrial mix value was close to the national average — between -2 and 2 — in 21 states.

Four states had an occupational mix value greater than 5 and four had a value less than -5. Otherwise, the distribution was similar to the industrial mix, with the occupational mix value less than 2 (positive or negative) in 19 states. Only 20 states had a value greater than the national average.

Relatively few states experienced a significant change in the industrial mix value between 2001 and 2015; four states had an increase of more than 3 and two states had a change in value of less than -3. The change in the industrial mix value was between -2 and 2 in 36 states. In contrast, the largest change in the occupational mix was 1.4. The change in the job mix value between 2001 and 2015 was positive in 35 states based on the industrial data and in 32 states based on the occupational data.

A state’s job quality in part reflects the distribution of its metropolitan areas by size and the relationship between metro size and job quality. For example, the occupational mix value in 2015 in Georgia was positive despite the value being negative in the nonmetropolitan balance of the state and in all but one metro area. The exception was Metro Atlanta, one of the nation’s 10 largest metro areas.

Job quality for each of the metropolitan areas in each state is shown in Table 5, with 2015 values and the change in value between 2001 and 2015 each compared to the national average and to the size-class mean for the industrial mix, the occupational mix, and job quality. For the 47 metro areas that extend across state lines, the metros are listed in each state, with job quality calculated only for each state’s portion of the metro area. For these metro area portions, job quality relative to the size-class average is based on the employment of the entire metro area. See the Appendix for job quality totals for these 47 metro areas.

Based on the job quality measure (the average of the industrial mix and the occupational mix), a summary of the metropolitan areas of each state follows, with comparisons made relative to the size-class mean:

- Alabama. Five of the 13 metro areas at least partially in Alabama had above-average job quality in 2015, including each of the four largest metros. Metro Huntsville had the seventh-highest value among the 381 metro areas, but two of the smaller metros had a value among the bottom 10 percent. In seven of the 13 metro areas, the 2001-to-2015 change in job quality was above average.
- Alaska. Each of the two metro areas had above-average job quality in 2015, but experienced a below-average change between 2001 and 2015.
- Arizona. Only two of the seven metro areas had above-average job quality in 2015, though Sierra Vista ranked in the top 10 percent. In five metro areas, the change from

**TABLE 4
JOB QUALITY BY STATE**

	2015			2001-to-2015 Change		
	Industrial Mix	Occupational Mix	Job Quality	Industrial Mix	Occupational Mix	Job Quality
Alabama	-1.62	-3.86	-2.74	1.33	0.07	0.70
Alaska	1.94	0.46	1.20	0.54	-0.74	-0.10
Arizona	-0.61	0.52	-0.05	-0.39	0.22	-0.08
Arkansas	-4.09	-4.09	-4.09	1.04	0.68	0.86
California	0.20	1.97	1.08	-1.64	-0.57	-1.10
Colorado	2.30	3.24	2.77	-0.32	0.02	-0.15
Connecticut	4.02	5.52	4.77	-1.14	-0.79	-0.96
Delaware	4.51	1.38	2.95	-2.83	-1.37	-2.10
District of Columbia	25.90	32.34	29.12	-2.73	1.06	-0.84
Florida	-5.37	-4.02	-4.69	0.26	-0.47	-0.11
Georgia	0.40	0.91	0.65	0.22	0.83	0.52
Hawaii	-9.33	-4.45	-6.89	0.61	0.24	0.43
Idaho	-5.29	-3.39	-4.34	-2.76	-0.61	-1.68
Illinois	1.36	2.66	2.01	-0.41	-0.03	-0.22
Indiana	-3.34	-2.51	-2.92	0.85	0.12	0.48
Iowa	-4.25	-4.19	-4.22	2.28	0.89	1.58
Kansas	0.05	-2.51	-1.23	0.33	0.12	0.23
Kentucky	-3.35	-4.29	-3.82	1.09	0.29	0.69
Louisiana	-0.45	-3.85	-2.15	-0.35	-0.38	-0.36
Maine	-6.48	-1.67	-4.07	0.22	0.77	0.49
Maryland	3.55	6.47	5.01	1.44	1.22	1.33
Massachusetts	5.44	9.33	7.39	-3.37	-0.55	-1.96
Michigan	-1.35	0.19	-0.58	-0.08	0.75	0.33
Minnesota	1.32	1.41	1.37	-0.20	-0.04	-0.12
Mississippi	-6.35	-5.95	-6.15	0.86	0.33	0.60
Missouri	-0.85	-1.78	-1.32	1.01	0.22	0.62
Montana	-6.71	-5.23	-5.97	1.73	0.54	1.13
Nebraska	-2.77	-3.26	-3.02	2.04	0.97	1.50

(continued)

**TABLE 4 (continued)
JOB QUALITY, STATES**

	2015			2001-to-2015 Change		
	Industrial Mix	Occupation- al Mix	Job Quality	Industrial Mix	Occupation- al Mix	Job Quality
Nevada	-11.12	-9.74	-10.43	-0.36	-0.11	-0.23
New Hampshire	-0.36	0.78	0.21	0.40	0.50	0.45
New Jersey	2.70	2.46	2.58	-3.95	-1.21	-2.58
New Mexico	-0.30	-1.53	-0.92	0.81	-0.37	0.22
New York	3.43	2.84	3.13	-2.26	-1.40	-1.83
North Carolina	-1.57	-2.65	-2.11	2.25	1.22	1.73
North Dakota	0.54	-4.59	-2.02	5.71	1.23	3.47
Ohio	-0.60	-1.07	-0.84	1.53	0.88	1.20
Oklahoma	1.78	-0.51	0.63	3.74	1.10	2.42
Oregon	-3.18	-0.89	-2.03	-0.64	-0.15	-0.39
Pennsylvania	-0.29	-1.68	-0.98	0.40	-0.42	-0.01
Rhode Island	-0.80	1.45	0.33	3.04	0.99	2.02
South Carolina	-5.16	-4.44	-4.80	1.59	0.76	1.17
South Dakota	-5.21	-7.34	-6.28	0.72	-0.03	0.34
Tennessee	-4.17	-3.19	-3.68	0.38	0.25	0.32
Texas	2.27	-1.68	0.30	0.50	-0.27	0.12
Utah	2.87	1.16	2.01	1.48	1.08	1.28
Vermont	-5.47	-1.96	-3.72	0.04	0.15	0.10
Virginia	3.36	3.29	3.33	0.46	1.28	0.87
Washington	3.02	2.20	2.61	2.29	1.13	1.71
West Virginia	-0.01	-3.80	-1.90	1.71	-0.02	0.85
Wisconsin	-2.37	-3.66	-3.01	2.25	0.54	1.40
Wyoming	1.61	-3.45	-0.92	3.38	1.00	2.19

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

2001 to 2015 was above average, with two of the metro areas in the top 10 percent in the nation. However, the two most-populous metro areas of Phoenix and Tucson had below-average levels and changes in job quality.

- Arkansas. Three of eight metro areas had above-average job quality in 2015, including each of the two largest metros (Little Rock and Fayetteville). Only two metros experienced an above-average change in job quality between 2001 and 2015, but Fayetteville was among the top 5 percent of the 381 metro areas.
- California. All but two of the state's 26 metro areas had below-average job quality in 2015, with nine metros among the bottom 10 percent; the Salinas and Riverside metro areas had the two lowest values in the nation. However, the two exceptions — San Francisco and San Jose — are large metro areas with job quality in the top 10 percent of the nation. San Jose had the second-highest value nationally. Only seven metro areas experienced an above-average change in job quality between 2001 and 2015; five were among the bottom 10 percent.
- Colorado. Job quality in 2015 was above average in six of the seven metro areas. Boulder's value was fourth highest nationally. The change between 2001 and 2015 was above average in four metros, but Colorado Springs was in the bottom 5 percent.
- Connecticut. Three of the five metro areas had above-average job quality in 2015, including the two largest metros of Hartford and Bridgeport, with each ranked in the top 10 percent. Each of the five metros experienced a below-average change in job quality between 2001 and 2015, with New Haven and Norwich in the bottom 10 percent.
- Delaware. The portion of the Philadelphia metro area within Delaware had a strong job quality in 2015, but Metro Salisbury was in the bottom 5 percent. Each of the three metros experienced a below-average change in job quality between 2001 and 2015, with Salisbury in the bottom 10 percent.
- Florida. Only three of the 22 metro areas had above-average job quality in 2015. Most of the larger metros had values well below the norm and nine of the metros had a value in the bottom 10 percent. Fifteen of the metros experienced a below-average change in job quality between 2001 and 2015; three of the smaller metros were in the bottom 10 percent.
- Georgia. Job quality in 2015 was above average in 10 of the 15 metro areas, including each of the six largest; Warner-Robins was in the top 5 percent. Nine of the metro areas experienced an above-average change in job quality between 2001 and 2015, with three in the top 10 percent. However, the change was below average in the state's dominant metro area of Atlanta.
- Hawaii. Each of the two metro areas had below-average job quality in 2015 but experienced an above-average change between 2001 and 2015. Kahului was in the bottom 5 percent in 2015.
- Idaho. Four of the six metro areas had above-average job quality in 2015, including Boise, the largest metro. Idaho Falls was in the top 10 percent. Three of the metro areas had an above-average change in value between 2001 and 2015, but Boise and Idaho Falls ranked among the bottom 5 percent.
- Illinois. Ten of 13 metro areas had an above-average job quality in 2015; eight experienced an above-average change between 2001 and 2015. Chicago, the dominant metro area, had a 2015 value marginally above average; its change was below average.

Four of the smaller metro areas ranked in the top 10 percent in 2015 and three were in the top 5 percent on the change.

- Indiana. Ten of 15 metro areas, including the three largest, had below-average job quality in 2015. The portion of Metro Chicago in Indiana was in the bottom 5 percent; the Indiana portion of the Louisville and Cincinnati metro areas also had very low values. Only six of the metros experienced an above-average change between 2001 and 2015.
- Iowa. Five of nine metro areas, including the three largest, had above-average job quality in 2015. Cedar Rapids was in the top 10 percent. All nine metro areas experienced an above-average change in value between 2001 and 2015, with two in the top 10 percent.
- Kansas. Five of six metro areas, including the two largest of Kansas City and Wichita, had above-average job quality in 2015. Three of the metros experienced a below-average change in value between 2001 and 2015, with Wichita ranking seventh lowest nationally. However, Kansas City had a gain among the top 10 percent.
- Kentucky. Four of nine metro areas had above-average job quality in 2015. The six largest metro areas experienced an above-average change in value between 2001 and 2015; the other three were below average.
- Louisiana. Six of nine metro areas had above-average job quality in 2015, with Houma in the top 10 percent. However, New Orleans, the largest metro area, was a little below average. Only two metro areas experienced an above-average change in value between 2001 and 2015.
- Maine. Each of the three metro areas had above-average job quality in 2015. Two experienced an above-average change between 2001 and 2015.
- Maryland. Five of seven metro areas, including the two largest of Baltimore and Washington D.C., had above-average job quality in 2015. All but one metro experienced an above-average change in value between 2001 and 2015. The California-Lexington Park metro area ranked first among the 381 metros on the 2015 value and second on the change. A large naval air station dominates this small metro's economy.
- Massachusetts. Three of six metro areas had above-average job quality in 2015, including Boston, one of the nation's largest metro areas, which ranked in the top 10 percent. Only one of the metro areas experienced an above-average change between 2001 and 2015; Boston was among the bottom 10 percent.
- Michigan. Nine of 15 metro areas had above-average job quality in 2015, including Ann Arbor, which ranked in the top 5 percent. Eight of the metro areas experienced an above-average change between 2001 and 2015, with two in the top 5 percent — but two others were in the bottom 5 percent. Detroit, the largest metro area, had near-average job quality and a slightly above-average change.
- Minnesota. Only two of eight metro areas had above-average job quality in 2015, but this included Minneapolis — the largest metro area — and Rochester, which ranked in the top 5 percent. Two of the small metro areas were among the lowest 10 percent. Five of the metro areas, including Minneapolis and Rochester, experienced a below-average change in job quality between 2001 and 2015. Rochester ranked in the bottom 5 percent.
- Mississippi. Two of four metro areas — the two largest of Jackson and Gulfport — had above-average job quality in 2015. Two of the metro areas experienced an above-average change between 2001 and 2015. The metro areas provided less than half of the state's employment.

- Missouri. Only in two of nine metro areas was the job quality in 2015 above average. It was below average in the two largest metro areas of St. Louis and Kansas City. The 2001-to-2015 change in job quality was above average in six of the metro areas.
- Montana. Metro areas accounted for a minority of the state's employment. One of the three metros had above-average job quality in 2015; two had an above-average change between 2001 and 2015.
- Nebraska. The larger two of the four metro areas — Omaha and Lincoln — had above-average job quality in 2015. All four metro areas had an above-average change between 2001 and 2015.
- Nevada. Las Vegas, the largest metro area, was sixth lowest in the country in job quality in 2015; its 2001-to-2015 change was a little below average. One of the other two metro areas had above-average job quality in 2015; both had an above-average change.
- New Hampshire. Metro Manchester's job quality in 2015 was in the top 5 percent; it had an above-average change between 2001 and 2015. In contrast, the New Hampshire portion of Metro Boston was below average on the level and the change.
- New Jersey. Two of seven metro areas had above-average job quality in 2015. Metro Trenton had the sixth-highest figure in the nation, but two metro areas were in the bottom 10 percent. Three metro areas had an above-average gain between 2001 and 2015, including Trenton, which was in the top 10 percent. The dominant metro area of New York was slightly above average in 2015, but its change between 2001 and 2015 was in the bottom 5 percent.
- New Mexico. All four metro areas had above-average job quality in 2015. Albuquerque, the largest metro, was one of two to experience a below-average change between 2001 and 2015.
- New York. Half of the 12 metro areas had an above-average job quality value in 2015, including Metro New York, by far the largest. Only three of the metro areas had an above-average 2001-to-2015 change; Metro New York and three other metro areas were among the bottom 10 percent.
- North Carolina. Only four of the 17 metro areas had above-average job quality in 2015; Charlotte, the largest metro, was barely below average. However, Durham-Chapel Hill had the fifth-highest value in the nation. Eleven of the metro areas, including Charlotte and Durham, had an above-average change between 2001 and 2015, but three of the smaller metros were among the bottom 5 percent.
- North Dakota. The state's three metro areas accounted for only half of the state's employment. Job quality in 2015 was above average in two metro areas; the change between 2001 and 2015 was above average in two metros.
- Ohio. Only four of 14 metro areas had an above-average job quality value in 2015. Each of the three largest metro areas — Cleveland, Columbus, and Cincinnati — was below average. The change in job quality between 2001 and 2015 was above average in nine metro areas, including each of the six largest; two metros ranked in the top 5 percent.
- Oklahoma. Three of four metro areas had an above-average job quality value in 2015, including the two largest of Oklahoma City and Tulsa. Three metros, including Oklahoma City, ranked in the top 10 percent on the change in job quality between 2001 and 2015.

- Oregon. Only two of eight metro area had above-average job quality in 2015 and only two had an above-average change between 2001 and 2015. Portland, by far the largest metro area, was barely above average in 2015 and had an average change over time.
- Pennsylvania. Only six of 20 metro areas had above-average job quality in 2015. Seven metro areas had an above-average change in job quality between 2001 and 2015. Philadelphia, the largest metro area, was barely above average in 2015 following a below-average change. Pittsburgh, the second-largest metro, was below average in 2015 but had an above-average change.
- Rhode Island. Metro Providence covers nearly all of the state. Its job quality in 2015 and its change between 2001 and 2015 each was above average.
- South Carolina. Job quality in 2015 was below average in seven of 10 metro areas, including each of the three largest metros of Greenville, Columbia, and Charleston. Three others were among the bottom 10 percent, including the tourist destinations of Myrtle Beach and Hilton Head Island. Greenville and Charleston were among five metro areas with an above-average change in job quality between 2001 and 2015; Charleston was in the top 5 percent.
- South Dakota. The state's three metro areas accounted for only half of the state's employment. Job quality in 2015 was above average in one metro area; the change between 2001 and 2015 was above average in one metro.
- Tennessee. Four of 10 metro areas had above-average job quality in 2015, while three had an above-average change between 2001 and 2015. Nashville, the largest metro area, was above average on both the level and the change but Memphis, the second largest metro, was below average on the level and on the change.
- Texas. Both the level and change in job quality varied greatly across the 25 metro areas in Texas. Ten had above-average job quality in 2015, including values in the top 10 percent in Midland (third nationally) and Odessa. Of the two very large metro areas, Houston was a little above average but Dallas was a little below average. Four metro areas, including three along the Rio Grande, had values in the bottom 10 percent. The change between 2001 and 2015 was above average in 15 metro areas and in the top 10 percent in six, including Midland, which had the largest gain in the country. The change was below average in both Dallas and Houston. In three metro areas, the change was in the bottom 10 percent; Sherman had the weakest change in the country.
- Utah. Four of five metro areas were above average on job quality in 2015; Salt Lake City was the largest metro and ranked in the top 10 percent. Four metro areas were above average on the 2001-to-2015 change. Each of the three largest metros — Salt Lake City, Ogden, and Provo — was above average on both the level and the change.
- Vermont. Burlington, the state's lone metro area, was in the top 10 percent on job quality in 2015 but its change between 2001 and 2015 was below average. More than 60 percent of the state's employment was in the balance of the state.
- Virginia. Six of 11 metro areas were above average on job quality in 2015 and five were above average on the 2001-to-2015 change. Metro Washington D.C. ranked in the top 10 percent in 2015; it had little change between 2001 and 2015. Virginia Beach, the second-largest metro, had a below-average value in 2015 but an above-average change, while Metro Richmond was above average in 2015 but below average on the change.
- Washington. Only four of 13 metro areas had an above-average job quality value in 2015, but this included Seattle, by far the state's largest metro area. In contrast, job quality in

the Wenatchee and Yakima metro areas were among the bottom 5 percent in the nation. Job quality improved by more than average in nine of the metro areas, including ranks in the top 10 percent in Seattle and Bremerton.

- West Virginia. Eight of 11 metro areas had above-average job quality in 2015, including each of the six largest metros. Charleston and Morgantown were in the top 10 percent. The change in job quality between 2001 and 2015 was above average in five metro areas, with Morgantown in the top 10 percent.
- Wisconsin. Eight of 15 metro areas had above-average job quality in 2015, including each of the three largest metros. The change in job quality between 2001 and 2015 was above average in 10 metro areas. Following the fifth-largest gain between 2001 and 2015, job quality in Metro Madison was in the top 10 percent in the country in 2015.
- Wyoming. The two metro areas of Casper and Cheyenne accounted for less than one-third of the state's employment in 2015. Each had job quality in 2015 among the top 10 percent and an above-average change between 2001 and 2015.

TABLE 5
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
ALABAMA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
ALABAMA	2,118.3	-1.62	-3.86	-2.74	1.33	0.07	0.70						
Birmingham	25.4%	0.61	0.53	0.57	0.35	0.02	0.19	1.75	0.91	1.33	0.27	-0.10	0.09
Huntsville	10.8	13.83	10.99	12.41	-2.11	0.83	-0.64	17.36	13.75	15.56	-1.50	1.32	-0.09
Mobile	8.9	-2.18	-3.38	-2.78	1.14	-0.37	0.39	2.83	1.29	2.06	0.99	0.00	0.50
Montgomery	8.5	-0.94	-5.18	-3.06	2.75	-0.73	1.01	4.07	-0.51	1.78	2.60	-0.36	1.12
Tuscaloosa	5.2	-4.56	-9.45	-7.01	-2.06	-2.94	-2.50	0.45	-4.78	-2.17	-2.21	-2.57	-2.39
Daphne	3.6	-20.87	-13.58	-17.23	-1.52	-1.86	-1.69	-13.68	-7.12	-10.40	-2.07	-1.64	-1.86
Auburn	3.0	-12.34	-8.86	-10.60	0.05	-0.93	-0.44	-5.15	-2.40	-3.78	-0.50	-0.71	-0.61
Dothan	2.9	-7.45	-8.55	-8.00	0.57	0.24	0.40	-0.26	-2.09	-1.18	0.02	0.46	0.24
Florence	2.8	-8.28	-9.89	-9.09	1.93	-1.26	0.34	-1.09	-3.43	-2.26	1.38	-1.04	0.17
Decatur	2.7	-4.38	-7.67	-6.03	-0.94	-0.98	-0.96	2.81	-1.21	0.80	-1.49	-0.76	-1.13
Anniston	2.3	-4.36	-9.59	-6.98	1.35	-0.50	0.43	2.83	-3.13	-0.15	0.80	-0.28	0.26
Gadsden	1.9	-12.53	-11.42	-11.98	1.54	-0.41	0.57	-5.34	-4.96	-5.15	0.99	-0.19	0.40
Columbus (pt)	0.7	-14.10	-10.71	-12.41	-0.28	0.00	-0.14	-9.09	-6.04	-7.57	-0.43	0.37	-0.03
Balance of State	21.3	-2.99	-9.20	-6.10	5.61	1.84	3.72						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Alabama

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
ALASKA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
ALASKA	390.8	1.94	0.46	1.20	0.54	-0.74	-0.10						
Anchorage	53.1%	0.10	2.49	1.30	-1.34	-1.51	-1.43	3.63	5.25	4.44	-0.73	-1.02	-0.88
Fairbanks	12.8	-3.67	-2.14	-2.91	-0.21	-1.47	-0.84	3.52	4.32	3.92	-0.76	-1.25	-1.01
Balance of State	34.1	6.92	-1.72	2.60	3.75	0.73	2.24						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
ARIZONA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
ARIZONA	2,908.9	-0.61	0.52	-0.05	-0.39	0.23	-0.08						
Phoenix	70.8%	0.94	2.02	1.48	-1.16	-0.02	-0.59	-2.50	-1.48	-1.99	-0.69	0.02	-0.34
Tucson	14.1	-2.33	-1.30	-1.82	-1.56	-0.52	-1.04	-1.19	-0.92	-1.06	-1.64	-0.64	-1.14
Yuma	2.6	-13.55	-11.86	-12.71	6.08	4.32	5.20	-6.36	-5.40	-5.88	5.53	4.54	5.04
Prescott	2.4	-13.83	-6.32	-10.08	1.32	-0.03	0.65	-6.64	0.14	-3.25	0.77	0.19	0.48
Flagstaff	2.4	-8.96	-4.06	-6.51	2.24	0.26	1.25	-1.77	2.40	0.32	1.69	0.48	1.09
Lake Havasu City	1.8	-14.65	-8.85	-11.75	0.44	0.01	0.23	-7.46	-2.39	-4.93	-0.11	0.23	0.06
Sierra Vista	1.5	-0.65	1.84	0.60	4.74	3.21	3.98	6.54	8.30	7.42	4.19	3.43	3.81
Balance of State	4.4	5.24	-0.80	2.22	7.49	3.45	5.47						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
ARKANSAS

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean						
		2015			2001-to-2015 Change			IM	2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ		OM	JQ	IM	OM	JQ	
ARKANSAS	1,328.9	-4.09	-4.09	-4.09	1.04	0.68	0.86							
Little Rock	27.8%	0.86	3.32	2.09	-0.13	0.25	0.06	2.00	3.70	2.85	-0.21	0.13	-0.04	
Fayetteville (pt)	17.8	0.89	-0.79	0.05	3.35	1.92	2.64	4.42	1.97	3.20	3.96	2.41	3.19	
Fort Smith (pt)	7.0	-5.88	-8.02	-6.95	-0.30	0.09	-0.11	1.31	-1.56	-0.12	-0.85	0.31	-0.27	
Jonesboro	4.4	-12.56	-7.02	-9.79	-2.42	-0.99	-1.71	-5.37	-0.56	-2.97	-2.97	-0.77	-1.87	
Hot Springs	3.1	-16.17	-9.03	-12.60	-1.73	-1.63	-1.68	-8.98	-2.57	-5.78	-2.28	-1.41	-1.85	
Pine Bluff	2.8	-3.10	-5.88	-4.49	1.04	0.22	0.63	4.09	0.58	2.34	0.49	0.44	0.47	
Memphis (pt)	1.5	-15.98	-12.50	-14.24	-1.45	-1.67	-1.56	-14.84	-12.12	-13.48	-1.53	-1.79	-1.66	
Texarkana (pt)	1.4	-7.78	-9.09	-8.44	0.48	-0.40	0.04	-0.59	-2.63	-1.61	-0.07	-0.18	-0.13	
Balance of State	34.3	-7.55	-9.46	-8.50	1.89	1.11	1.50							

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Arkansas

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
CALIFORNIA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
CALIFORNIA	18,508.0	0.20	1.97	1.09	-1.63	-0.57	-1.10						
Los Angeles	35.5%	-1.59	1.81	0.11	-3.32	-0.89	-2.11	-5.03	-1.69	-3.36	-2.85	-0.85	-1.85
San Francisco	13.7	10.84	10.58	10.71	-1.06	0.38	-0.34	7.40	7.08	7.24	-0.59	0.42	-0.08
San Diego	8.8	1.02	2.94	1.98	1.10	0.69	0.90	-2.42	-0.56	-1.49	1.57	0.73	1.15
Riverside	8.4	-11.92	-8.43	-10.18	-0.73	-0.71	-0.72	-15.36	-11.93	-13.65	-0.26	-0.67	-0.47
San Jose	6.1	34.36	23.62	28.99	1.28	0.26	0.77	30.92	20.12	25.52	1.75	0.30	1.03
Sacramento	5.6	-0.46	3.95	1.75	-1.34	-0.39	-0.87	-3.90	0.45	-1.73	-0.87	-0.35	-0.61
Fresno	2.2	-13.41	-8.77	-11.09	-0.10	0.92	0.41	-12.27	-8.39	-10.33	-0.18	0.80	0.31
Oxnard	2.0	-6.11	-2.27	-4.19	-5.00	-2.49	-3.75	-4.97	-1.89	-3.43	-5.08	-2.61	-3.85
Bakersfield	1.9	-7.76	-8.76	-8.26	-1.22	-1.55	-1.39	-4.23	-6.00	-5.12	-0.61	-1.06	-0.84
Stockton	1.4	-12.83	-10.65	-11.74	-0.54	-1.36	-0.95	-9.30	-7.89	-8.60	0.07	-0.87	-0.40
Santa Rosa	1.2	-10.17	-4.37	-7.27	-5.46	-3.31	-4.39	-6.64	-1.61	-4.13	-4.85	-2.82	-3.84
Santa Maria	1.2	-8.33	-4.83	-6.58	-1.39	-1.34	-1.37	-4.80	-2.07	-3.44	-0.78	-0.85	-0.82
Salinas	1.1	-21.01	-15.61	-18.31	-4.97	-4.18	-4.58	-17.48	-12.85	-15.17	-4.36	-3.69	-4.03
Modesto	1.1	-15.18	-10.64	-12.91	-1.56	-0.64	-1.10	-10.17	-5.97	-8.07	-1.71	-0.27	-0.99
Visalia	0.9	-19.27	-15.77	-17.52	-1.41	-1.84	-1.63	-14.26	-11.10	-12.68	-1.56	-1.47	-1.52
Vallejo	0.8	-4.86	-5.07	-4.97	2.19	0.02	1.11	0.15	-0.40	-0.13	2.04	0.39	1.22
San Luis Obispo	0.7	-9.98	-6.92	-8.45	-0.38	-0.78	-0.58	-4.97	-2.25	-3.61	-0.53	-0.41	-0.47
Santa Cruz	0.6	-13.57	-4.24	-8.91	-3.73	-1.85	-2.79	-8.56	0.43	-4.07	-3.88	-1.48	-2.68
Chico	0.5	-13.96	-7.52	-10.74	-0.08	-0.14	-0.11	-6.77	-1.06	-3.92	-0.63	0.08	-0.28
Merced	0.5	-18.26	-13.46	-15.86	0.85	0.85	0.85	-11.07	-7.00	-9.04	0.30	1.07	0.68
Napa	0.5	-15.45	-9.09	-12.27	-3.02	-1.93	-2.48	-8.26	-2.63	-5.45	-3.57	-1.71	-2.64
Redding	0.4	-12.52	-5.17	-8.85	-1.45	-0.11	-0.78	-5.33	1.29	-2.02	-2.00	0.11	-0.95
El Centro	0.4	-17.13	-15.56	-16.35	-0.93	0.37	-0.28	-9.94	-9.10	-9.52	-1.48	0.59	-0.45
Yuba	0.3	-14.34	-9.86	-12.10	0.64	0.46	0.55	-7.15	-3.40	-5.28	0.09	0.68	0.39
Hanford	0.3	-11.20	-11.99	-11.60	4.12	2.01	3.07	-4.01	-5.53	-4.77	3.57	2.23	2.90
Madera	0.3	-15.23	-12.29	-13.76	1.20	0.23	0.72	-8.04	-5.83	-6.94	0.65	0.45	0.55
Balance of State	3.7	8.47	5.40	6.93	-0.91	-2.24	-1.58						

(continued)

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
CALIFORNIA (continued)

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
COLORADO

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean						
		2015			2001-to-2015 Change			IM	2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ		OM	JQ	IM	OM	JQ	
COLORADO	2,831.1	2.30	3.24	2.77	-0.32	0.03	-0.15							
Denver	53.8%	6.93	6.91	6.92	-0.36	0.21	-0.08	3.49	3.41	3.45	0.11	0.25	0.18	
Colorado Springs	12.0	-3.78	0.08	-1.85	-6.72	-2.21	-4.47	-2.64	0.46	-1.09	-6.80	-2.33	-4.57	
Boulder	6.9	12.60	12.61	12.61	-4.18	-0.61	-2.40	17.61	17.28	17.45	-4.33	-0.24	-2.29	
Fort Collins	6.0	-2.49	0.75	-0.87	0.02	-0.92	-0.45	2.52	5.42	3.97	-0.13	-0.55	-0.34	
Greeley	4.1	-2.21	-5.98	-4.10	5.97	0.55	3.26	2.80	-1.31	0.74	5.82	0.92	3.37	
Grand Junction	2.4	-7.36	-3.30	-5.33	3.79	1.12	2.46	-0.17	3.16	1.50	3.24	1.34	2.29	
Pueblo	2.3	-7.84	-5.57	-6.71	2.28	0.89	1.59	-0.65	0.89	0.12	1.73	1.11	1.42	
Balance of State	12.6	-9.92	-7.52	-8.72	4.57	1.66	3.12							

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
CONNECTICUT

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
CONNECTICUT	1,849.9	4.02	5.52	4.77	-1.14	-0.79	-0.97						
Hartford	36.2%	5.43	7.56	6.50	-0.61	-0.62	-0.62	6.57	7.94	7.26	-0.69	-0.74	-0.72
Bridgeport	25.7	13.01	7.24	10.13	-0.72	-1.69	-1.21	14.15	7.62	10.89	-0.80	-1.81	-1.31
New Haven	22.0	-4.94	3.07	-0.94	-4.58	-1.83	-3.21	-3.80	3.45	-0.18	-4.66	-1.95	-3.31
Norwich	7.5	-1.24	0.31	-0.47	-3.75	-1.46	-2.61	3.77	4.98	4.38	-3.90	-1.09	-2.50
Worcester (pt)	2.4	-12.59	-4.36	-8.48	-1.84	-1.40	-1.62	-11.45	-3.98	-7.72	-1.92	-1.52	-1.72
Balance of State	6.3	2.97	5.24	4.10	9.51	6.60	8.06						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Connecticut

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
DELAWARE

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			IM	2015			2001-to-2015 Change	
		IM	OM	JQ	IM	OM	JQ			OM	JQ	IM	OM
DELAWARE	474.5	4.51	1.37	2.94	-2.83	-1.37	-2.10						
Philadelphia (pt)	65.0%	13.54	6.79	10.17	-1.27	-0.54	-0.91	10.10	3.29	6.70	-0.80	-0.50	-0.65
Salisbury (pt)	17.3	-20.20	-12.31	-16.26	-4.61	-1.28	-2.95	-15.19	-7.64	-11.42	-4.76	-0.91	-2.84
Dover	15.6	-8.67	-7.97	-8.32	-0.26	-0.50	-0.38	-1.48	-1.51	-1.50	-0.81	-0.28	-0.55
Balance of State	2.1	26.80	15.93	21.37	-56.50	-34.84	-45.67						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Delaware

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
FLORIDA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
FLORIDA	8,942.8	-5.37	-4.02	-4.70	0.26	-0.48	-0.11						
Miami	30.4%	-3.94	-2.87	-3.41	-1.05	-0.95	-1.00	-7.38	-6.37	-6.88	-0.58	-0.91	-0.75
Tampa	14.7	-0.42	-0.59	-0.51	1.28	0.32	0.80	-3.86	-4.09	-3.98	1.75	0.36	1.06
Orlando	13.6	-9.84	-3.84	-6.84	-0.58	-0.09	-0.34	-13.28	-7.34	-10.31	-0.11	-0.05	-0.08
Jacksonville	7.6	-1.56	-2.57	-2.07	0.63	0.17	0.40	-0.42	-2.19	-1.31	0.55	0.05	0.30
North Port	3.4	-12.61	-8.25	-10.43	1.26	-0.87	0.20	-9.08	-5.49	-7.29	1.87	-0.38	0.75
Cape Coral	3.0	-12.75	-9.22	-10.99	-1.48	-1.84	-1.66	-9.22	-6.46	-7.84	-0.87	-1.35	-1.11
Lakeland	2.5	-7.31	-8.39	-7.85	-1.18	-1.08	-1.13	-3.78	-5.63	-4.71	-0.57	-0.59	-0.58
Palm Bay	2.4	2.67	1.67	2.17	-1.60	0.20	-0.70	6.20	4.43	5.32	-0.99	0.69	-0.15
Deltona	2.3	-14.76	-9.76	-12.26	-0.95	-0.96	-0.95	-11.23	-7.00	-9.12	-0.34	-0.47	-0.40
Pensacola	2.1	-8.59	-7.60	-8.10	-1.09	-1.39	-1.24	-3.58	-2.93	-3.26	-1.24	-1.02	-1.13
Tallahassee	2.0	-3.05	4.17	0.56	-0.77	-1.65	-1.21	1.96	8.84	5.40	-0.92	-1.28	-1.10
Naples	1.7	-17.42	-11.24	-14.33	0.84	-0.63	0.11	-12.41	-6.57	-9.49	0.69	-0.26	0.22
Port St. Lucie	1.7	-12.78	-8.65	-10.72	1.36	0.32	0.84	-7.77	-3.98	-5.88	1.21	0.69	0.95
Gainesville	1.6	-3.49	4.04	0.28	1.25	-1.38	-0.06	1.52	8.71	5.12	1.10	-1.01	0.05
Crestview	1.4	-10.00	-7.26	-8.63	0.98	-0.40	0.29	-4.99	-2.59	-3.79	0.83	-0.03	0.40
Ocala	1.2	-12.99	-9.87	-11.43	-1.94	-0.86	-1.40	-7.98	-5.20	-6.59	-2.09	-0.49	-1.29
Panama City	1.0	-10.27	-9.04	-9.66	0.65	-0.87	-0.11	-3.08	-2.58	-2.83	0.10	-0.65	-0.27
Sebastian	0.6	-16.32	-11.44	-13.88	-3.66	-1.89	-2.78	-9.13	-4.98	-7.06	-4.21	-1.67	-2.94
Punta Gorda	0.6	-17.37	-10.82	-14.10	-1.38	-1.88	-1.63	-10.18	-4.36	-7.27	-1.93	-1.66	-1.80
Homosassa													
Springs	0.4	-14.67	-9.78	-12.23	-7.96	-3.90	-5.93	-7.48	-3.32	-5.40	-8.51	-3.68	-6.10
Sebring	0.3	-20.53	-13.87	-17.20	-0.51	-0.89	-0.70	-13.34	-7.41	-10.38	-1.06	-0.67	-0.87
The Villages	0.3	-8.11	-9.68	-8.90	-8.38	-3.17	-5.78	-0.92	-3.22	-2.07	-8.93	-2.95	-5.94
Balance of State	5.2	3.17	-9.33	-3.08	11.23	1.04	6.14						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
GEORGIA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
GEORGIA	4,668.7	0.40	0.91	0.66	0.22	0.84	0.53						
Atlanta	57.5%	3.34	5.31	4.33	-1.77	0.18	-0.80	-0.10	1.81	0.86	-1.30	0.22	-0.54
Savannah	3.9	-2.94	-3.51	-3.23	1.00	0.17	0.59	2.07	1.16	1.62	0.85	0.54	0.70
Augusta (pt)	3.8	-3.77	-3.85	-3.81	3.30	1.19	2.25	1.24	0.82	1.03	3.15	1.56	2.36
Columbus (pt)	2.8	-1.31	-3.72	-2.52	-1.37	0.49	-0.44	3.70	0.95	2.33	-1.52	0.86	-0.33
Macon	2.3	-2.84	-3.66	-3.25	1.36	1.10	1.23	2.17	1.01	1.59	1.21	1.47	1.34
Athens	2.0	-5.21	-2.77	-3.99	-1.50	0.36	-0.57	1.98	3.69	2.84	-2.05	0.58	-0.74
Gainesville	1.9	-7.04	-7.62	-7.33	2.84	-0.03	1.41	0.15	-1.16	-0.51	2.29	0.19	1.24
Warner Robins	1.7	6.58	-0.61	2.99	-1.22	-2.17	-1.70	13.77	5.85	9.81	-1.77	-1.95	-1.86
Dalton	1.5	-7.52	-9.01	-8.27	-0.83	-1.79	-1.31	-0.33	-2.55	-1.44	-1.38	-1.57	-1.48
Albany	1.4	-5.05	-5.27	-5.16	0.28	1.06	0.67	2.14	1.19	1.67	-0.27	1.28	0.51
Valdosta	1.4	-11.22	-9.65	-10.44	1.04	0.29	0.66	-4.03	-3.19	-3.61	0.49	0.51	0.50
Brunswick	1.0	-11.84	-7.26	-9.55	-2.03	-0.30	-1.17	-4.65	-0.80	-2.73	-2.58	-0.08	-1.33
Rome	0.9	-4.27	-3.05	-3.66	2.98	1.84	2.41	2.92	3.41	3.17	2.43	2.06	2.25
Hinesville	0.8	-4.30	-8.83	-6.57	5.93	1.07	3.50	2.89	-2.37	0.26	5.38	1.29	3.34
Chattanooga (pt)	0.8	-12.98	-9.75	-11.37	2.69	1.41	2.05	-9.45	-6.99	-8.22	3.30	1.90	2.60
Balance of State	16.4	-2.50	-5.36	-3.93	6.08	3.96	5.02						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Georgia

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
HAWAII

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
HAWAII	765.6	-9.33	-4.45	-6.89	0.61	0.24	0.43						
Honolulu	73.8%	-5.35	-1.88	-3.62	0.46	0.10	0.28	-4.21	-1.50	-2.86	0.38	-0.02	0.18
Kahului	11.1	-23.07	-13.11	-18.09	1.40	0.94	1.17	-15.88	-6.65	-11.27	0.85	1.16	1.01
Balance of State	15.1	-18.73	-10.67	-14.70	0.76	0.41	0.59						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
IDAHO

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
IDAHO	761.7	-5.29	-3.39	-4.34	-2.76	-0.60	-1.68						
Boise	42.0%	-2.28	0.41	-0.94	-8.59	-2.02	-5.31	1.25	3.17	2.21	-7.98	-1.53	-4.76
Idaho Falls	8.9	2.49	0.02	1.26	-5.85	-3.33	-4.59	9.68	6.48	8.08	-6.40	-3.11	-4.76
Coeur d'Alene	8.3	-10.03	-5.48	-7.76	0.09	0.26	0.18	-2.84	0.98	-0.93	-0.46	0.48	0.01
Pocatello	4.9	-5.13	-1.34	-3.24	-1.98	-0.13	-1.06	2.06	5.12	3.59	-2.53	0.09	-1.22
Lewiston	3.0	-3.31	-7.35	-5.33	1.54	0.33	0.94	3.88	-0.89	1.50	0.99	0.55	0.77
Logan (pt)	0.5	-8.41	-6.05	-7.23	5.65	3.82	4.74	-1.22	0.41	-0.41	5.10	4.04	4.57
Balance of State	32.5	-10.25	-8.61	-9.43	4.25	1.54	2.89						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Idaho

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
ILLINOIS

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
ILLINOIS	6,369.1	1.36	2.66	2.01	-0.41	-0.04	-0.23						
Chicago (pt)	69.4%	2.79	4.35	3.57	-1.60	-0.65	-1.13	-0.65	0.85	0.10	-1.13	-0.61	-0.87
St. Louis (pt)	4.1	-8.93	-3.90	-6.42	-1.40	0.17	-0.62	-12.37	-7.40	-9.89	-0.93	0.21	-0.36
Peoria	2.9	1.25	4.04	2.65	4.61	3.13	3.87	6.26	8.71	7.49	4.46	3.50	3.98
Rockford	2.5	-5.03	-5.62	-5.33	-0.34	-1.27	-0.81	-0.02	-0.95	-0.49	-0.49	-0.90	-0.70
Springfield	2.2	6.33	6.38	6.36	-2.19	-1.86	-2.03	11.34	11.05	11.20	-2.34	-1.49	-1.92
Champaign	1.7	-4.04	0.78	-1.63	1.57	1.73	1.65	0.97	5.45	3.21	1.42	2.10	1.76
Bloomington	1.6	1.56	6.99	4.28	-0.43	2.76	1.17	8.75	13.45	11.10	-0.98	2.98	1.00
Davenport (pt)	1.5	4.27	-0.56	1.86	5.17	1.46	3.32	9.28	4.11	6.70	5.02	1.83	3.43
Carbondale	0.9	-4.83	-5.76	-5.30	3.65	0.82	2.24	2.36	0.70	1.53	3.10	1.04	2.07
Decatur	0.8	5.87	-1.04	2.42	6.97	2.87	4.92	13.06	5.42	9.24	6.42	3.09	4.76
Kankakee	0.7	-7.42	-5.47	-6.45	3.35	1.51	2.43	-0.23	0.99	0.38	2.80	1.73	2.27
Danville	0.5	-0.92	-4.69	-2.81	2.15	-0.92	0.62	6.27	1.77	4.02	1.60	-0.70	0.45
Cape Girardeau (pt)	0.0	-13.10	-4.22	-8.66	-0.28	-0.67	-0.48	-5.91	2.24	-1.84	-0.83	-0.45	-0.64
Balance of State	11.2	-2.02	-2.72	-2.37	4.04	2.25	3.15						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Illinois

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
INDIANA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
INDIANA	3,241.0	-3.34	-4.12	-3.73	0.84	0.25	0.55						
Indianapolis	32.6%	0.14	1.21	0.68	-0.08	0.05	-0.02	-3.30	-2.29	-2.80	0.39	0.09	0.24
Chicago (pt)	8.8	-5.19	-6.49	-5.84	-0.67	0.16	-0.26	-8.63	-9.99	-9.31	-0.20	0.20	0.00
Fort Wayne	7.0	-4.14	-5.44	-4.79	-1.91	-1.50	-1.71	-0.61	-2.68	-1.65	-1.30	-1.01	-1.16
Evansville (pt)	4.4	-2.81	-3.77	-3.29	-1.38	-0.24	-0.81	2.20	0.90	1.55	-1.53	0.13	-0.70
South Bend (pt)	4.2	-7.38	-5.72	-6.55	-0.49	-1.38	-0.94	-2.37	-1.05	-1.71	-0.64	-1.01	-0.83
Elkhart	4.1	-5.64	-10.01	-7.83	2.42	-0.36	1.03	-0.63	-5.34	-2.99	2.27	0.01	1.14
Louisville (pt)	3.6	-10.00	-8.01	-9.01	-0.76	-0.64	-0.70	-8.86	-7.63	-8.25	-0.84	-0.76	-0.80
Lafayette	3.2	-5.40	-4.96	-5.18	-0.94	-0.53	-0.74	-0.39	-0.29	-0.34	-1.09	-0.16	-0.63
Bloomington	2.4	-2.28	-2.24	-2.26	2.79	-0.31	1.24	4.91	4.22	4.57	2.24	-0.09	1.08
Terre Haute	2.3	-6.06	-7.08	-6.57	0.27	-0.76	-0.25	1.13	-0.62	0.26	-0.28	-0.54	-0.41
Columbus	1.6	4.33	5.44	4.89	3.26	3.33	3.30	11.52	11.90	11.71	2.71	3.55	3.13
Muncie	1.6	-8.97	-5.06	-7.02	1.39	0.15	0.77	-1.78	1.40	-0.19	0.84	0.37	0.61
Michigan City	1.4	-8.48	-10.27	-9.38	0.96	-1.14	-0.09	-1.29	-3.81	-2.55	0.41	-0.92	-0.26
Kokomo	1.3	-5.78	-7.68	-6.73	-6.35	-2.84	-4.60	1.41	-1.22	0.09	-6.90	-2.62	-4.76
Cincinnati (pt)	0.6	-13.02	-11.94	-12.48	2.61	2.38	2.50	-16.46	-15.44	-15.95	3.08	2.42	2.75
Balance of State	21.2	-4.35	-8.48	-6.42	4.74	2.14	3.44						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Indiana

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
IOWA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
IOWA	1,723.3	-4.25	-4.19	-4.22	2.28	0.89	1.59						
Des Moines	22.0%	3.90	3.39	3.65	2.20	1.87	2.04	5.04	3.77	4.41	2.12	1.75	1.94
Cedar Rapids	9.0	4.72	4.26	4.49	0.41	0.55	0.48	9.73	8.93	9.33	0.26	0.92	0.59
Iowa City	5.8	-3.65	-0.25	-1.95	1.98	-0.42	0.78	1.36	4.42	2.89	1.83	-0.05	0.89
Davenport (pt)	5.8	-8.24	-4.15	-6.20	3.18	2.12	2.65	-3.23	0.52	-1.36	3.03	2.49	2.76
Waterloo	5.6	-8.54	-6.52	-7.53	1.97	-0.17	0.90	-1.35	-0.06	-0.70	1.42	0.05	0.74
Sioux City (pt)	4.1	-10.30	-8.96	-9.63	2.89	0.32	1.61	-3.11	-2.50	-2.81	2.34	0.54	1.44
Dubuque	3.7	-2.47	-3.85	-3.16	7.13	2.43	4.78	4.72	2.61	3.67	6.58	2.65	4.62
Omaha (pt)	3.1	-13.39	-12.64	-13.02	2.61	-0.15	1.23	-12.25	-12.26	-12.26	2.53	-0.27	1.13
Ames	3.0	-2.80	1.36	-0.72	3.66	1.29	2.48	4.39	7.82	6.11	3.11	1.51	2.31
Balance of State	37.9	-8.80	-10.08	-9.44	2.05	0.54	1.29						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Iowa

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
KANSAS

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
KANSAS	1,553.9	0.05	-2.51	-1.23	0.33	0.12	0.23						
Kansas City (pt)	32.3%	6.30	3.95	5.13	3.17	1.76	2.47	2.86	0.45	1.66	3.64	1.80	2.72
Wichita	20.7	2.28	-2.19	0.04	-7.99	-3.24	-5.62	5.81	0.57	3.19	-7.38	-2.75	-5.07
Topeka	7.7	-0.43	-0.49	-0.46	2.82	0.22	1.52	4.58	4.18	4.38	2.67	0.59	1.63
Lawrence	3.6	-9.53	-3.15	-6.34	0.47	0.86	0.67	-2.34	3.31	0.49	-0.08	1.08	0.50
Manhattan	2.7	-9.86	-4.20	-7.03	-0.65	-0.39	-0.52	-2.67	2.26	-0.20	-1.20	-0.17	-0.68
St. Joseph (pt)	0.2	-7.99	-0.98	-4.49	-4.77	-0.11	-2.44	-0.80	5.48	2.34	-5.32	0.11	-2.61
Balance of State	32.7	-5.49	-9.37	-7.43	2.30	0.57	1.44						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Kansas

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
KENTUCKY

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
KENTUCKY	2,068.3	-3.35	-4.29	-3.82	1.09	0.30	0.70						
Louisville (pt)	26.8%	-1.85	-1.57	-1.71	1.42	0.66	1.04	-0.71	-1.19	-0.95	1.34	0.54	0.94
Lexington	14.1	-2.17	-1.78	-1.98	0.08	0.17	0.13	1.36	0.98	1.17	0.69	0.66	0.68
Cincinnati (pt)	9.8	1.20	-2.69	-0.75	1.87	0.54	1.21	-2.24	-6.19	-4.22	2.34	0.58	1.46
Bowling Green	3.7	-5.80	-6.42	-6.11	0.50	0.23	0.37	1.39	0.04	0.72	-0.05	0.45	0.20
Clarksville (pt)	3.3	-10.82	-11.26	-11.04	0.27	-0.30	-0.01	-5.81	-6.59	-6.20	0.12	0.07	0.10
Elizabethtown	3.1	-1.13	-7.11	-4.12	6.23	1.67	3.95	6.06	-0.65	2.71	5.68	1.89	3.79
Owensboro	2.8	-6.87	-9.30	-8.09	-1.76	-2.55	-2.16	0.32	-2.84	-1.26	-2.31	-2.33	-2.32
Huntington (pt)	1.7	-2.51	-3.77	-3.14	-2.65	-0.02	-1.34	2.50	0.90	1.70	-2.80	0.35	-1.23
Evansville (pt)	1.0	-6.88	-3.93	-5.41	-0.58	0.25	-0.17	-1.87	0.74	-0.57	-0.73	0.62	-0.06
Balance of State	33.6	-5.22	-6.43	-5.82	1.17	0.19	0.68						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Kentucky

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
LOUISIANA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
LOUISIANA	2,162.6	-0.45	-3.85	-2.15	-0.35	-0.38	-0.37						
New Orleans	28.5%	-0.96	-1.53	-1.25	-0.69	-0.13	-0.41	0.18	-1.15	-0.49	-0.77	-0.25	-0.51
Baton Rouge	19.7	2.45	-0.83	0.81	-1.52	-0.46	-0.99	3.59	-0.45	1.57	-1.60	-0.58	-1.09
Lafayette	10.7	1.69	-4.95	-1.63	-0.12	-0.29	-0.21	5.22	-2.19	1.52	0.49	0.20	0.35
Shreveport	9.4	-5.19	-4.83	-5.01	-0.67	-1.34	-1.01	-1.66	-2.07	-1.87	-0.06	-0.85	-0.46
Lake Charles	5.0	4.40	-7.42	-1.51	-2.97	-1.82	-2.40	9.41	-2.75	3.33	-3.12	-1.45	-2.29
Houma	4.7	7.79	-0.62	3.59	0.88	1.43	1.16	12.80	4.05	8.43	0.73	1.80	1.27
Monroe	3.9	-5.60	-7.68	-6.64	-2.43	-2.70	-2.57	1.59	-1.22	0.19	-2.98	-2.48	-2.73
Alexandria	3.2	-3.29	-6.42	-4.86	-0.01	-1.01	-0.51	3.90	0.04	1.97	-0.56	-0.79	-0.68
Hammond	2.2	-13.51	-10.44	-11.98	-0.10	-0.60	-0.35	-6.32	-3.98	-5.15	-0.65	-0.38	-0.52
Balance of State	12.7	-2.54	-8.93	-5.73	3.35	0.62	1.98						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
MAINE

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
MAINE	687.6	-6.48	-1.67	-4.08	0.22	0.77	0.50						
Portland	43.3%	-2.77	0.43	-1.17	0.63	0.89	0.76	0.76	3.19	1.98	1.24	1.38	1.31
Bangor	11.3	-10.01	-2.33	-6.17	-2.57	-0.46	-1.52	-2.82	4.13	0.66	-3.12	-0.24	-1.68
Lewiston	7.9	-8.97	-2.74	-5.86	3.67	2.15	2.91	-1.78	3.72	0.97	3.12	2.37	2.75
Balance of State	37.5	-9.17	-3.67	-6.42	-0.14	0.71	0.29						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
MARYLAND

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
MARYLAND	2,918.4	3.55	6.47	5.01	1.44	1.22	1.33						
Baltimore	50.0%	3.73	5.90	4.82	1.69	1.14	1.42	0.29	2.40	1.35	2.16	1.18	1.67
Washington (pt)	36.1	4.13	8.99	6.56	-0.23	0.47	0.12	0.69	5.49	3.09	0.24	0.51	0.38
Salisbury (pt)	2.8	-10.80	-8.97	-9.89	3.00	1.10	2.05	-5.79	-4.30	-5.05	2.85	1.47	2.16
Hagerstown (pt)	2.5	-4.83	-3.81	-4.32	-0.22	0.05	-0.09	0.18	0.86	0.52	-0.37	0.42	0.03
California	1.7	18.48	20.29	19.39	7.77	6.01	6.89	25.67	26.75	26.21	7.22	6.23	6.73
Philadelphia (pt)	1.2	-9.81	-5.97	-7.89	-8.22	-4.55	-6.39	-13.25	-9.47	-11.36	-7.75	-4.51	-6.13
Cumberland (pt)	1.1	-9.29	-3.82	-6.56	-0.14	0.87	0.37	-2.10	2.64	0.27	-0.69	1.09	0.20
Balance of State	4.6	11.46	8.52	9.99	12.37	8.54	10.46						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Maryland

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
MASSACHUSETTS

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
MASSACHUSETTS	3,820.3	5.44	9.33	7.39	-3.37	-0.55	-1.96						
Boston (pt)	68.7%	11.09	12.38	11.74	-4.34	-1.18	-2.76	7.65	8.88	8.27	-3.87	-1.14	-2.51
Worcester (pt)	9.8	-2.96	4.71	0.88	-3.26	-0.51	-1.89	-1.82	5.09	1.64	-3.34	-0.63	-1.99
Springfield	7.9	-8.65	3.10	-2.78	-1.24	1.31	0.03	-5.12	5.86	0.37	-0.63	1.80	0.59
Providence (pt)	6.3	-11.69	-1.44	-6.57	-1.73	0.45	-0.64	-15.13	-4.94	-10.04	-1.26	0.49	-0.38
Barnstable	2.9	-16.03	-3.17	-9.60	-2.01	-0.52	-1.27	-11.02	1.50	-4.76	-2.16	-0.15	-1.16
Pittsfield	1.8	-14.10	-0.45	-7.28	-3.72	0.03	-1.85	-6.91	6.01	-0.45	-4.27	0.25	-2.01
Balance of State	2.6	9.65	11.94	10.79	10.32	7.55	8.93						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Massachusetts

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
MICHIGAN

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
MICHIGAN	4,550.2	-1.35	0.19	-0.58	-0.08	0.75	0.34						
Detroit	43.8%	2.50	4.15	3.33	-0.53	0.99	0.23	-0.94	0.65	-0.15	-0.06	1.03	0.49
Grand Rapids	12.4	-6.20	-3.23	-4.72	-1.01	0.64	-0.19	-5.06	-2.85	-3.96	-1.09	0.52	-0.29
Ann Arbor	5.1	6.81	10.63	8.72	2.60	2.75	2.68	10.34	13.39	11.87	3.21	3.24	3.23
Lansing	4.9	-1.06	1.68	0.31	-0.75	0.57	-0.09	2.47	4.44	3.46	-0.14	1.06	0.46
Kalamazoo	3.3	-2.94	-4.00	-3.47	-1.13	0.00	-0.57	2.07	0.67	1.37	-1.28	0.37	-0.46
Flint	3.2	-8.45	-4.56	-6.51	-3.53	-0.73	-2.13	-3.44	0.11	-1.67	-3.68	-0.36	-2.02
Saginaw	2.0	-8.19	-3.03	-5.61	-0.46	0.76	0.15	-1.00	3.43	1.22	-1.01	0.98	-0.01
Niles	1.5	-6.20	-6.08	-6.14	2.64	0.32	1.48	0.99	0.38	0.69	2.09	0.54	1.32
Muskegon	1.5	-10.75	-8.11	-9.43	-4.67	-2.38	-3.53	-3.56	-1.65	-2.61	-5.22	-2.16	-3.69
Jackson	1.3	-4.76	-0.46	-2.61	-0.06	1.16	0.55	2.43	6.00	4.22	-0.61	1.38	0.39
Battle Creek	1.3	-2.45	-1.78	-2.12	3.09	2.99	3.04	4.74	4.68	4.71	2.54	3.21	2.88
Monroe	1.0	-3.32	-6.15	-4.74	7.70	2.95	5.33	3.87	0.31	2.09	7.15	3.17	5.16
Midland	0.9	3.02	-4.20	-0.59	-7.99	-6.02	-7.01	10.21	2.26	6.24	-8.54	-5.80	-7.17
Bay City	0.8	-8.99	-4.95	-6.97	2.03	1.57	1.80	-1.80	1.51	-0.15	1.48	1.79	1.64
South Bend (pt)	0.2	-14.00	-5.61	-9.81	-2.59	0.36	-1.12	-8.99	-0.94	-4.97	-2.74	0.73	-1.01
Balance of State	16.7	-5.85	-6.69	-6.27	1.89	0.38	1.13						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Michigan

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
MINNESOTA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
MINNESOTA	3,080.3	1.32	1.41	1.37	-0.21	-0.04	-0.13						
Minneapolis (pt)	63.9%	4.81	5.57	5.19	-1.15	-0.22	-0.69	1.37	2.07	1.72	-0.68	-0.18	-0.43
Duluth (pt)	4.0	-4.98	-5.45	-5.22	-1.04	-0.88	-0.96	0.03	-0.78	-0.38	-1.19	-0.51	-0.85
Rochester	4.0	9.12	5.57	7.35	-6.24	-2.10	-4.17	14.13	10.24	12.19	-6.39	-1.73	-4.06
St. Cloud	3.6	-6.59	-7.63	-7.11	4.04	0.55	2.30	-1.58	-2.96	-2.27	3.89	0.92	2.41
Mankato	1.9	-10.22	-7.24	-8.73	0.14	-1.43	-0.65	-3.03	-0.78	-1.91	-0.41	-1.21	-0.81
Fargo (pt)	0.8	-15.57	-9.99	-12.78	4.75	1.24	3.00	-10.56	-5.32	-7.94	4.60	1.61	3.11
Grand Forks (pt)	0.5	-17.30	-14.46	-15.88	-1.73	-2.14	-1.94	-10.11	-8.00	-9.06	-2.28	-1.92	-2.10
La Crosse (pt)	0.2	-12.71	-8.98	-10.85	3.45	0.23	1.84	-5.52	-2.52	-4.02	2.90	0.45	1.68
Balance of State	21.1	-5.94	-7.45	-6.69	2.99	1.08	2.04						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Minnesota

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
MISSISSIPPI

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
MISSISSIPPI	1,259.1	-6.35	-5.95	-6.15	0.86	0.33	0.60						
Jackson	22.7%	-2.19	-0.83	-1.51	-0.86	-1.64	-1.25	1.34	1.93	1.64	-0.25	-1.15	-0.70
Gulfport	13.3	-0.95	-4.02	-2.49	2.29	1.20	1.75	4.06	0.65	2.36	2.14	1.57	1.86
Memphis (pt)	6.9	-18.58	-12.91	-15.75	-0.10	1.33	0.62	-17.44	-12.53	-14.99	-0.18	1.21	0.52
Hattiesburg	5.3	-8.27	-5.88	-7.08	-1.18	-0.92	-1.05	-1.08	0.58	-0.25	-1.73	-0.70	-1.22
Balance of State	51.9	-7.73	-7.76	-7.74	1.58	0.96	1.27						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Mississippi

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
MISSOURI

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
MISSOURI	3,044.2	-0.85	-1.78	-1.32	1.02	0.22	0.62						
St. Louis (pt)	38.6%	3.56	1.54	2.55	0.36	-0.21	0.08	0.12	-1.96	-0.92	0.83	-0.17	0.33
Kansas City (pt)	19.8	2.33	2.19	2.26	0.21	0.55	0.38	-1.11	-1.31	-1.21	0.68	0.59	0.64
Springfield	7.2	-5.63	-5.19	-5.41	2.65	1.23	1.94	-2.10	-2.43	-2.27	3.26	1.72	2.49
Columbia	3.3	-2.05	0.78	-0.64	0.43	-0.66	-0.12	2.96	5.45	4.21	0.28	-0.29	0.00
Joplin	2.8	-9.90	-8.39	-9.15	1.67	0.38	1.03	-2.71	-1.93	-2.32	1.12	0.60	0.86
Jefferson City	2.7	4.81	-0.11	2.35	1.86	-0.10	0.88	12.00	6.35	9.18	1.31	0.12	0.72
St. Joseph (pt)	1.9	-5.33	-8.39	-6.86	2.38	-0.69	0.85	1.86	-1.93	-0.04	1.83	-0.47	0.68
Cape Girardeau (pt)	1.5	-8.64	-7.19	-7.92	-2.51	-1.80	-2.16	-1.45	-0.73	-1.09	-3.06	-1.58	-2.32
Fayetteville (pt)	0.3	-24.68	-18.56	-21.62	-2.53	-1.30	-1.92	-21.15	-15.80	-18.48	-1.92	-0.81	-1.37
Balance of State	22.0	-8.04	-8.68	-8.36	2.46	0.74	1.60						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Missouri

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
MONTANA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
MONTANA	523.9	-6.71	-5.23	-5.97	1.73	0.53	1.13						
Billings	17.7%	-4.66	-3.34	-4.00	2.41	0.92	1.67	2.53	3.12	2.83	1.86	1.14	1.50
Missoula	12.4	-9.87	-5.10	-7.49	0.18	0.11	0.15	-2.68	1.36	-0.66	-0.37	0.33	-0.02
Great Falls	8.0	-7.66	-7.62	-7.64	1.27	-0.63	0.32	-0.47	-1.16	-0.82	0.72	-0.41	0.16
Balance of State	61.9	-6.54	-5.49	-6.01	1.91	0.65	1.28						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
NEBRASKA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
NEBRASKA	1,088.7	-2.77	-3.26	-3.02	2.04	0.96	1.50						
Omaha (pt)	42.9%	1.66	2.15	1.91	0.71	0.57	0.64	2.80	2.53	2.67	0.63	0.45	0.54
Lincoln	17.5	-0.88	-0.65	-0.77	0.16	-0.15	0.01	4.13	4.02	4.08	0.01	0.22	0.12
Grand Island	4.3	-10.56	-11.22	-10.89	2.84	0.84	1.84	-3.37	-4.76	-4.07	2.29	1.06	1.68
Sioux City (pt)	1.4	-12.38	-10.16	-11.27	2.62	2.91	2.77	-5.19	-3.70	-4.45	2.07	3.13	2.60
Balance of State	33.8	-7.98	-10.18	-9.08	4.57	1.96	3.27						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Nebraska

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
NEVADA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
NEVADA	1,353.9	-11.12	-9.74	-10.43	-0.35	-0.11	-0.23						
Las Vegas	73.0%	-14.20	-11.89	-13.05	-0.63	-0.11	-0.37	-13.06	-11.51	-12.29	-0.71	-0.23	-0.47
Reno	16.5	-7.15	-3.90	-5.53	0.19	0.79	0.49	-3.62	-1.14	-2.38	0.80	1.28	1.04
Carson City	2.2	3.39	4.50	3.95	1.18	0.36	0.77	10.58	10.96	10.77	0.63	0.58	0.61
Balance of State	8.3	4.23	-6.28	-1.03	0.63	-2.04	-0.70						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
NEW HAMPSHIRE

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
NEW HAMPSHIRE	712.0	-0.36	0.77	0.21	0.40	0.50	0.45						
Manchester	30.3%	7.99	4.42	6.21	-0.13	0.08	-0.02	11.52	7.18	9.35	0.48	0.57	0.53
Boston (pt)	30.0	-4.03	-1.62	-2.83	-1.66	-0.85	-1.26	-7.47	-5.12	-6.30	-1.19	-0.81	-1.00
Balance of State	39.7	-3.95	-0.20	-2.08	2.36	1.84	2.10						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within New Hampshire

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
NEW JERSEY

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
NEW JERSEY	4,261.3	2.70	2.46	2.58	-3.96	-1.21	-2.59						
New York (pt)	70.3%	3.84	3.35	3.60	-6.02	-2.00	-4.01	0.40	-0.15	0.13	-5.55	-1.96	-3.76
Philadelphia (pt)	13.3	-4.05	-2.13	-3.09	-2.92	-1.37	-2.15	-7.49	-5.63	-6.56	-2.45	-1.33	-1.89
Trenton	6.0	14.81	11.65	13.23	3.32	0.44	1.88	18.34	14.41	16.38	3.93	0.93	2.43
Atlantic City	3.2	-14.89	-10.41	-12.65	1.29	2.20	1.75	-9.88	-5.74	-7.81	1.14	2.57	1.86
Vineland	1.5	-8.74	-10.20	-9.47	-3.32	-2.44	-2.88	-1.55	-3.74	-2.65	-3.87	-2.22	-3.05
Ocean City	1.1	-20.60	-15.42	-18.01	-0.30	-1.32	-0.81	-13.41	-8.96	-11.19	-0.85	-1.10	-0.98
Allentown (pt)	0.9	-8.42	-2.40	-5.41	0.92	2.09	1.51	-7.28	-2.02	-4.65	0.84	1.97	1.41
Balance of State	3.9	14.04	9.15	11.59	11.90	8.07	9.99						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within New Jersey

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
NEW MEXICO

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
NEW MEXICO	916.3	-0.30	-1.53	-0.92	0.81	-0.37	0.22						
Albuquerque	44.6%	0.98	1.50	1.24	-3.32	-1.75	-2.54	2.12	1.88	2.00	-3.40	-1.87	-2.64
Las Cruces	9.0	-8.69	-4.43	-6.56	0.87	0.16	0.52	-1.50	2.03	0.27	0.32	0.38	0.35
Santa Fe	7.9	-9.98	0.06	-4.96	-1.27	-1.53	-1.40	-2.79	6.52	1.87	-1.82	-1.31	-1.57
Farmington	5.9	6.48	-4.72	0.88	2.34	-0.37	0.99	13.67	1.74	7.71	1.79	-0.15	0.82
Balance of State	32.7	1.36	-4.67	-1.65	6.65	1.65	4.15						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
NEW YORK

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
NEW YORK	9,908.2	3.43	2.84	3.14	-2.25	-1.40	-1.83						
New York (pt)	68.6%	5.36	4.89	5.13	-3.70	-2.31	-3.01	1.92	1.39	1.66	-3.23	-2.27	-2.75
Buffalo	5.7	-0.05	-2.08	-1.07	1.72	0.13	0.93	1.09	-1.70	-0.31	1.64	0.01	0.83
Rochester	5.4	-2.10	-0.28	-1.19	-2.64	-0.49	-1.57	-0.96	0.10	-0.43	-2.72	-0.61	-1.67
Albany	4.7	4.64	4.11	4.38	1.66	0.50	1.08	5.78	4.49	5.14	1.58	0.38	0.98
Syracuse	3.2	-0.97	-1.54	-1.26	-2.06	-1.09	-1.58	2.56	1.22	1.89	-1.45	-0.60	-1.03
Utica	1.3	-4.11	-6.44	-5.28	-0.07	-0.81	-0.44	0.90	-1.77	-0.44	-0.22	-0.44	-0.33
Binghamton	1.1	-0.67	-3.47	-2.07	-9.74	-4.73	-7.24	4.34	1.20	2.77	-9.89	-4.36	-7.13
Kingston	0.7	-12.37	-8.29	-10.33	-2.70	-2.07	-2.39	-5.18	-1.83	-3.51	-3.25	-1.85	-2.55
Watertown	0.6	-9.72	-9.94	-9.83	-3.21	-2.09	-2.65	-2.53	-3.48	-3.01	-3.76	-1.87	-2.82
Ithaca	0.6	-7.99	2.34	-2.83	0.14	-2.00	-0.93	-0.80	8.80	4.00	-0.41	-1.78	-1.10
Glens Falls	0.6	-7.47	-9.35	-8.41	-1.57	-1.55	-1.56	-0.28	-2.89	-1.59	-2.12	-1.33	-1.73
Elmira	0.4	-2.82	-5.40	-4.11	2.74	-1.55	0.60	4.37	1.06	2.72	2.19	-1.33	0.43
Balance of State	7.0	-0.18	-3.18	-1.68	6.57	4.70	5.64						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within New York

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
NORTH CAROLINA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
NORTH CAROLINA	4,730.1	-1.57	-2.65	-2.11	2.25	1.22	1.74						
Charlotte (pt)	22.6%	3.83	2.80	3.32	1.89	1.49	1.69	0.39	-0.70	-0.16	2.36	1.53	1.95
Raleigh	13.2	3.90	3.92	3.91	0.30	0.47	0.39	5.04	4.30	4.67	0.22	0.35	0.29
Greensboro	8.0	-4.50	-5.85	-5.18	0.50	-0.38	0.06	-3.36	-5.47	-4.42	0.42	-0.50	-0.04
Durham	6.8	15.21	12.49	13.85	3.40	0.94	2.17	18.74	15.25	17.00	4.01	1.43	2.72
Winston-Salem	5.9	-5.03	-3.70	-4.37	0.95	1.02	0.99	-1.50	-0.94	-1.22	1.56	1.51	1.54
Asheville	4.3	-10.19	-7.66	-8.93	-0.70	-0.53	-0.62	-6.66	-4.90	-5.78	-0.09	-0.04	-0.06
Fayetteville	3.9	-8.20	-8.97	-8.59	1.95	0.78	1.37	-3.19	-4.30	-3.75	1.80	1.15	1.48
Hickory	3.4	-9.01	-10.15	-9.58	1.71	0.58	1.15	-4.00	-5.48	-4.74	1.56	0.95	1.26
Wilmington	2.8	-5.63	-5.03	-5.33	0.66	0.02	0.34	-0.62	-0.36	-0.49	0.51	0.39	0.45
Jacksonville	2.0	-14.18	-14.59	-14.39	2.27	-0.62	0.83	-6.99	-8.13	-7.56	1.72	-0.40	0.66
Greenville	1.8	-4.02	-5.73	-4.88	2.94	0.70	1.82	3.17	0.73	1.95	2.39	0.92	1.66
Burlington	1.4	-14.62	-11.46	-13.04	-5.24	-2.81	-4.03	-7.43	-5.00	-6.22	-5.79	-2.59	-4.19
Rocky Mount	1.3	-4.67	-10.18	-7.43	1.08	-0.69	0.20	2.52	-3.72	-0.60	0.53	-0.47	0.03
New Bern	1.2	-2.84	-6.53	-4.69	-0.21	-1.55	-0.88	4.35	-0.07	2.14	-0.76	-1.33	-1.05
Goldsboro	1.1	-10.61	-11.75	-11.18	0.70	-0.26	0.22	-3.42	-5.29	-4.36	0.15	-0.04	0.06
Myrtle Beach (pt)	0.7	-11.92	-8.44	-10.18	-5.17	-2.46	-3.82	-6.91	-3.77	-5.34	-5.32	-2.09	-3.71
Virginia Beach (pt)	0.2	-23.85	-19.02	-21.44	-8.79	-5.95	-7.37	-22.71	-18.64	-20.68	-8.87	-6.07	-7.47
Balance of State	19.3	-6.16	-9.28	-7.72	6.96	4.14	5.55						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within North Carolina

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
NORTH DAKOTA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
NORTH DAKOTA	503.3	0.54	-4.59	-2.03	5.70	1.24	3.47						
Fargo (pt)	25.0%	3.57	-1.40	1.09	2.33	0.85	1.59	8.58	3.27	5.93	2.18	1.22	1.70
Bismarck	16.3	-1.28	-1.13	-1.21	-0.39	-0.54	-0.47	5.91	5.33	5.62	-0.94	-0.32	-0.63
Grand Forks (pt)	9.5	-8.46	-6.73	-7.60	3.68	1.53	2.61	-1.27	-0.27	-0.77	3.13	1.75	2.44
Balance of State	49.2	1.34	-6.95	-2.81	9.83	1.97	5.90						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within North Dakota

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
OHIO

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
OHIO	5,783.7	-0.60	-1.07	-0.84	1.53	0.88	1.21						
Cleveland	19.0%	0.71	1.82	1.27	-0.24	0.30	0.03	-2.73	-1.68	-2.21	0.23	0.34	0.29
Columbus	18.7	2.00	1.69	1.85	0.93	0.67	0.80	-1.44	-1.81	-1.63	1.40	0.71	1.06
Cincinnati (pt)	15.1	3.26	2.96	3.11	0.84	0.75	0.80	-0.18	-0.54	-0.36	1.31	0.79	1.05
Dayton	6.9	1.62	1.09	1.36	1.39	1.17	1.28	2.76	1.47	2.12	1.31	1.05	1.18
Akron	6.1	0.24	0.03	0.14	4.78	2.33	3.56	1.38	0.41	0.90	4.70	2.21	3.46
Toledo	5.5	-3.71	-4.57	-4.14	2.58	0.09	1.34	-0.18	-1.81	-1.00	3.19	0.58	1.89
Youngstown (pt)	3.2	-9.55	-8.90	-9.23	-2.03	-1.14	-1.59	-6.02	-6.14	-6.08	-1.42	-0.65	-1.04
Canton	3.1	-8.75	-7.32	-8.04	-0.70	-1.21	-0.96	-3.74	-2.65	-3.20	-0.85	-0.84	-0.85
Mansfield	1.0	-8.85	-7.38	-8.12	-0.29	-0.66	-0.48	-1.66	-0.92	-1.29	-0.84	-0.44	-0.64
Lima	0.9	-5.56	-7.78	-6.67	0.53	-0.63	-0.05	1.63	-1.32	0.16	-0.02	-0.41	-0.22
Springfield	0.9	-9.80	-8.67	-9.24	2.86	2.02	2.44	-2.61	-2.21	-2.41	2.31	2.24	2.28
Wheeling (pt)	0.4	-9.05	-8.44	-8.75	6.81	0.97	3.89	-1.86	-1.98	-1.92	6.26	1.19	3.73
Weirton (pt)	0.4	-7.42	-4.76	-6.09	-2.21	-0.72	-1.47	-0.23	1.70	0.74	-2.76	-0.50	-1.63
Huntington (pt)	0.3	-15.87	-7.54	-11.71	1.41	1.40	1.41	-8.68	-1.08	-4.88	0.86	1.62	1.24
Balance of State	18.5	-3.28	-6.45	-4.86	4.22	2.27	3.25						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Ohio

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
OKLAHOMA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
OKLAHOMA	1,805.5	1.78	-0.51	0.64	3.74	1.11	2.43						
Oklahoma City	37.3%	3.56	3.91	3.74	4.14	1.76	2.95	4.70	4.29	4.50	4.06	1.64	2.85
Tulsa	26.2	1.58	0.26	0.92	-0.08	-0.20	-0.14	2.72	0.64	1.68	-0.16	-0.32	-0.24
Lawton	3.3	-3.72	-7.44	-5.58	5.09	1.32	3.21	3.47	-0.98	1.25	4.54	1.54	3.04
Fort Smith (pt)	1.4	-8.57	-11.01	-9.79	6.92	1.74	4.33	-3.56	-6.34	-4.95	6.77	2.11	4.44
Balance of State	31.8	0.90	-5.13	-2.12	6.14	1.38	3.76						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Oklahoma

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
OREGON

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
OREGON	2,021.4	-3.18	-0.89	-2.04	-0.64	-0.15	-0.40						
Portland (pt)	52.7%	3.03	4.66	3.85	-0.70	0.19	-0.26	-0.41	1.16	0.38	-0.23	0.23	0.00
Salem	9.1	-10.57	-5.61	-8.09	-0.29	-0.69	-0.49	-5.56	-0.94	-3.25	-0.44	-0.32	-0.38
Eugene	8.3	-8.50	-4.96	-6.73	-0.75	-0.62	-0.69	-3.49	-0.29	-1.89	-0.90	-0.25	-0.58
Medford	4.7	-9.50	-6.40	-7.95	2.09	0.18	1.14	-2.31	0.06	-1.13	1.54	0.40	0.97
Bend	4.1	-11.06	-5.28	-8.17	1.83	0.17	1.00	-3.87	1.18	-1.35	1.28	0.39	0.84
Albany	2.4	-13.01	-11.86	-12.44	-2.73	-2.72	-2.73	-5.82	-5.40	-5.61	-3.28	-2.50	-2.89
Corvallis	2.2	0.92	4.10	2.51	-11.09	-1.56	-6.33	8.11	10.56	9.34	-11.64	-1.34	-6.49
Grants Pass	1.4	-16.54	-10.96	-13.75	-1.91	-1.58	-1.75	-9.35	-4.50	-6.93	-2.46	-1.36	-1.91
Balance of State	15.0	-11.17	-10.36	-10.76	-0.09	-0.18	-0.14						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Oregon

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
PENNSYLVANIA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
PENNSYLVANIA	6,300.6	-0.29	-1.68	-0.99	0.40	-0.41	0.00						
Philadelphia (pt)	32.6%	4.31	3.16	3.74	-0.91	-1.06	-0.99	0.87	-0.34	0.27	-0.44	-1.02	-0.73
Pittsburgh	19.2	1.67	-0.16	0.76	2.49	0.42	1.46	-1.77	-3.66	-2.72	2.96	0.46	1.71
Allentown (pt)	5.4	-3.74	-4.68	-4.21	-3.87	-1.47	-2.67	-2.60	-4.30	-3.45	-3.95	-1.59	-2.77
Harrisburg	5.4	-0.37	1.18	0.41	-1.25	-0.60	-0.93	3.16	3.94	3.55	-0.64	-0.11	-0.38
Scranton	4.3	-6.57	-7.45	-7.01	-1.82	-2.20	-2.01	-3.04	-4.69	-3.87	-1.21	-1.71	-1.46
Lancaster	4.2	-11.39	-8.30	-9.85	-0.21	0.03	-0.09	-7.86	-5.54	-6.70	0.40	0.52	0.46
York	3.0	-4.98	-7.57	-6.28	0.52	-0.35	0.08	0.03	-2.90	-1.44	0.37	0.02	0.20
Reading	3.0	-5.02	-7.67	-6.35	-2.88	-1.43	-2.16	-0.01	-3.00	-1.51	-3.03	-1.06	-2.05
Erie	2.2	-9.93	-7.77	-8.85	-1.67	-0.88	-1.28	-4.92	-3.10	-4.01	-1.82	-0.51	-1.17
State College	1.3	-3.31	-3.02	-3.17	1.17	0.78	0.98	3.88	3.44	3.66	0.62	1.00	0.81
Chambersburg	1.0	-9.05	-9.23	-9.14	1.54	-1.29	0.13	-1.86	-2.77	-2.32	0.99	-1.07	-0.04
Altoona	1.0	-8.32	-8.91	-8.62	-1.55	-1.74	-1.65	-1.13	-2.45	-1.79	-2.10	-1.52	-1.81
East Stroudsburg	1.0	-10.79	-9.38	-10.09	-0.23	-2.15	-1.19	-3.60	-2.92	-3.26	-0.78	-1.93	-1.36
Johnstown	0.9	-6.43	-6.22	-6.33	0.06	-0.75	-0.35	0.76	0.24	0.50	-0.49	-0.53	-0.51
Williamsport	0.9	-5.59	-7.78	-6.69	4.22	-1.04	1.59	1.60	-1.32	0.14	3.67	-0.82	1.43
Lebanon	0.9	-7.07	-9.40	-8.24	-0.46	-1.43	-0.95	0.12	-2.94	-1.41	-1.01	-1.21	-1.11
Youngstown (pt)	0.8	-8.17	-8.68	-8.43	3.32	-0.21	1.56	-4.64	-5.92	-5.28	3.93	0.28	2.11
Bloomsburg	0.7	0.60	0.57	0.59	4.60	3.91	4.26	7.79	7.03	7.41	4.05	4.13	4.09
Gettysburg	0.6	-17.33	-14.14	-15.74	-2.77	-2.52	-2.65	-10.14	-7.68	-8.91	-3.32	-2.30	-2.81
New York (pt)	0.2	-20.00	-10.23	-15.12	-3.06	-1.47	-2.27	-23.44	-13.73	-18.59	-2.59	-1.43	-2.01
Balance of State	11.3	1.65	-4.38	-1.37	5.30	1.73	3.51						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Pennsylvania

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
RHODE ISLAND

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean						
		2015			2001-to-2015 Change			2015			2001-to-2015 Change			
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	
RHODE ISLAND	523.4	-0.80	1.45	0.33	3.04	0.99	2.02							
Providence (pt)	98.0%	-1.34	1.18	-0.08	2.63	0.72	1.68	-0.20	1.56	0.68	2.55	0.60	1.58	
Balance of State	2.0	25.32	14.51	19.92	22.87	14.05	18.46							

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Rhode Island

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
SOUTH CAROLINA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
SOUTH CAROLINA	2,201.1	-5.16	-4.44	-4.80	1.58	0.76	1.17						
Greenville	19.0%	-5.35	-4.27	-4.81	0.48	0.69	0.59	-4.21	-3.89	-4.05	0.40	0.57	0.49
Columbia	18.6	-1.26	-0.48	-0.87	-0.33	0.03	-0.15	-0.12	-0.10	-0.11	-0.41	-0.09	-0.25
Charleston	16.3	-1.98	-0.73	-1.36	5.02	2.22	3.62	-0.84	-0.35	-0.60	4.94	2.10	3.52
Spartanburg	6.7	-3.10	-5.33	-4.22	3.58	0.32	1.95	1.91	-0.66	0.63	3.43	0.69	2.06
Myrtle Beach (pt)	5.9	-22.46	-16.31	-19.39	-0.58	-1.64	-1.11	-17.45	-11.64	-14.55	-0.73	-1.27	-1.00
Charlotte (pt)	5.9	-5.33	-3.48	-4.41	2.83	2.12	2.48	-8.77	-6.98	-7.88	3.30	2.16	2.73
Florence	4.1	-3.67	-4.16	-3.92	-1.26	-0.83	-1.05	3.52	2.30	2.91	-1.81	-0.61	-1.21
Hilton Head Island	4.0	-17.94	-11.95	-14.95	0.14	-0.94	-0.40	-10.75	-5.49	-8.12	-0.41	-0.72	-0.57
Augusta (pt)	3.3	-1.79	-3.68	-2.74	-2.10	-0.09	-1.10	1.74	-0.92	0.41	-1.49	0.40	-0.55
Sumter	2.1	-9.67	-10.17	-9.92	2.19	0.35	1.27	-2.48	-3.71	-3.10	1.64	0.57	1.11
Balance of State	14.0	-4.24	-6.42	-5.33	3.06	2.01	2.54						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within South Carolina

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
SOUTH DAKOTA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
SOUTH DAKOTA	483.8	-5.21	-7.34	-6.28	0.72	-0.03	0.35						
Sioux Falls	33.2%	-1.18	-3.04	-2.11	-1.45	0.42	-0.52	-0.04	-2.66	-1.35	-1.53	0.30	-0.62
Rapid City	15.6	-7.61	-7.12	-7.37	3.16	0.22	1.69	-0.42	-0.66	-0.54	2.61	0.44	1.53
Sioux City (pt)	2.1	9.81	-4.38	2.72	-28.24	-9.69	-18.97	17.00	2.08	9.54	-28.79	-9.47	-19.13
Balance of State	49.1	-7.82	-10.44	-9.13	2.66	0.01	1.33						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within South Dakota

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
TENNESSEE

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
TENNESSEE	3,163.8	-4.17	-3.19	-3.68	0.38	0.26	0.32						
Nashville	30.6%	-1.31	0.90	-0.21	0.86	0.94	0.90	-0.17	1.28	0.56	0.78	0.82	0.80
Memphis (pt)	17.8	-4.30	-3.22	-3.76	-1.26	-0.41	-0.84	-3.16	-2.84	-3.00	-1.34	-0.53	-0.94
Knoxville	13.0	-2.77	-1.51	-2.14	0.72	-0.24	0.24	-1.63	-1.13	-1.38	0.64	-0.36	0.14
Chattanooga (pt)	7.1	-1.66	-1.44	-1.55	2.56	0.98	1.77	1.87	1.32	1.60	3.17	1.47	2.32
Kingsport (pt)	2.8	-0.80	-3.68	-2.24	-1.95	-0.61	-1.28	4.21	0.99	2.60	-2.10	-0.24	-1.17
Johnson City	2.7	-5.02	-4.02	-4.52	-0.19	-0.08	-0.14	2.17	2.44	2.31	-0.74	0.14	-0.30
Jackson	2.2	-7.99	-7.03	-7.51	-2.88	-2.30	-2.59	-0.80	-0.57	-0.69	-3.43	-2.08	-2.76
Clarksville (pt)	1.8	-14.51	-9.36	-11.94	-3.86	-2.60	-3.23	-9.50	-4.69	-7.10	-4.01	-2.23	-3.12
Cleveland	1.6	-13.43	-11.84	-12.64	-6.18	-2.81	-4.50	-6.24	-5.38	-5.81	-6.73	-2.59	-4.66
Morristown	1.5	-9.32	-8.16	-8.74	0.66	-0.89	-0.12	-2.13	-1.70	-1.92	0.11	-0.67	-0.28
Balance of State	18.8	-8.34	-9.25	-8.80	1.85	0.97	1.41						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Tennessee

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
TEXAS

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
TEXAS	13,062.2	2.27	-1.68	0.30	0.50	-0.27	0.12						
Dallas	27.7%	4.22	0.78	2.50	-0.64	-0.37	-0.51	0.78	-2.72	-0.97	-0.17	-0.33	-0.25
Houston	24.5	6.66	1.77	4.22	-1.57	-1.02	-1.30	3.22	-1.73	0.75	-1.10	-0.98	-1.04
San Antonio	8.3	-2.71	-3.84	-3.28	1.56	-0.09	0.74	-6.15	-7.34	-6.75	2.03	-0.05	0.99
Austin	7.8	7.88	5.13	6.51	-4.83	-1.92	-3.38	4.44	1.63	3.04	-4.36	-1.88	-3.12
El Paso	2.7	-8.58	-10.16	-9.37	-0.87	-1.70	-1.29	-7.44	-9.78	-8.61	-0.95	-1.82	-1.39
McAllen	2.2	-15.42	-14.53	-14.98	0.30	-2.67	-1.19	-11.89	-11.77	-11.83	0.91	-2.18	-0.64
Corpus Christi	1.6	-1.56	-6.97	-4.27	0.60	-1.57	-0.49	1.97	-4.21	-1.12	1.21	-1.08	0.07
Killeen	1.4	-5.51	-7.94	-6.73	4.64	1.16	2.90	-0.50	-3.27	-1.89	4.49	1.53	3.01
Beaumont	1.4	6.58	-5.35	0.62	3.14	-0.39	1.38	11.59	-0.68	5.46	2.99	-0.02	1.49
Brownsville	1.2	-16.19	-14.94	-15.57	-2.56	-3.48	-3.02	-11.18	-10.27	-10.73	-2.71	-3.11	-2.91
Lubbock	1.2	-9.22	-7.57	-8.40	1.41	-0.76	0.33	-4.21	-2.90	-3.56	1.26	-0.39	0.44
Amarillo	1.0	-3.27	-6.76	-5.02	4.19	0.32	2.26	1.74	-2.09	-0.18	4.04	0.69	2.37
Waco	1.0	-3.75	-7.37	-5.56	1.65	-1.27	0.19	1.26	-2.70	-0.72	1.50	-0.90	0.30
College Station	0.9	-5.95	-3.66	-4.81	2.74	-1.33	0.71	-0.94	1.01	0.04	2.59	-0.96	0.82
Tyler	0.9	-8.17	-6.72	-7.45	1.03	-0.46	0.29	-3.16	-2.05	-2.61	0.88	-0.09	0.40
Laredo	0.8	-10.24	-12.42	-11.33	-0.89	-2.69	-1.79	-5.23	-7.75	-6.49	-1.04	-2.32	-1.68
Longview	0.8	-2.70	-6.07	-4.39	3.85	1.38	2.62	2.31	-1.40	0.46	3.70	1.75	2.73
Midland	0.8	23.27	3.67	13.47	14.11	4.31	9.21	30.46	10.13	20.30	13.56	4.53	9.05
Odessa	0.6	6.66	-4.37	1.15	5.71	0.54	3.13	13.85	2.09	7.97	5.16	0.76	2.96
Abilene	0.6	-7.41	-8.16	-7.79	1.79	0.21	1.00	-0.22	-1.70	-0.96	1.24	0.43	0.83
Wichita Falls	0.5	-5.09	-8.06	-6.58	1.36	-0.25	0.56	2.10	-1.60	0.25	0.81	-0.03	0.39
San Angelo	0.4	-7.46	-10.32	-8.89	-0.66	-1.83	-1.25	-0.27	-3.86	-2.07	-1.21	-1.61	-1.41
Sherman	0.4	-8.80	-9.15	-8.98	-10.33	-4.48	-7.41	-1.61	-2.69	-2.15	-10.88	-4.26	-7.57
Victoria	0.4	-1.28	-5.92	-3.60	4.18	1.09	2.64	5.91	0.54	3.23	3.63	1.31	2.47
Texarkana (pt)	0.3	-2.79	-7.83	-5.31	0.72	-1.64	-0.46	4.40	-1.37	1.52	0.17	-1.42	-0.63
Balance of State	10.7	1.79	-6.17	-2.19	9.09	4.06	6.58						

(continued)

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
TEXAS (continued)

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Texas

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
UTAH

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
UTAH	1,491.8	2.87	1.15	2.01	1.48	1.08	1.28						
Salt Lake City	48.9%	6.91	5.32	6.12	1.38	1.33	1.36	8.05	5.70	6.88	1.30	1.21	1.26
Ogden	17.5	1.53	-1.55	-0.01	0.94	0.40	0.67	5.06	1.21	3.14	1.55	0.89	1.22
Provo	16.6	2.57	0.18	1.38	3.08	2.07	2.58	6.10	2.94	4.52	3.69	2.56	3.13
St. George	4.1	-12.42	-6.53	-9.48	1.38	1.67	1.53	-5.23	-0.07	-2.65	0.83	1.89	1.36
Logan (pt)	3.8	-2.61	-5.96	-4.29	0.42	-1.31	-0.45	4.58	0.50	2.54	-0.13	-1.09	-0.61
Balance of State	9.1	-6.44	-7.81	-7.12	0.63	-0.03	0.30						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Utah

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
VERMONT

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean						
		2015			2001-to-2015 Change			2015			2001-to-2015 Change			
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	
VERMONT	356.9	-5.47	-1.96	-3.72	0.04	0.15	0.10							
Burlington	38.1%	3.68	2.82	3.25	-3.42	-0.37	-1.90	8.69	7.49	8.09	-3.57	0.00	-1.79	
Balance of State	61.9	-11.10	-4.90	-8.00	2.17	0.47	1.32							

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
VIRGINIA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
VIRGINIA	4,234.3	3.36	3.29	3.33	0.46	1.28	0.87						
Washington (pt)	35.7%	11.83	12.78	12.31	-1.15	0.72	-0.22	8.39	9.28	8.84	-0.68	0.76	0.04
Virginia Beach (pt)	20.4	-1.62	-2.38	-2.00	1.24	0.86	1.05	-0.48	-2.00	-1.24	1.16	0.74	0.95
Richmond	16.1	2.24	1.48	1.86	-3.15	-0.51	-1.83	3.38	1.86	2.62	-3.23	-0.63	-1.93
Roanoke	3.9	-2.40	-3.16	-2.78	-1.01	-0.21	-0.61	2.61	1.51	2.06	-1.16	0.16	-0.50
Charlottesville	2.9	0.22	4.97	2.60	2.37	2.10	2.24	5.23	9.64	7.44	2.22	2.47	2.35
Lynchburg	2.8	-6.93	-6.75	-6.84	-2.74	-2.44	-2.59	-1.92	-2.08	-2.00	-2.89	-2.07	-2.48
Blacksburg	1.8	-7.08	-4.10	-5.59	-0.16	0.05	-0.05	0.11	2.36	1.24	-0.71	0.27	-0.22
Harrisonburg	1.6	-12.19	-11.12	-11.66	0.29	-0.10	0.10	-5.00	-4.66	-4.83	-0.26	0.12	-0.07
Winchester (pt)	1.4	-6.01	-5.95	-5.98	3.29	1.45	2.37	1.18	0.51	0.85	2.74	1.67	2.21
Staunton	1.2	-7.39	-8.52	-7.96	-3.20	-1.53	-2.37	-0.20	-2.06	-1.13	-3.75	-1.31	-2.53
Kingsport (pt)	0.9	-8.71	-6.46	-7.59	0.17	0.66	0.42	-3.70	-1.79	-2.75	0.02	1.03	0.53
Balance of State	11.3	-0.42	-3.28	-1.85	10.28	8.29	9.28						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Virginia

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
WASHINGTON

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
WASHINGTON	3,539.3	3.02	2.20	2.61	2.29	1.13	1.71						
Seattle	58.5%	10.22	7.88	9.05	2.74	1.48	2.11	6.78	4.38	5.58	3.21	1.52	2.37
Spokane	7.1	-4.78	-3.67	-4.23	0.40	-0.03	0.19	-1.25	-0.91	-1.08	1.01	0.46	0.74
Portland (pt)	4.7	-0.54	-1.62	-1.08	1.11	1.07	1.09	-3.98	-5.12	-4.55	1.58	1.11	1.35
Kennewick	3.6	-6.54	-2.23	-4.39	1.01	0.88	0.95	-1.53	2.44	0.46	0.86	1.25	1.06
Yakima	3.4	-18.79	-16.32	-17.56	0.07	-1.08	-0.51	-13.78	-11.65	-12.72	-0.08	-0.71	-0.40
Olympia	3.3	-3.78	4.46	0.34	-0.15	-0.22	-0.19	1.23	9.13	5.18	-0.30	0.15	-0.07
Bremerton	3.0	2.92	-2.15	0.39	4.13	1.19	2.66	7.93	2.52	5.23	3.98	1.56	2.77
Bellingham	2.8	-7.87	-7.37	-7.62	0.41	-0.22	0.09	-0.68	-0.91	-0.80	-0.14	0.00	-0.07
Wenatchee	1.7	-19.35	-15.07	-17.21	-1.10	-0.27	-0.69	-12.16	-8.61	-10.39	-1.65	-0.05	-0.85
Mount Vernon	1.5	-8.17	-8.38	-8.28	2.61	0.94	1.78	-0.98	-1.92	-1.45	2.06	1.16	1.61
Longview	1.2	-7.54	-10.19	-8.87	1.12	0.26	0.69	-0.35	-3.73	-2.04	0.57	0.48	0.53
Walla Walla	0.9	-10.26	-7.29	-8.78	2.60	1.23	1.92	-3.07	-0.83	-1.95	2.05	1.45	1.75
Lewiston (pt)	0.2	-16.80	-8.01	-12.41	1.36	1.68	1.52	-9.61	-1.55	-5.58	0.81	1.90	1.36
Balance of State	8.0	-9.89	-9.09	-9.49	4.68	2.13	3.40						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Washington

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
WEST VIRGINIA

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
WEST VIRGINIA	766.7	-0.01	-3.80	-1.91	1.72	-0.02	0.85						
Charleston	15.4%	4.01	1.93	2.97	-0.79	0.01	-0.39	9.02	6.60	7.81	-0.94	0.38	-0.28
Huntington (pt)	11.9	-3.03	-4.52	-3.78	-1.27	-0.55	-0.91	1.98	0.15	1.07	-1.42	-0.18	-0.80
Morgantown	8.9	6.02	1.33	3.68	6.29	-0.53	2.88	13.21	7.79	10.50	5.74	-0.31	2.72
Beckley	6.1	-4.75	-5.08	-4.92	1.43	-0.52	0.46	2.44	1.38	1.91	0.88	-0.30	0.29
Wheeling (pt)	5.6	0.73	-4.45	-1.86	2.14	-0.62	0.76	7.92	2.01	4.97	1.59	-0.40	0.60
Parkersburg	5.5	-4.15	-5.93	-5.04	-1.79	-0.97	-1.38	3.04	0.53	1.79	-2.34	-0.75	-1.55
Hagerstown (pt)	4.7	-3.27	-6.80	-5.04	0.11	-0.87	-0.38	1.74	-2.13	-0.20	-0.04	-0.50	-0.27
Washington (pt)	2.6	-10.07	-8.09	-9.08	1.83	-2.64	-0.41	-13.51	-11.59	-12.55	2.30	-2.60	-0.15
Weirton (pt)	2.6	-4.87	-6.51	-5.69	-3.53	0.50	-1.52	2.32	-0.05	1.14	-4.08	0.72	-1.68
Cumberland (pt)	1.1	2.47	-9.13	-3.33	6.44	-0.51	2.97	9.66	-2.67	3.50	5.89	-0.29	2.80
Winchester (pt)	0.6	-9.33	-7.75	-8.54	3.24	2.34	2.79	-2.14	-1.29	-1.72	2.69	2.56	2.63
Balance of State	34.9	0.72	-5.54	-2.41	3.63	0.86	2.24						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within West Virginia

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
WISCONSIN

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
WISCONSIN	3,074.3	-2.37	-3.66	-3.02	2.25	0.54	1.40						
Milwaukee	28.8%	0.16	0.15	0.16	0.06	-0.39	-0.17	1.30	0.53	0.92	-0.02	-0.51	-0.27
Madison	13.2	7.23	5.59	6.41	7.25	2.87	5.06	8.37	5.97	7.17	7.17	2.75	4.96
Green Bay	5.9	0.16	-4.80	-2.32	3.69	0.79	2.24	5.17	-0.13	2.52	3.54	1.16	2.35
Appleton	4.2	-6.27	-5.59	-5.93	0.35	0.30	0.33	-1.26	-0.92	-1.09	0.20	0.67	0.44
Oshkosh	3.1	1.90	-3.62	-0.86	2.56	1.91	2.24	9.09	2.84	5.97	2.01	2.13	2.07
Eau Claire	2.9	-2.28	-6.15	-4.22	3.62	0.24	1.93	4.91	0.31	2.61	3.07	0.46	1.77
Racine	2.6	-6.56	-9.59	-8.08	-0.39	-1.71	-1.05	0.63	-3.13	-1.25	-0.94	-1.49	-1.22
Wausau	2.5	-2.17	-5.67	-3.92	2.51	1.30	1.91	5.02	0.79	2.91	1.96	1.52	1.74
La Crosse (pt)	2.4	-7.07	-5.96	-6.52	1.88	0.57	1.23	0.12	0.50	0.31	1.33	0.79	1.06
Janesville	2.3	-6.99	-7.91	-7.45	-1.69	0.05	-0.82	0.20	-1.45	-0.63	-2.24	0.27	-0.99
Chicago (pt)	2.2	-11.22	-7.61	-9.42	0.56	-1.62	-0.53	-14.66	-11.11	-12.89	1.03	-1.58	-0.28
Sheboygan	2.1	-7.36	-8.45	-7.91	-0.63	-2.13	-1.38	-0.17	-1.99	-1.08	-1.18	-1.91	-1.55
Fond du Lac	1.7	-6.15	-6.79	-6.47	1.43	1.00	1.22	1.04	-0.33	0.36	0.88	1.22	1.05
Minneapolis (pt)	1.6	-12.77	-9.18	-10.98	1.71	0.37	1.04	-16.21	-12.68	-14.45	2.18	0.41	1.30
Duluth (pt)	0.6	-8.34	-11.78	-10.06	6.46	0.80	3.63	-3.33	-7.11	-5.22	6.31	1.17	3.74
Balance of State	24.0	-7.49	-9.33	-8.41	2.98	0.83	1.90						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

(pt): That portion of the metro area within Wisconsin

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

TABLE 5 (Continued)
JOB QUALITY BY METROPOLITAN AREA WITHIN STATES
WYOMING

	2015 Empl*	Relative to National Average						Relative to Size-Class Mean					
		2015			2001-to-2015 Change			2015			2001-to-2015 Change		
		IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
WYOMING	322.2	1.61	-3.46	-0.93	3.38	1.00	2.19						
Cheyenne	16.9%	-0.03	0.32	0.15	1.31	0.25	0.78	7.16	6.78	6.97	0.76	0.47	0.62
Casper	14.2	2.25	-1.93	0.16	2.76	0.72	1.74	9.44	4.53	6.99	2.21	0.94	1.58
Balance of State	68.9	1.88	-4.71	-1.41	4.02	1.24	2.63						

* For the state, employment is shown as the number in thousands. For the metropolitan areas and the balance of the state, employment is shown as a percentage of the state total.

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

CLUSTERS IN ARIZONA AND ITS METROPOLITAN AREAS

The 2015 industrial mix and the 2001-to-2015 change in industrial mix are examined for Arizona and each of its seven metropolitan areas by cluster, with a focus on traded clusters. Arizona's metro areas follow, along with their constituent counties and 2015 employment in thousands:

- Phoenix-Mesa-Scottsdale, Maricopa and Pinal counties: 2,060
- Tucson, Pima County: 409
- Yuma, Yuma County: 75
- Prescott, Yavapai County: 71
- Flagstaff, Coconino County: 68
- Lake Havasu City-Kingman, Mohave County: 54
- Sierra Vista-Douglas, Cochise County: 44

The total industrial mix values in 2015 are shown in Table 6, split into the traded-cluster total and the nontraded-cluster total. The traded-cluster and total industrial mix values in the metropolitan areas were substantially different compared to the size-class mean than to the national average, with the comparison to the size class lowering the values for Metro Phoenix but raising the values for the other metro areas. In contrast, the nontraded values compared to the size-class mean were not that different from the values relative to the national average.

The traded-cluster total was below the national average in 2015 in each of the metropolitan areas except Phoenix. Compared to the size-class mean, the traded-cluster total was considerably higher in Metro Sierra Vista, about equal in Metro Tucson, and lower in each of the other metro areas, with substantial shortfalls in the Yuma and Lake Havasu City metro areas.

In Table 7, the traded clusters having significant positive and negative effects on the industrial job mix in 2015 are listed for each of the metropolitan areas. The comparison to the size-class median as well as mean is included. In most cases, the difference between the mean and median is not substantial, but there are exceptions, such as the information technology and analytical instruments cluster in the Phoenix area.

In Metro Phoenix, the business services cluster was the largest cause of the subpar traded-cluster job mix value relative to the size-class mean in 2015, due to a below-average proportion of employment in this high-paying cluster. No cluster had a strong positive influence, with the above-average size of the high-paying financial services cluster having the greatest effect. The net effect of the clusters not listed in Table 7 was somewhat negative.

The Tucson area's traded-cluster job mix value was barely less than the size-class mean. A very high value in the aerospace vehicles and defense cluster and a high value in the federal government cluster (related to Davis-Monthan Air Force Base) each was the result of an above-average share of employment in an above-average-paying cluster. These high job mix values were partially offset by a very low value in the business services cluster; relatively few jobs in the high-paying financial services cluster also had a negative effect on job quality. The net effect of the clusters not listed in Table 7 was negative.

**TABLE 6
INDUSTRIAL MIX IN ARIZONA**

State and Metropolitan Area 2015	Relative to Nation			Relative to Size-Class Mean		
	Traded Clusters	Non-traded Clusters	Total	Traded Clusters	Non-traded Clusters	Total
Arizona	-0.85	0.26	-0.60			
Phoenix	0.52	0.42	0.95	-3.08	0.59	-2.49
Tucson	-1.20	-1.13	-2.32	-0.04	-1.13	-1.17
Yuma	-16.93	3.37	-13.55	-10.20	3.84	-6.36
Prescott	-9.60	-4.22	-13.83	-2.88	-3.76	-6.64
Flagstaff	-8.38	-0.58	-8.96	-1.66	-0.11	-1.77
Lake Havasu City	-11.82	-2.82	-14.65	-5.10	-2.35	-7.45
Sierra Vista	-1.69	1.03	-0.66	5.04	1.50	6.54
2001-to-2015 Change						
Arizona	-1.34	0.96	-0.38			
Phoenix	-1.81	0.65	-1.15	-1.55	0.86	-0.69
Tucson	-2.83	1.28	-1.55	-2.82	1.18	-1.64
Yuma	3.63	2.45	6.08	3.47	2.06	5.53
Prescott	0.56	0.75	1.32	0.40	0.36	0.76
Flagstaff	0.33	1.92	2.24	0.17	1.52	1.69
Lake Havasu City	-1.51	1.95	0.44	-1.67	1.55	-0.11
Sierra Vista	2.68	2.05	4.74	2.52	1.66	4.18

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

Each of Arizona's other metropolitan areas are much less populous; each of the five are compared to the size class with fewer than 100,000 workers. Substantial differences existed across these metro areas in the traded-cluster job mix value in 2015 and in the clusters contributing strongly (positively and negatively).

Metro Sierra Vista had a traded-cluster job mix value much above the size-class mean. The federal government was primarily responsible for the high job mix value, a result of the large size of Fort Huachuca relative to the metro economy. None of the clusters had a sizable negative effect. The net effect of the clusters not listed in Table 7 was moderately negative.

The traded-cluster job mix value was somewhat below the size-class mean in the Prescott metro area. While a number of clusters are listed in Table 7, most had a relatively small job mix value. The net effect of the clusters not listed in Table 7 was negative.

In the Flagstaff metro area, the traded-cluster job mix value also was somewhat below the size-class mean. The medical devices and federal government clusters were strong contributors to job quality due to disproportionately high employment and above-average earnings per worker, but tourism had a very large negative effect. With attractions including the Grand Canyon, Metro Flagstaff receives many visitors and has a large share of its employment in the tourism cluster,

TABLE 7
CLUSTERS HAVING A SIGNIFICANT IMPACT ON THE 2015 TRADED-CLUSTER
INDUSTRIAL MIX IN ARIZONA'S METROPOLITAN AREAS

Metropolitan Area and Cluster	Relative To:		
	Nation	Size-Class Mean	Size-Class Median
Phoenix			
Financial Services	1.04	0.62	1.07
Aerospace Vehicles and Defense	0.50	0.37	0.65
Information Technology and Analytical Instruments	0.87	0.02	1.30
Business Services	-0.44	-1.70	-1.51
Federal Government	-0.49	-0.61	-0.22
Education and Knowledge Creation	-0.32	-0.52	-0.31
Marketing, Design, and Publishing	-0.17	-0.45	-0.09
Oil and Gas Production and Transportation	-0.55	-0.36	-0.02
Tucson			
Aerospace Vehicles and Defense	3.75	3.78	4.05
Federal Government	0.96	0.96	1.16
Information Technology and Analytical Instruments	0.12	0.37	0.75
Education and Knowledge Creation	0.24	0.30	0.55
Metal Mining	0.24	0.25	0.26
Business Services	-2.57	-2.32	-1.95
Financial Services	-1.67	-0.72	-0.08
Distribution and Electronic Commerce	-0.72	-0.47	-0.49
Oil and Gas Production and Transportation	-0.52	-0.33	0.01
Hospitality and Tourism	-0.30	-0.32	-0.49
Yuma			
Federal Government	1.52	1.51	2.23
Hospitality and Tourism	0.11	0.25	-0.04
Agricultural Inputs and Services	-5.78	-5.66	-5.85
Farming and Ranching	-2.08	-1.79	-2.13
Business Services	-3.50	-1.38	-1.03
Financial Services	-2.02	-0.51	-0.43
Production Technology and Heavy Machinery	-0.18	-0.30	-0.11
Information Technology and Analytical Instruments	-1.00	-0.28	-0.06
Prescott			
Metal Mining	0.63	0.63	0.65
Federal Government	0.47	0.46	1.18
Farming and Ranching	0.17	0.47	0.12
Aerospace Vehicles and Defense	0.02	0.29	0.41
Information Technology and Analytical Instruments	-0.68	0.04	0.25
Business Services	-3.19	-1.06	-0.72
Hospitality and Tourism	-0.94	-0.80	-1.09
Oil and Gas Production and Transportation	-0.53	-0.57	0.01
Education and Knowledge Creation	-0.60	-0.36	-0.24
Electric Power Generation and Transmission	-0.17	-0.29	-0.08
Insurance Services	-0.52	-0.25	-0.04
Flagstaff			
Medical Devices	2.54	2.56	2.65
Federal Government	2.19	2.18	2.90
Farming and Ranching	0.33	0.62	0.28
Agricultural Inputs and Services	0.13	0.25	0.06

(continued)

TABLE 7 (continued)
CLUSTERS HAVING A SIGNIFICANT IMPACT ON THE 2015 TRADED-CLUSTER INDUSTRIAL MIX IN ARIZONA'S METROPOLITAN AREAS

Metropolitan Area and Cluster	Relative To:		
	Nation	Size-Class Mean	Size-Class Median
Flagstaff (continued)			
Hospitality and Tourism	-3.31	-3.17	-3.46
Business Services	-3.04	-0.91	-0.57
Oil and Gas Production and Transportation	-0.42	-0.46	0.12
Financial Services	-1.92	-0.42	-0.33
Production Technology and Heavy Machinery	-0.17	-0.29	-0.10
Information Technology and Analytical Instruments	-1.01	-0.29	-0.07
Insurance Services	-0.52	-0.26	-0.04
Lake Havasu City			
Farming and Ranching	0.13	0.43	0.08
Agricultural Inputs and Services	0.12	0.25	0.06
Hospitality and Tourism	-1.21	-1.07	-1.36
Business Services	-3.10	-0.98	-0.63
Federal Government	-0.74	-0.76	-0.03
Oil and Gas Production and Transportation	-0.46	-0.50	0.09
Information Technology and Analytical Instruments	-1.00	-0.28	-0.06
Production Technology and Heavy Machinery	-0.14	-0.26	-0.07
Furniture	-0.24	-0.23	-0.26
Sierra Vista			
Federal Government	6.75	6.73	7.46
Business Services	-1.17	0.95	1.30
Education and Knowledge Creation	0.32	0.56	0.68
Insurance Services	-0.02	0.25	0.46
Electric Power Generation and Transmission	0.27	0.15	0.36
Hospitality and Tourism	-0.11	0.03	-0.26
Oil and Gas Production and Transportation	-0.55	-0.59	0.00
Financial Services	-2.02	-0.52	-0.44
Farming and Ranching	-0.79	-0.49	-0.84
Distribution and Electronic Commerce	-1.15	-0.36	-0.30
Production Technology and Heavy Machinery	-0.17	-0.29	-0.10
Information Technology and Analytical Instruments	-1.00	-0.28	-0.07

Note: Clusters with a value of at least 0.25 (positive or negative) relative to either the size-class mean or the size-class median are listed in the order of the size class mean, with positive values listed first.

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com. Most of the clusters were defined by the Institute for Strategy and Competitiveness at the Harvard Business School.

but most tourism jobs are low paying, with some either part time or seasonal. The net effect of the clusters not listed in Table 7 was negative.

The traded-cluster job mix value was considerably below the size-class mean in the Lake Havasu City metro area. The major issue in this metro area is a lack of clusters providing much of a positive effect on the job mix — the only clusters with a positive effect in Table 7 relate to the limited presence of agriculture. The tourism and business services clusters had the largest negative effects on the traded-cluster job mix. The net effect of the clusters not listed in Table 7 was negative.

The Yuma area's very low traded-cluster job mix value relative to the size-class mean largely resulted from the metro area's dependence on low-paying agriculture. The business services cluster also had a negative effect, but this was offset by the federal government cluster (again largely due to military activities). The net effect of the clusters not listed in Table 7 was considerably negative.

For Arizona as a whole relative to the national average, only five clusters had an industrial mix value in 2015 that was at least 0.25 (positive or negative). The aerospace vehicles and defense cluster had the largest positive impact (0.84) on the traded-cluster job mix in 2015, with positive contributions from the Phoenix and Tucson metro areas. The next-largest positive effects came from the information technology and analytical instruments cluster (0.50), primarily due to activity in the Phoenix area, and the financial services cluster (0.33); the industrial mix value for financial services was positive only in Metro Phoenix. The largest negative effect came from the business services cluster (-1.05), with negative values in each of the metro areas relative to the U.S. average. The job mix value was -0.53 in the oil and gas production and transportation cluster. The net job mix value in the other 48 traded clusters was -0.94.

The 2001-to-2015 change in the industrial mix also is shown in Table 6. Relative to the comparison to the nation, the comparison to the size-class mean is not much different. The change in the traded-sector values ranged widely across the metropolitan areas, with three metros experiencing declines — including the two large metro areas. In contrast, the nontraded-cluster value rose in each metro area.

The list of clusters having a significant impact on the 2001-to-2015 change in the traded-cluster job mix is shown for each metropolitan area in Table 8. In each metro area, the net change in the clusters not listed in Table 8 is relatively small, ranging from -0.22 to 0.54.

The Phoenix area's decline in the traded-cluster job mix was predominantly due to the information technology and analytical instruments cluster. This cluster also was the largest factor in the Tucson area's decline in the traded-cluster job mix, but the aerospace vehicles and defense and business services clusters also had significant negative effects. Metro Lake Havasu City also experienced a decline in the traded-cluster job mix relative to the size-class mean, but no single cluster had a large negative effect.

The Prescott and Flagstaff areas had small gains in the traded-cluster job mix between 2001 and 2015. In Flagstaff, a sizable boost from the medical devices cluster was largely offset by a decline in the federal government cluster. Changes by cluster in the Prescott area were small.

The Sierra Vista and Yuma areas had greater gains in the traded-cluster job mix. In Sierra Vista, this largely resulted from the federal government cluster. In Yuma, declines in agricultural activity boosted job quality.

For Arizona as a whole relative to the national average, only five clusters had a 2001-to-2015 change in industrial mix value that was at least 0.25 (positive or negative). Only financial services had a positive figure (0.28), with small positive figures in several metro areas. The largest change in the job mix value was in the information technology and analytical instruments cluster (-1.29), which experienced a significant drop due to sizable decreases in each of the two large metro areas. Each of the other metro areas had a small gain in value in this cluster. The aerospace vehicles and defense cluster had the next-largest negative impact (-0.34) on the change in the traded-sector job mix, due to the decline in the Tucson metro area. Other negative effects came from the electric power generation and transmission cluster (-0.29), with decreases in the Phoenix and Sierra Vista areas, and the business services cluster (-0.28), with negative values in each of the metro areas. The net change in job mix value in the other 48 traded clusters was 0.58.

TABLE 8
CLUSTERS HAVING A SIGNIFICANT IMPACT ON THE 2001-TO-2015 CHANGE IN
THE TRADED-CLUSTER INDUSTRIAL MIX IN ARIZONA'S METROPOLITAN AREAS

Metropolitan Area and Cluster	Relative To:		
	Nation	Size-Class Mean	Size-Class Median
Phoenix			
Financial Services	0.25	0.27	0.25
Information Technology and Analytical Instruments	-1.51	-1.24	-1.54
Electric Power Generation and Transmission	-0.44	-0.44	-0.49
Business Services	-0.10	-0.33	-0.18
Marketing, Design, and Publishing	-0.06	-0.28	0.01
Tucson			
Federal Government	0.63	0.59	0.66
Insurance Services	0.23	0.31	0.25
Education and Knowledge Creation	0.20	0.19	0.25
Information Technology and Analytical Instruments	-2.03	-2.20	-2.38
Aerospace Vehicles and Defense	-1.14	-1.18	-1.20
Business Services	-1.07	-0.97	-0.73
Yuma			
Agricultural Inputs and Services	1.96	1.94	1.95
Federal Government	0.68	0.64	0.76
Farming and Ranching	0.62	0.59	0.66
Textile Manufacturing	0.36	0.35	0.40
Insurance Services	0.30	0.25	0.26
Business Services	-1.21	-0.71	-0.81
Prescott			
Information Technology and Analytical Instruments	0.46	0.28	0.07
Business Services	-0.82	-0.32	-0.42
Flagstaff			
Medical Devices	1.60	1.60	1.60
Federal Government	-1.29	-1.33	-1.21
Lake Havasu City			
Construction Products and Services	-0.59	-0.59	-0.59
Hospitality and Tourism	-0.61	-0.56	-0.57
Business Services	-0.80	-0.30	-0.39
Sierra Vista			
Federal Government	2.03	1.99	2.11
Education and Knowledge Creation	0.60	0.65	0.64
Insurance Services	0.51	0.46	0.47
Electric Power Generation and Transmission	-0.82	-0.83	-0.91

Note: Clusters with a change in value of at least 0.25 (positive or negative) relative to either the size-class mean or the size-class median are listed in the order of the size class mean, with positive values listed first.

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com. Most of the clusters were defined by the Institute for Strategy and Competitiveness at the Harvard Business School.

**APPENDIX: JOB QUALITY FOR METROPOLITAN AREAS
THAT EXTEND ACROSS STATE LINES**

	2015			2001-to-2015 Change			Relative to Size-Class Average					
	IM	OM	JQ	IM	OM	JQ	2015			2001-to-2015 Change		
	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
Allentown, PA-NJ	-4.21	-4.45	-4.33	-3.26	-1.10	-2.18	-3.07	-4.07	-3.57	-3.34	-1.22	-2.28
Augusta, GA-SC	-3.20	-3.80	-3.50	1.72	0.82	1.27	0.33	-1.04	-0.35	2.33	1.31	1.82
Boston, MA-NH	9.95	11.32	10.64	-4.17	-1.19	-2.68	6.51	7.82	7.17	-3.70	-1.15	-2.42
Cape Girardeau, MO-IL	-8.78	-7.10	-7.94	-2.32	-1.81	-2.07	-1.59	-0.64	-1.11	-2.87	-1.59	-2.23
Charlotte, NC-SC	2.85	2.12	2.48	1.95	1.52	1.74	-0.59	-1.38	-0.99	2.42	1.56	1.99
Chattanooga, TN-GA	-3.22	-2.58	-2.90	2.70	1.13	1.92	0.31	0.18	0.24	3.31	1.62	2.47
Chicago, IL-IN-WI	2.12	3.54	2.83	-1.52	-0.61	-1.07	-1.32	0.04	-0.64	-1.05	-0.57	-0.81
Cincinnati, OH-KY-IN	2.60	1.66	2.13	1.03	0.68	0.86	-0.84	-1.84	-1.34	1.50	0.72	1.11
Clarksville, TN-KY	-12.50	-10.40	-11.45	-1.60	-1.24	-1.42	-7.49	-5.73	-6.61	-1.75	-0.87	-1.31
Columbus, GA-AL	-2.65	-4.46	-3.56	-1.27	0.43	-0.42	2.36	0.21	1.28	-1.42	0.80	-0.31
Cumberland, MD-WV	-6.73	-4.97	-5.85	1.41	0.48	0.95	0.46	1.49	0.97	0.86	0.70	0.78
Davenport, IA-IL	-2.04	-2.37	-2.20	3.78	1.63	2.71	2.97	2.30	2.64	3.63	2.00	2.82
Duluth, MN-WI	-5.40	-6.24	-5.82	0.03	-0.58	-0.27	-0.39	-1.57	-0.98	-0.12	-0.21	-0.16
Evansville, IN-KY	-3.35	-3.79	-3.57	-1.23	-0.17	-0.70	1.66	0.88	1.27	-1.38	0.20	-0.59
Fargo, ND-MN	0.39	-2.75	-1.18	3.22	1.19	2.20	5.40	1.92	3.66	3.07	1.56	2.31
Fayetteville, AR-MO	0.04	-1.38	-0.67	3.29	1.91	2.60	3.57	1.38	2.47	3.90	2.40	3.15
Fort Smith, AR-OK	-6.47	-8.67	-7.57	1.07	0.35	0.71	-1.46	-4.00	-2.73	0.92	0.72	0.82
Grand Forks, ND-MN	-10.63	-8.63	-9.63	2.39	0.67	1.53	-3.44	-2.17	-2.80	1.84	0.89	1.36
Hagerstown, MD-WV	-4.31	-4.82	-4.56	-0.07	-0.33	-0.20	0.70	-0.15	0.28	-0.22	0.04	-0.09
Huntington, WV-KY-OH	-4.22	-4.64	-4.43	-1.44	-0.23	-0.83	0.79	0.03	0.41	-1.59	0.14	-0.72
Kansas City, MO-KS	4.13	2.99	3.56	1.59	1.12	1.36	0.69	-0.51	0.09	2.06	1.16	1.61
Kingsport, TN-VA	-3.21	-4.53	-3.87	-1.16	-0.17	-0.66	1.80	0.14	0.97	-1.31	0.20	-0.55
La Crosse, WI-MN	-7.50	-6.19	-6.84	2.03	0.56	1.29	-0.31	0.27	-0.02	1.48	0.78	1.13
Lewiston, ID-WA	-6.42	-7.50	-6.96	1.33	0.61	0.97	0.77	-1.04	-0.14	0.78	0.83	0.81
Logan, UT-ID	-2.99	-5.97	-4.48	0.77	-0.96	-0.10	4.20	0.49	2.35	0.22	-0.74	-0.26
Louisville, KY-IN	-3.26	-2.68	-2.97	1.04	0.44	0.74	-2.12	-2.30	-2.21	0.96	0.32	0.64
Memphis, TN-MS-AR	-6.49	-4.75	-5.62	-1.38	-0.41	-0.90	-5.35	-4.37	-4.86	-1.46	-0.53	-1.00
Minneapolis, MN-WI	4.39	5.21	4.80	-1.13	-0.25	-0.69	0.95	1.71	1.33	-0.66	-0.21	-0.44
Myrtle Beach, SC-NC	-20.24	-14.65	-17.44	-1.37	-1.71	-1.54	-15.23	-9.98	-12.60	-1.52	-1.34	-1.43
New York, NY-NJ-PA	4.79	4.36	4.58	-4.42	-2.17	-3.29	1.35	0.86	1.11	-3.95	-2.13	-3.04

(continued)

**APPENDIX: JOB QUALITY FOR METROPOLITAN AREAS
THAT EXTEND ACROSS STATE LINES**

	2015			2001-to-2015 Change			Relative to Size-Class Average					
	IM	OM	JQ	IM	OM	JQ	2015			2001-to-2015 Change		
	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ	IM	OM	JQ
Omaha, NE-IA	0.10	0.61	0.35	0.95	0.52	0.73	1.24	0.99	1.11	0.87	0.40	0.63
Philadelphia, PA-NJ-DE-MD	3.51	2.42	2.97	-1.46	-1.14	-1.30	0.07	-1.08	-0.50	-0.99	-1.10	-1.04
Portland, OR-WA	2.55	3.81	3.18	-0.51	0.23	-0.14	-0.89	0.31	-0.29	-0.04	0.27	0.12
Providence, RI-MA	-4.66	0.34	-2.16	1.24	0.64	0.94	-3.52	0.72	-1.40	1.16	0.52	0.84
St. Joseph, MO-KS	-5.47	-8.01	-6.74	1.98	-0.71	0.64	1.72	-1.55	0.09	1.43	-0.49	0.47
St. Louis, MO-IL	1.29	0.55	0.92	0.03	-0.15	-0.06	-2.15	-2.95	-2.55	0.50	-0.11	0.20
Salisbury, MD-DE	-15.47	-10.63	-13.05	-0.84	-0.12	-0.48	-10.46	-5.96	-8.21	-0.99	0.25	-0.37
Sioux City, IA-NE-SD	-8.50	-8.67	-8.58	-1.00	-0.48	-0.74	-1.31	-2.21	-1.76	-1.55	-0.26	-0.90
South Bend, IN-MI	-7.85	-5.71	-6.78	-0.61	-1.24	-0.92	-2.84	-1.04	-1.94	-0.76	-0.87	-0.81
Texarkana, TX-AR	-4.27	-8.21	-6.24	0.79	-1.20	-0.21	2.92	-1.75	0.59	0.24	-0.98	-0.37
Virginia Beach, VA-NC	-1.87	-2.56	-2.21	1.10	0.77	0.94	-0.73	-2.18	-1.45	1.02	0.65	0.84
Washington, DC-VA-MD-WV	12.57	16.03	14.30	-1.03	0.79	-0.12	9.13	12.53	10.83	-0.56	0.83	0.13
Weirton, WV-OH	-6.26	-5.56	-5.91	-2.87	-0.11	-1.49	0.93	0.90	0.92	-3.42	0.11	-1.66
Wheeling, WV-OH	-2.92	-5.94	-4.43	3.93	-0.01	1.96	4.27	0.52	2.39	3.38	0.21	1.80
Winchester, VA-WV	-6.27	-6.09	-6.18	3.32	1.54	2.43	0.92	0.37	0.65	2.77	1.76	2.26
Worcester, MA-CT	-3.97	3.75	-0.11	-3.10	-0.61	-1.85	-2.83	4.13	0.65	-3.18	-0.73	-1.95
Youngstown, OH-PA	-9.24	-8.85	-9.05	-0.92	-0.95	-0.94	-5.71	-6.09	-5.90	-0.31	-0.46	-0.39

IM: Industrial Mix

OM: Occupational Mix

JQ: Job Quality (the average of the industrial mix and the occupational mix)

Source: Center for Competitiveness and Prosperity Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from data supplied by Economic Modeling Specialists International (Emsi), www.economicmodeling.com.

