

Manufacturing and Construction Decline in the Ranks of Top 10 Employers

By Rubén Hernández-Murillo and Elise Marifian



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More than three years have passed since the official end of the Great Recession. Unemployment rates remain stubbornly high, and economic output has fallen short of desired levels. As economists try to understand the forces behind the current economic situation, an interesting topic to consider is the changing composition of employment across industries, both at the national level and at the level of the Eighth Federal Reserve District, based in St. Louis. These changes are noteworthy because the trend of an increasing employment share in the services sector, accompanied by a declining employment share in the manufacturing sector, is likely to continue even after the recovery picks up more strength.

In this article, we analyze changes that occurred in the Eighth District and the United States between 2007 and 2010, specifically with respect to the distribution of employment and establishment size across broad industry categories. Because the Eighth District comprises one complete state and parts of six others, statewide data cannot be used, and we must instead analyze data at the county level.¹ The most useful data for this purpose are the County Business Patterns statistics from the Census Bureau. This data set contains annual statistics on employment, payrolls and the number of establishments by different industry classifications at the national, state, county and ZIP code levels.²

Perhaps not surprisingly, we found various similarities between the District and the U.S., particularly in the distribution of employment across industries and in the evolution of the manufacturing employment share relative to the services share. Interesting differences arise, however, when we examine

two specific aspects of manufacturing: the share of employment in the manufacturing sector, and the average size of manufacturing establishments. Both of these numbers are larger for the District than for the nation.

Industry Distribution in the District and the U.S.

The tables present the distribution of employment for the 10 largest two-digit industry classifications in the District and the U.S. for 2007 and 2010.³ The tables also provide average establishment sizes for each industry category.⁴ The industry classifications follow the North American Industry Classification System (NAICS).⁵

The five largest industries in terms of employment share are health care and social assistance (NAICS 62), retail trade (NAICS 44), manufacturing (NAICS 31), accommodation and food services (NAICS 72), and administrative and support and waste management and remediation services (NAICS 56). Other prominent industries common to both the District and the U.S. include construction (NAICS 23), wholesale trade (NAICS 42), other services (NAICS 81), and finance and insurance (NAICS 52).⁶ In the District, transportation and warehousing (NAICS 48) is also among the top 10, but it is not included in the nation's top 10. Conversely, the professional, scientific and technical services industry (NAICS 54) is among the top 10 in the nation, but not in the District.

Between 2007 and 2010, most industries maintained their relative rankings in both the District and the U.S., except for the manufacturing and construction sectors: Manufacturing dropped from third to fourth place in the nation and from first to third place in the District. Meanwhile, construction fell

from seventh to ninth place in the nation and from sixth to eighth place in the District. Clearly, as manufacturing and construction fell in the rankings, other industries rose, but their 2007 relative rankings were preserved.

Over the past several decades, the composition of industry at the national level has shifted away from manufacturing and toward services. Over the 2007-2010 period, this trend continued in both the District and the U.S. (although the manufacturing share has remained larger in the District compared with the nation).⁷ The aggregate employment share for the services sector in the U.S. increased from 81.7 percent to 84.2 percent, while the share of manufacturing employment declined from 11 percent to 9.7 percent. Similarly, the share of services employment in the District increased from 77.2 percent to 80.2 percent, while the manufacturing share declined from 15.9 percent to 13.5 percent.

Not only is the share of manufacturing employment larger in the District relative to the U.S., but manufacturing establishments are also larger in the District. The tables indicate that the typical size of a representative establishment (the number of employees divided by the number of establishments) in most of the top 10 industries is very similar for the District and the nation, except in manufacturing. In 2007, for example, the typical size of a manufacturing establishment in the U.S. was about 40 employees, while District manufacturing establishments had, on average, about 54 employees, a difference of 14 employees. In contrast, the absolute difference in average establishment size between any of the other common top industries in the District and the U.S. was fewer than four employees. By March 2010, about three quarters after the end of the recession, the

average size of establishments in manufacturing had declined considerably for both the District and the nation (from 40 to 36 in the nation and from 54 to 47 in the District); the District's manufacturing establishments continued to be larger than the nation's, by about 11 employees, on average.

Interestingly, the average size of establishments in nonmanufacturing industries changed very little between 2007 and 2010 for either the District or the nation, and the differences between the District and the nation also remained small in 2010.

Distribution across District's Counties

The County Business Patterns data also allow us to examine differences across counties in the District. Among the Eighth District's 339 counties, the distribution of manufacturing employment relative to employment in service industries varies considerably. According to the 2010 data, while the service share of total county employment was evenly distributed across the District counties, the manufacturing share of county employment was relatively more concentrated in a small number of counties. The average share of manufacturing employment in the District's counties was 19.4 percent. The bottom 25 percent of counties had a manufacturing employment share between 0 percent and 9.6 percent. In fact, the bottom half of counties had less than a 16.5 percent manufacturing share, while the top quarter of counties had a manufacturing share between 26.7 percent and 71.2 percent.

Furthermore, manufacturing employment was more concentrated in rural counties in 2010. The average manufacturing share in rural counties was about 21.8 percent, while in urban counties, the average was 17.2 percent. In contrast, the share of total employment in services averaged 74.3 percent across all District counties. The bottom quarter of counties had between 23.9 percent and 65.9 percent, while the top 50 percent of counties had more than a 75.8 percent services share. In the top quarter of counties, between 84.2 percent and 98.1 percent of workers were employed in service industries.

From 2007 to 2010, most counties saw a decline in the share of manufacturing employment and, equivalently, an increase

Eighth Federal Reserve District Employment Shares and Establishment Sizes by NAICS Industry

Rank 2007	Rank 2010	NAICS Code	Industry	2007 Share of Total Employment	2010 Share of Total Employment	2007 Average Establishment Size (in employees)	2010 Average Establishment Size (in employees)
1	3	31	Manufacturing	15.9%	13.5%	54.4	47.4
2	1	62	Health Care and Social Assistance	15.0	16.9	22.7	23.2
3	2	44	Retail Trade	13.5	13.8	12.9	12.9
4	4	72	Accommodation and Food Services	9.9	10.1	19.6	18.7
5	5	56	Administrative and Support and Waste Management and Remediation Services	6.1	6.0	22.5	20.6
6	8	23	Construction	5.6	4.7	8.9	8.2
7	6	48	Transportation and Warehousing	5.0	5.0	22.1	21.7
8	7	81	Other Services (except Public Administration)	4.8	4.8	7.0	6.8
9	9	42	Wholesale Trade	4.7	4.7	14.1	13.9
10	10	52	Finance and Insurance	4.4	4.6	9.8	9.8
Top 10				84.9	84.1	16.7	16.1
Total 2-digit				100.0	100.0	15.9	15.3
				2007 Employment	2010 Employment	2007 Establishments	2010 Establishments
Totals				5,432,844	5,061,860	342,017	330,802

U.S. Employment Shares and Establishment Sizes by NAICS Industry

Rank 2007	Rank 2010	NAICS Code	Industry	2007 Share of Total Employment	2010 Share of Total Employment	2007 Average Establishment Size (in employees)	2010 Average Establishment Size (in employees)
1	1	62	Health Care and Social Assistance	13.9%	15.9%	21.4	21.9
2	2	44	Retail Trade	13.1	12.9	14.0	13.6
3	4	31	Manufacturing	11.0	9.7	40.2	36.2
4	3	72	Accommodation and Food Services	9.6	10.1	18.3	17.6
5	5	56	Administrative and Support and Waste Management and Remediation Services	8.3	8.0	26.0	23.5
6	6	54	Professional, Scientific and Technical Services	6.8	7.0	9.4	9.2
7	9	23	Construction	6.0	4.8	9.0	7.9
8	7	52	Finance and Insurance	5.4	5.3	12.9	12.5
9	8	42	Wholesale Trade	4.9	5.0	13.7	13.5
10	10	81	Other Services (except Public Administration)	4.6	4.6	7.4	7.2
Top 10				83.7	83.4	15.2	14.7
Total 2-digit				100.0	100.0	15.7	15.1
				2007 Employment	2010 Employment	2007 Establishments	2010 Establishments
Totals				120,604,265	111,970,095	7,705,018	7,396,628

SOURCES: U.S. Census Bureau's County Business Patterns 2007 and 2010, 2007 NAICS.

NOTE: In the case of missing employment data, values were imputed. Components may not add to totals due to imputation and rounding. NAICS stands for North American Industry Classification System.

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in the share of services employment. Over this period, about 75 percent of counties also experienced a decline in average manufacturing establishment size, with an average decline of about eight employees per establishment across all counties. In contrast, fewer than 25 percent of counties experienced a decline in average service establishment size, but across all counties, the change in the number of employees per establishment was essentially zero on average. ⁹

Rubén Hernández-Murillo is an economist and Elise Marifian is a research analyst, both at the Federal Reserve Bank of St. Louis. For more on Hernández-Murillo's work, see <http://research.stlouisfed.org/econ/hernandez/>

ENDNOTES

- ¹ The Eighth Federal Reserve District contains the entire state of Arkansas, as well as parts of six other states: Illinois, Indiana, Kentucky, Mississippi, Missouri and Tennessee.
- ² The U.S. Census Bureau defines an establishment as: "a single physical location at which business is conducted or services or industrial operations are performed. It is not necessarily identical with a company or enterprise, which may consist of one or more establishments. When two or more activities are carried on at a single location under a single ownership, all activities generally are grouped together as a single establishment. The entire establishment is classified on the basis of its major activity, and all data are included in that classification. Establishment counts represent the number of locations with paid employees any time during the year."
- ³ The data are paid employees for March 2007 and March 2010.
- ⁴ The District data are obtained by aggregating county data. The county employment totals for two- and, especially, three-digit industries are often suppressed to prevent identity disclosures, but the establishment counts by size class are always provided. In the case of data suppression, the employment totals were imputed using the establishment data.
- ⁵ For more details, see www.census.gov/eos/www/naics/
- ⁶ Total employment computed in the County Business Patterns data may differ from the more commonly known payroll employment numbers from the Current Employment Statistics provided by the Bureau of Labor Statistics.
- ⁷ We define the services sector as the sum of industries with NAICS codes 42 to 81.

Eleven more charts are available on the web version of this issue. Among the areas they cover are agriculture, commercial banking, housing permits, income and jobs. Much of the data is specific to the Eighth District. To see these charts, go to stlouisfed.org/economyataglance

