

Oklahoma Job Quarterly Earnings Percentile Changes Manufacturing Years 2005 to 2015



OKLAHOMA

**Oklahoma Employment Security Commission
Economic Research and Analysis Division**

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Oklahoma Employment Security Commission
Richard McPherson, Executive Director

Economic Research and Analysis Division
Lynn Gray, Director

Will Rogers Memorial Office Building
Labor Market Information Unit, 4th Floor N
P.O. Box 52003
Oklahoma City, OK 73152-2003
Phone: (405) 405-557-7107
Fax: (405) 525-0139
jesse.fuchs@oesc.state.ok.us

By Jesse Fuchs, PhD, Analyst

Along with significant contributions from the following individuals:
Lynn Gray, Director; Huifen (Shirley) Zhang, Programs Manager; Monty Evans, Senior Economist;
James Mouser, QCEW Manager; and Kristie Brown, Analyst. .

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I. Introduction

In the most recently released 2014 Quarterly Census of Employment and Wages (QCEW) Oklahoma's manufacturing industry is 3rd in number of employees (9% of the total employment) and is 2nd largest in total annual payroll (\$7,570,895,159), just behind health care and social assistance. Although manufacturing employment fell to a ten year low of 123,490 employees in 2010, the size of industry employment has increased 14.4% since then. This recent 4-year increase trend indicates that manufacturing will continue to be a major Oklahoma employer.

In this report we used our agency's administrative earnings records to construct a 10-year history of changes for manufacturing earnings measured by percentiles; as previously done for an aggregate of all Oklahoma industries, the mining and health industries. The format for reporting the analysis for manufacturing will be the same as that used in the former publication for the aggregate of all Oklahoma industries. Namely the results for the recent five 1-year intervals, followed by long term 3-year changes, then by long term 10-year changes.

The data set is by job not individual. Consequently, if a person works two part-time jobs then the two part-time jobs would each show up separately. In addition, jobs with earnings less than \$300 were excluded for the reference quarter. The data for second quarter job quarter earnings for the years 2005 and 2015 as well as a number of years between are included, but the data set does not include federal jobs.

II. Manufacturing Percentile Job Quarterly Earnings, 1-Year Changes: 2011 to 2015

Table 1 shows the job quarterly earnings and percentile change for manufacturing between the 2nd quarter of 2011 and the 2nd quarter of 2012.

Table 1. Manufacturing Job Quarterly Earnings by Percentile: 2011 to 2012

Percentile	2011	2012	Numeric Change	Percent Change
5th	\$1,461	\$1,458	-\$3	-0.2
10th	\$2,958	\$2,983	\$25	0.8
20th	\$5,145	\$5,324	\$179	3.5
25th	\$5,840	\$6,053	\$213	3.6
30th	\$6,489	\$6,719	\$230	3.5
40th	\$7,741	\$8,037	\$296	3.8
50th	\$9,107	\$9,426	\$319	3.5
60th	\$10,625	\$10,959	\$334	3.1
70th	\$12,514	\$12,940	\$426	3.4
75th	\$13,732	\$14,135	\$403	2.9
80th	\$15,172	\$15,494	\$322	2.1
90th	\$19,478	\$19,868	\$390	2.0
95th	\$24,421	\$24,879	\$458	1.9
99th	\$43,962	\$44,217	\$255	0.6
Total Jobs	144,692	151,831	7,139	4.9

Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed.

Note³: The unit of analysis is a job.

Table 1 displays the manufacturing job percentile earnings changes from 2011 to 2012, revealing that the 95th percentile level had the largest dollar amount increase of \$458 and the 70th percentile level had the second-largest dollar amount increase of \$426. The mid-range percentile levels 25th to 75th had the larger

job quarterly earnings percent increase. The 40th percentile had the largest percent change at 3.8 percent.

Table 2. Manufacturing Job Quarterly Earnings by Percentile: 2012 to 2013

Percentile	2012	2013	Numeric Change	Percent Change
5th	\$1,458	\$1,568	\$110	7.5
10th	\$2,983	\$3,213	\$230	7.7
20th	\$5,324	\$5,510	\$186	3.5
25th	\$6,053	\$6,287	\$234	3.9
30th	\$6,719	\$6,978	\$259	3.9
40th	\$8,037	\$8,253	\$216	2.7
50th	\$9,426	\$9,627	\$201	2.1
60th	\$10,959	\$11,212	\$253	2.3
70th	\$12,940	\$13,287	\$347	2.7
75th	\$14,135	\$14,567	\$432	3.1
80th	\$15,494	\$16,005	\$511	3.3
90th	\$19,868	\$20,740	\$872	4.4
95th	\$24,879	\$26,124	\$1,245	5.0
99th	\$44,217	\$46,948	\$2,731	6.2
Total Jobs	151,831	152,705	874	0.6

Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed.

Note³: The unit of analysis is a job.

As shown in above in Table 2, the dollar amount and percent job earnings changes from 2012 to 2013 were all positive. The largest dollar amount change is \$2,731 in the 99th percentile. The largest percent change was 6.2 percent also in the 99th percentile. All of the larger percent earnings changes were either in the highest two percentiles or lowest two percentile levels.

Table 3. Manufacturing Job Quarterly Earnings by Percentile: 2013 to 2014

Percentile	2013	2014	Numeric Change	Percent Change
5th	\$1,568	\$1,503	-\$65	-4.1
10th	\$3,213	\$3,050	-\$163	-5.1
20th	\$5,510	\$5,541	\$31	0.6
25th	\$6,287	\$6,356	\$69	1.1
30th	\$6,978	\$7,099	\$121	1.7
40th	\$8,253	\$8,504	\$251	3.0
50th	\$9,627	\$9,982	\$355	3.7
60th	\$11,212	\$11,648	\$436	3.9
70th	\$13,287	\$13,749	\$462	3.5
75th	\$14,567	\$15,022	\$455	3.1
80th	\$16,005	\$16,483	\$478	3.0
90th	\$20,740	\$21,291	\$551	2.7
95th	\$26,124	\$26,855	\$732	2.8
99th	\$46,948	\$47,404	\$456	1.0
Total Jobs	152,705	156,738	4,033	2.6

Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed

Note³: The unit of analysis is a job.

As revealed in Table 3 shown on previous page, the dollar amount and percent job earnings percentile changes from 2013 to 2014 were lower than the previous year. The two lowest percentile levels showed a decline in dollar amount job earnings and a decrease in percent earnings. The largest percent change was in the 60th percentile (3.9 percent), with the 2nd largest change was in the 50th percentile level (3.7 percent).

Table 4. Manufacturing Job Quarterly Earnings by Percentile: 2014 to 2015

Percentile	2014	2015	Numeric Change	Percent Change
5th	\$1,503	\$1,600	\$97	6.5
10th	\$3,050	\$3,227	\$177	5.8
20th	\$5,541	\$5,644	\$103	1.9
25th	\$6,356	\$6,410	\$54	0.8
30th	\$7,099	\$7,109	\$10	0.1
40th	\$8,504	\$8,394	-\$110	-1.3
50th	\$9,982	\$9,835	-\$147	-1.5
60th	\$11,648	\$11,442	-\$206	-1.8
70th	\$13,749	\$13,579	-\$170	-1.2
75th	\$15,022	\$14,915	-\$107	-0.7
80th	\$16,483	\$16,444	-\$39	-0.2
90th	\$21,291	\$21,399	\$108	0.5
95th	\$26,855	\$27,200	\$345	1.3
99th	\$47,404	\$46,730	-\$673	-1.4
Total Jobs	156,738	155,049	-1,689	-1.1

Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed.

Note³: The unit of analysis is a job.

As shown above in Table 4, manufacturing job quarterly earnings changes for most percentiles during 2014 to 2015 were lower than in the previous three years. In fact, seven or half of the fourteen percentile levels shown in the table had a decrease in job quarterly earnings. Interestingly, the 5th, and 10th percentile levels increased in dollar amount earnings, with percent increases of 6.5 percent, 5.8 percent, respectively (Table 4). The 1-year interval having larger 5th and 10th percentile percent changes was years 2012 to 2014 when they had 7.5 percent and 7.7 percent increases (Table 2).

Another way to illustrate the manufacturing job quarterly earnings percentile change is with charts. Chart 1 (on the next page) illustrates the job quarterly earnings percentile changes for the 1-year intervals 2011 to 2015, as outlined in Tables 1, 2, 3 and 4. However the tables should be consulted for exact numbers.

Chart 1 on the next page shows that for increased dollar amounts the interval 2012 to 2013 was the best year for the majority of the percentiles; with the exceptions of 40th, 50th, 60th and 70th percentiles. These mid-level percentiles had larger increases in the previous year. The higher level 90th, 95th and 99th percentiles had especially large dollar amount increases in year 2012- 2013 of amounts \$872, 1,245, and \$2,731, respectively.

With the exception of the 5th and the 10th percentile levels, the dollar amount increases during 2012 to 2013 were positive, and the middle percentile levels of 40th through 75th had larger amount increases than the previous year. On the other hand, the dollar amount changes during the interval of 2014 to 2015 were smaller than previous years and seven of the fourteen percentile levels decreased. Interestingly, in the interval 2014 to 2015 the lower level 5th and 10th percentiles had their largest dollar amount increases since year interval 2012 to 2013.

Chart 1. Manufacturing Job Quarterly Earnings Percentile Dollar Change Per Year: 2011 to 2015

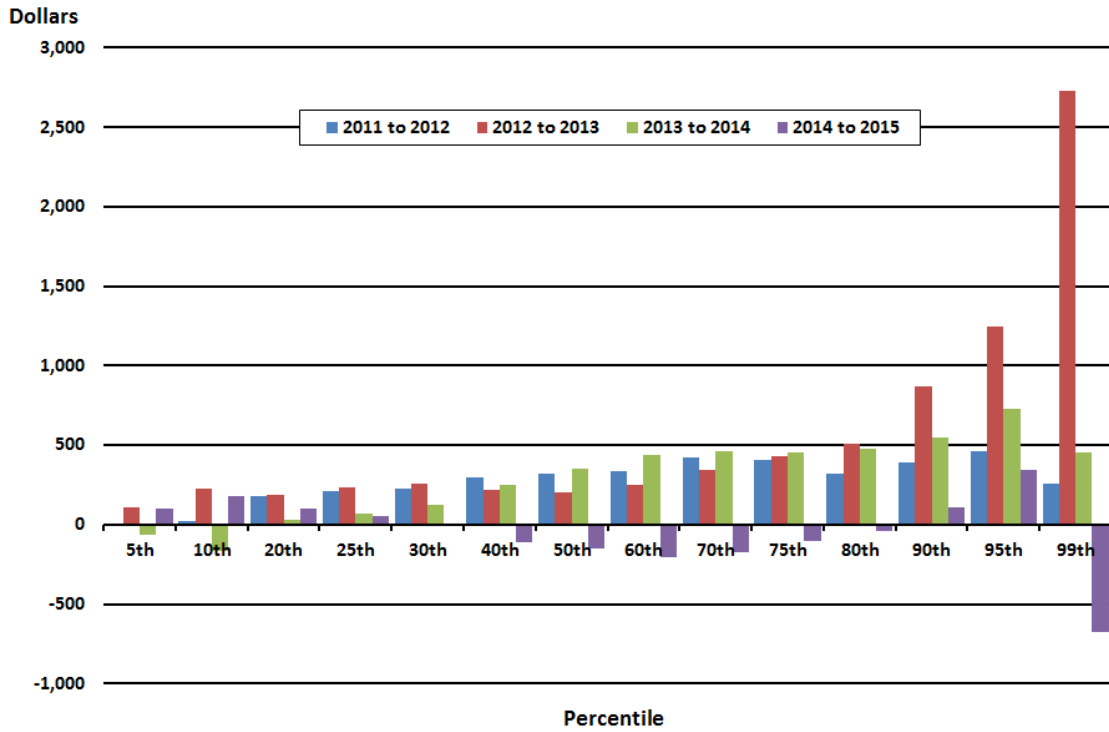
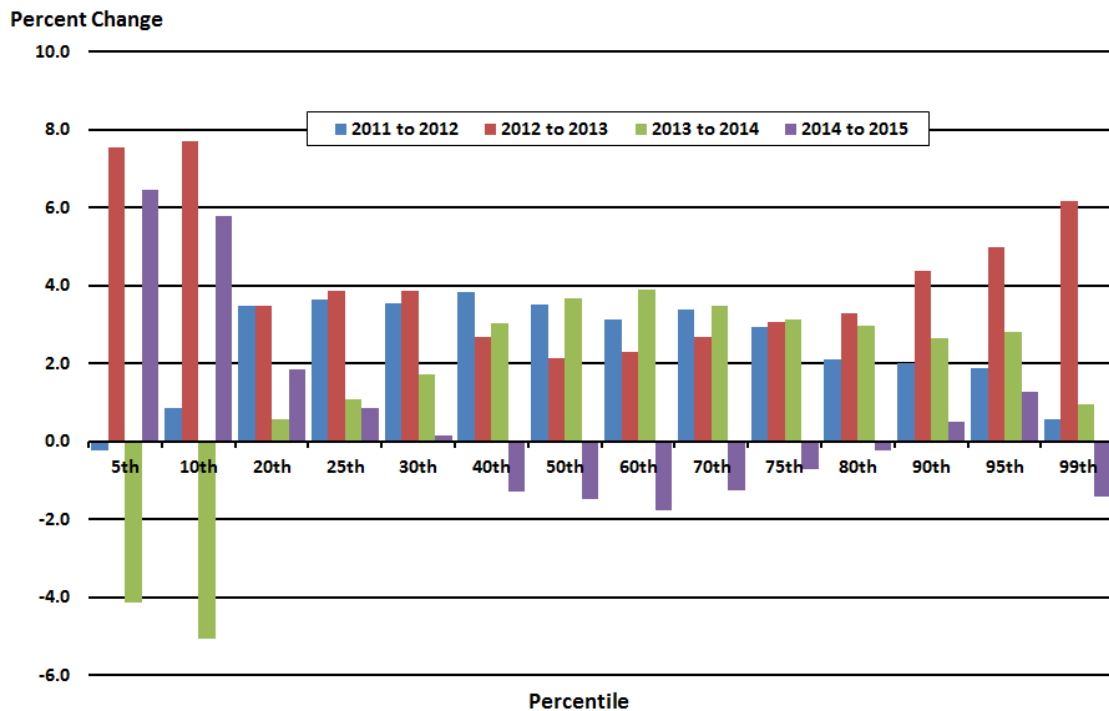


Chart 2 displays job quarterly earnings percent changes by percentile for manufacturing from 2011 to 2015.

Chart 2. Manufacturing Job Quarterly Earnings Percentile Percent Change Per Year: 2011 to 2015



On the previous page, Chart 2 shows that from 2011 to 2012 thirteen of the fourteen manufacturing job earnings percentiles percent increased; the exception was the 5th percentile that showed a -0.2% decline. The interval from 2012 to 2013 was an even better year for positive percent change, with the larger percent increases in the lower 5th (7.5 percent) and 10th (7.7 percent) percentiles and in the higher 95th (5.0%) and 99th (6.2%) percentiles. Smaller percent changes occurred between year 2013 to 2014, with the 5th and 10th percentiles having decreases. The worst interval for percentile percent changes was 2014 to 2015, when half of the fourteen percentiles experienced decrease.

III. Manufacturing Percentile Job Quarterly Earnings, 3-Year Changes: 2006 to 2015

This section looks at job earnings changes for manufacturing in 3-year intervals falling within 2006 to 2015. The advantage of a 3-year interval analysis over a 1-year analysis is that it allows comparisons of job earnings changes before and after the most recent ‘Great Recession. Oklahoma’s entry and exit from this recession was somewhat delayed than that of other states. However, it fell within the same three year period of 2009 to 2012.

Table 5 (below) displays the job quarterly earnings percentile changes in dollars and percent for manufacturing between the 2nd quarter of 2006 and the 2nd quarter of 2009. Although total employment for manufacturing fell by 13.4 percent during this 3-year interval, all manufacturing percentile levels had robust dollar amount increase, with the larger amounts incurring in the 99th, 95th and 90th percentiles. Among the lower level percentiles, the 10th percentile had the fourth largest dollar amount change of \$783. The percentile percent changes during this interval were greater at the lower percentile levels, with the largest increase in the 5th percentile (40.2 percent), the 2nd highest in the 10th percentile (35.3 percent) and the 3rd highest percent change in the 20th percentile (13.7 percent).

Table 5. Manufacturing Job Quarterly Earnings in 3-Year Interval by Percentile: 2006 to 2009

Percentile	2006	2009	Numeric Change	Percent Change
5th	\$1,120	\$1,570	\$450	40.2
10th	\$2,217	\$3,000	\$783	35.3
20th	\$4,265	\$4,848	\$583	13.7
25th	\$4,927	\$5,446	\$519	10.5
30th	\$5,506	\$5,989	\$483	8.8
40th	\$6,590	\$7,039	\$449	6.8
50th	\$7,688	\$8,188	\$500	6.5
60th	\$9,000	\$9,458	\$458	5.1
70th	\$10,607	\$11,177	\$570	5.4
75th	\$11,612	\$12,229	\$617	5.3
80th	\$12,840	\$13,500	\$660	5.1
90th	\$16,398	\$17,707	\$1,309	8.0
95th	\$20,392	\$22,615	\$2,223	10.9
99th	\$34,781	\$38,838	\$4,057	11.7
Total Jobs	166,023	143,847	-22,176	-13.4

Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed.

Note³: The unit of analysis is a job.

On the following page, Table 6 displays the quarterly earnings percentile changes for manufacturing for the 3-year period from 2009 to 2012, which includes the recent recession.

Table 6. Manufacturing Job Quarterly Earnings in 3-Year Interval by Percentile: 2009 to 2012

Percentile	2009	2012	Numeric Change	Percent Change
5th	\$1,570	\$1,458	-\$112	-7.1
10th	\$3,000	\$2,983	-\$17	-0.6
20th	\$4,848	\$5,324	\$476	9.8
25th	\$5,446	\$6,053	\$607	11.1
30th	\$5,989	\$6,719	\$730	12.2
40th	\$7,039	\$8,037	\$998	14.2
50th	\$8,188	\$9,426	\$1,238	15.1
60th	\$9,458	\$10,959	\$1,501	15.9
70th	\$11,177	\$12,940	\$1,763	15.8
75th	\$12,229	\$14,135	\$1,906	15.6
80th	\$13,500	\$15,494	\$1,994	14.8
90th	\$17,707	\$19,868	\$2,161	12.2
95th	\$22,615	\$24,879	\$2,264	10.0
99th	\$38,838	\$44,217	\$5,378	13.8
Total Jobs	143,847	151,831	7,984	5.6

Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed.

Note³: The unit of analysis is a job.

Table 6 (above) shows manufacturing's job earnings changes in the 3-year interval that includes the recent recession and recovery, years 2009 to 2012. With the exception of the 5th, 10th, 20th and 95th percentiles, most percentiles showed larger dollar amount and percent increases than they did in the 2006 to 2009 interval. However, two of the percentiles in this 3-year interval of 2009 to 2012 actually showed decreased job earnings, the 5th and the 10th percentiles.

Table 7. Manufacturing Job Quarterly Earnings in 3-Year Interval by Percentile: 2012 to 2015

Percentile	2012	2015	Numeric Change	Percent Change
5th	\$1,458	\$1,600	\$142	9.7
10th	\$2,983	\$3,227	\$244	8.2
20th	\$5,324	\$5,644	\$320	6.0
25th	\$6,053	\$6,410	\$357	5.9
30th	\$6,719	\$7,109	\$390	5.8
40th	\$8,037	\$8,394	\$357	4.4
50th	\$9,426	\$9,835	\$409	4.3
60th	\$10,959	\$11,442	\$483	4.4
70th	\$12,940	\$13,579	\$639	4.9
75th	\$14,135	\$14,915	\$780	5.5
80th	\$15,494	\$16,444	\$950	6.1
90th	\$19,868	\$21,399	\$1,531	7.7
95th	\$24,879	\$27,200	\$2,321	9.3
99th	\$44,217	\$46,730	\$2,514	5.7
Total Jobs	151,831	155,049	3,218	2.1

Note¹: Earnings are second quarter job totals, excluding Federal jobs.

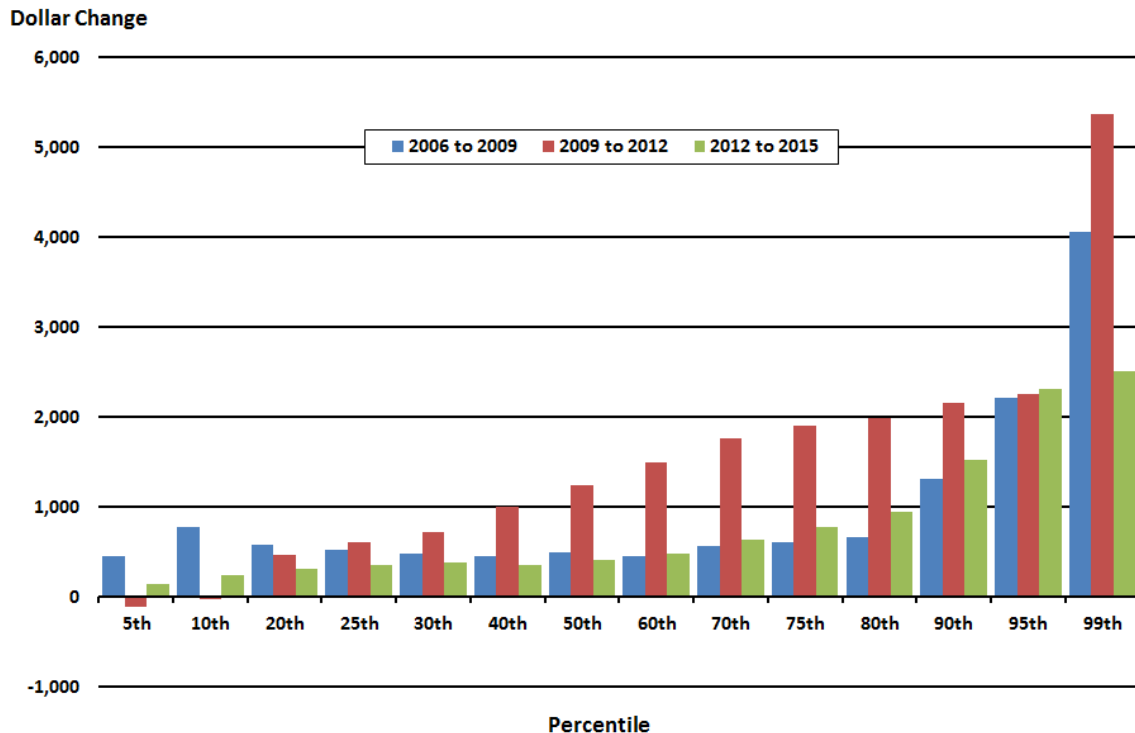
Note²: Cases where earnings are less than \$300 removed.

Note³: The unit of analysis is a job.

On the previous page, Table 7 displays the manufacturing job quarterly earnings percentile changes for the three years after the recent recession years 2012 to 2015. The 5th percentile had the largest percent change of 9.7 percent, while the 10th percentile had the second-largest percent change of 8.2 percent. Where the 5th and the 10th percentiles in the previous 3-year interval had showed a decline, all of the percentiles now showed a positive change or increased. However other than these two 5th and the 10th percentiles now showing a positive increase, the remainder of the percentiles job earnings showed less increase than they did in the just prior 3-year interval of 2009 to 2012.

Two graphs providing visual representations are displayed below and on the following page. These graphs illustrate the dollar amount and percent changes in each of the 3-year intervals, 2006 to 2015. Chart 3 (below) shows the manufacturing job earnings dollar amount changes for each of the three 3-year intervals, from 2006 to 2015, as outlined in Tables 5, 6, and 7 (consult tables for exact numbers).

Chart 3. Manufacturing Job Quarterly Earnings Percentile Dollar Change, 3-Year Intervals: 2006 to 2015



Note¹: Earnings are second quarter job totals, excluding Federal jobs.
 Note²: Cases where earnings are less than \$300 removed
 Note³: The unit of analysis is a job

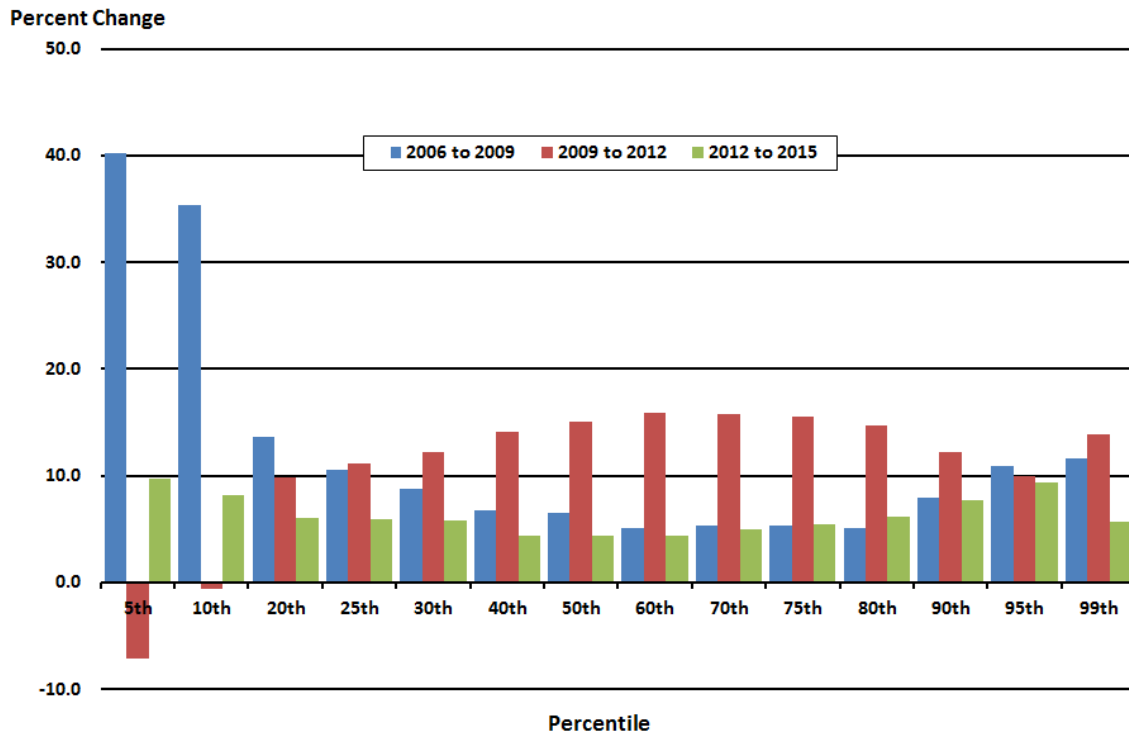
In all three of the 3-year intervals, the largest dollar amount job earnings change occurs in the higher 99th level percentile (largest), 95th (2nd largest) and 90th (3rd largest) percentile levels. The 5th, 10th and 20th percentiles had their greatest dollar amount increase in 2006 to 2009, while the remaining percentiles largest dollar amount increases occurred in the years 2009 to 2012.

On the following page, Chart 4 displays percent changes in manufacturing job earnings in 3-year intervals from 2006 to 2015. What are interesting to note about this chart is the locations in the percentile levels where the largest three percentile job earnings percent change occurs. In the 3-year interval 2006 to 2009, the largest percent change was in the lower 5th, 10th and 20th percentile levels. In the second 3-year interval 2009 to 2012 the largest percent change was in the middle percentile levels of the 60th, 70th and 75th percentile levels. In the last 3-year interval of 2012 to 2015 the largest job earnings percent change

occurred at the 5th percentile level, the second-largest at the 95th percentile level and the third-largest in the 10th percentile level.

Chart 4 shows the manufacturing job quarterly earnings percent changes for these three 3-year intervals. Of special note are the different locations for the larger job earnings percent changes in each 3-year period.

Chart 4. Manufacturing Job Quarterly Earnings Percentile Percent Change, 3-Year Intervals: 2006 to 2015



Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed

Note³: The unit of analysis is a job

Another way of comparing quarterly job earnings and earnings changes is by placing quarterly earnings dollar amounts and percent changes for the four individual years of the 3-year intervals side-by-side in a table. Table 8 and Chart 5 (both on the next page) shows quarterly earnings dollar amounts for these years, alongside the percent change in earnings between these years.

Table 8 gives the exact manufacturing job earning total amounts and Chart 5 gives a visual illustration of manufacturing job earnings total amounts for each of the four individual years occurring in the three 3-year intervals from 2006 to 2015, showing the percentile size arrangement during each interval.

Table 8. Manufacturing Job Quarterly Earnings Dollar Amounts by Percentile: 2006, 2009, 2012 & 2015

Percentile	2006	2009	2012	2015	2006-09 % Change	2009-12 % Change	2012-15 % Change
5th	\$1,120	\$1,570	\$1,458	\$1,600	40.2	-7.1	9.7
10th	\$2,217	\$3,000	\$2,983	\$3,227	35.3	-0.6	8.2
20th	\$4,265	\$4,848	\$5,324	\$5,644	13.7	9.8	6.0
25th	\$4,927	\$5,446	\$6,053	\$6,410	10.5	11.1	5.9
30th	\$5,506	\$5,989	\$6,719	\$7,109	8.8	12.2	5.8
40th	\$6,590	\$7,039	\$8,037	\$8,394	6.8	14.2	4.4
50th	\$7,688	\$8,188	\$9,426	\$9,835	6.5	15.1	4.3
60th	\$9,000	\$9,458	\$10,959	\$11,442	5.1	15.9	4.4
70th	\$10,607	\$11,177	\$12,940	\$13,579	5.4	15.8	4.9
75th	\$11,612	\$12,229	\$14,135	\$14,915	5.3	15.6	5.5
80th	\$12,840	\$13,500	\$15,494	\$16,444	5.1	14.8	6.1
90th	\$16,398	\$17,707	\$19,868	\$21,399	8.0	12.2	7.7
95th	\$20,392	\$22,615	\$24,879	\$27,200	10.9	10.0	9.3
99th	\$34,781	\$38,838	\$44,217	\$46,730	11.7	13.8	5.7
Total Jobs	166,023	143,847	151,831	155,049	-13.4	5.6	2.1

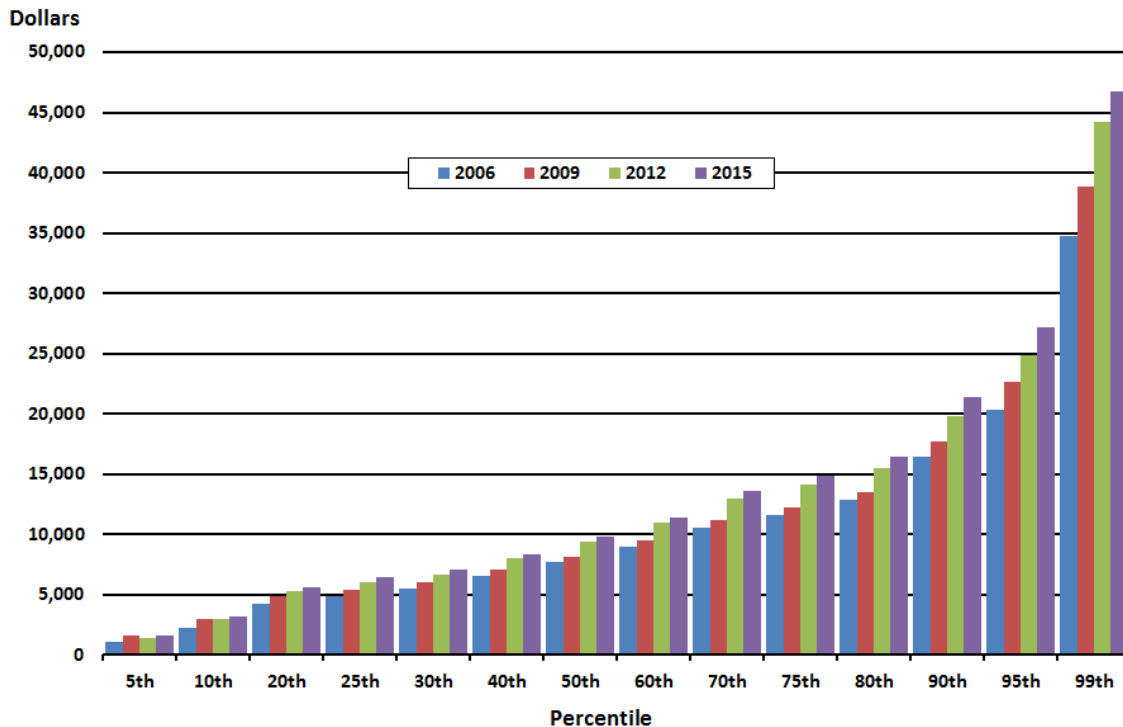
Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed.

Note³: The unit of analysis is a job.

Chart 5 summarizes Table 8 data for manufacturing dollar amounts, while also providing an enlightening illustration of the quarterly earnings dollar amounts and their changes in each 3-year period.

Chart 5. Manufacturing Job Quarterly Earnings Dollar Amounts by Percentile: 2006, 2009, 2012 & 2015



IV. Manufacturing Percentile Quarterly Job Earnings, 10-Year Changes: 2005 to 2015

A fourth way in that all manufacturing percentile earnings and earnings changes can be examined is by quarterly job earnings dollar amounts and percent changes for the 10-year interval from 2005 to 2015.

Table 9. Manufacturing Job Quarterly Earnings in 10-Year Interval by Percentile: 2005 to 2015

Percentile	2005	2015	Numeric Change	Percent Change
5th	\$1,189	\$1,600	\$411	34.6
10th	\$2,250	\$3,227	\$977	43.4
20th	\$4,262	\$5,644	\$1,382	32.4
25th	\$4,857	\$6,410	\$1,553	32.0
30th	\$5,387	\$7,109	\$1,722	32.0
40th	\$6,408	\$8,394	\$1,986	31.0
50th	\$7,500	\$9,835	\$2,335	31.1
60th	\$8,754	\$11,442	\$2,688	30.7
70th	\$10,275	\$13,579	\$3,304	32.2
75th	\$11,253	\$14,915	\$3,662	32.5
80th	\$12,403	\$16,444	\$4,041	32.6
90th	\$15,876	\$21,399	\$5,523	34.8
95th	\$19,667	\$27,200	\$7,533	38.3
99th	\$32,400	\$46,730	\$14,330	44.2
Total Jobs	160,058	155,049	-5,009	-3.1

Note¹: Earnings are second quarter job totals, excluding Federal jobs.

Note²: Cases where earnings are less than \$300 removed

Note³: The unit of analysis is a job.

Table 9 shown above shows both the 10-year quarterly earnings dollar amounts and percent changes for manufacturing. Chart 6 (on the next page) illustrates the dollar amount change for this interval.

Table 9 displays that between 2005 and 2015, the dollar amounts for manufacturing job earnings increased for all percentile levels, with dollar amount increasingly larger as the percentile level increases. Also on the previous page, Chart 6 displays a graphic illustration of this percentile level and dollar amount of manufacturing job earnings relationship.

Table 9 and in Chart 7 (on the next page), displaying the percent change for this ten-year period did not show a steady increase from lower levels to higher levels. The 20th through the 80th percentiles were relatively flat in percent amounts, varying only 1.9 percentage points. The 5th and the 90th percentiles percent values were slightly higher, with 34.6 percent and 34.8 percent, respectively. The 99th percentile level has the largest percent gain of 44.2 percent and the 10th percentile level has the second-largest 44.3 percent spike percent gain, followed by the third-largest percent gain of 38.3 percent at the 95th percentile level.

Chart 6. Manufacturing Job Quarterly Earnings Percentile Dollar Change: 2005 to 2015

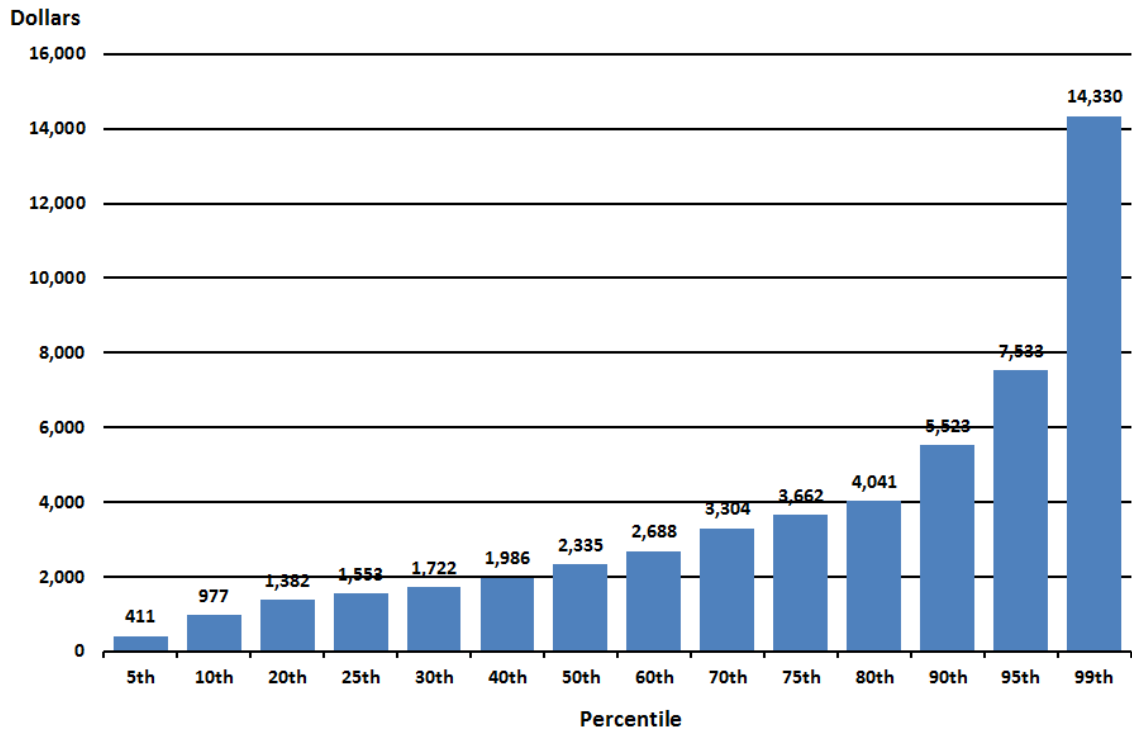
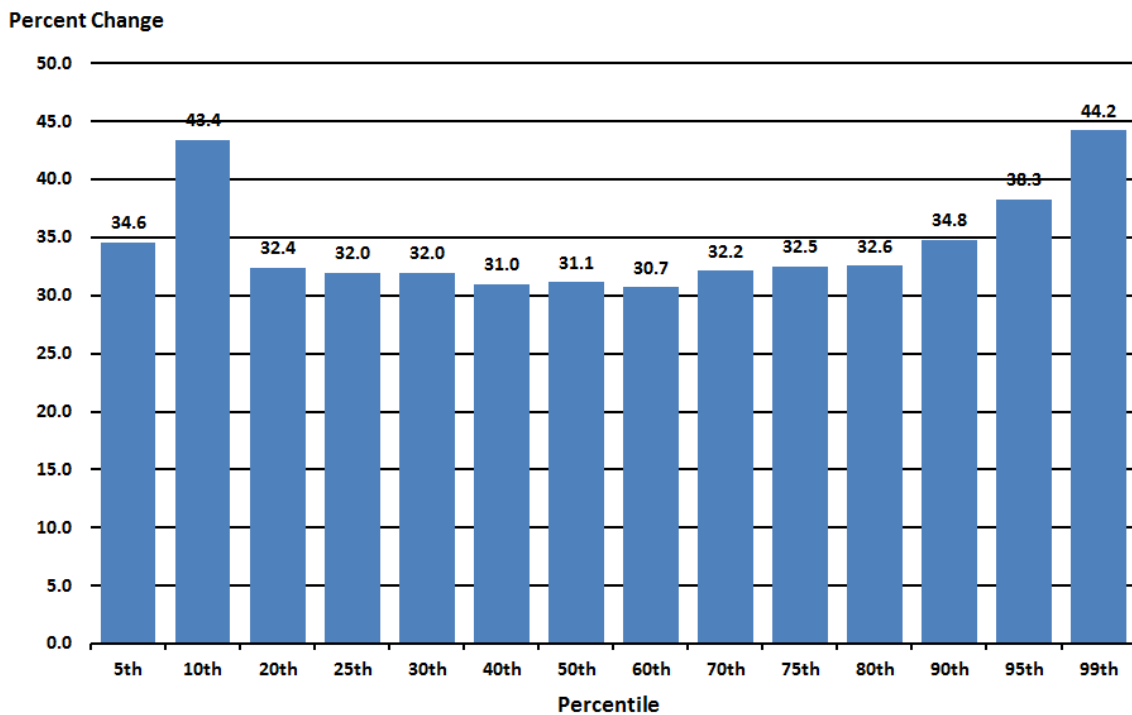


Chart 7. Manufacturing Job Quarterly Earnings Percentile Percent Change: 2005 to 2015



V. Summary and Conclusions

In summary, the 1-year interval analyses of manufacturing job earnings percentile dollar amounts and percent earnings amount changes for intervals 2011 to 2015 reveal an uneven percentile change from interval to interval. In the interval 2011 to 2012, the earnings dollar amount change for thirteen of the fourteen percentiles was positive, range -\$3 to \$458. The interval 2012 to 2013 showed the largest dollar amount increases, all positive, ranging from \$110 to \$2,731. The interval 2013 to 2014, showed dollar amount job earnings increases similar in size to what occurred in 2011 to 2012, only with two of the percentiles showing decreases. The interval 2014 to 2015 displays the largest number of percentile dollar amount job earnings decreases, with seven of the fourteen decreasing. In the 2012 to 2013 and 2014 to 2015 intervals the lower level 5th and the 10th percentiles were among the larger percent increase percentiles. However in the 2013 to 2014 interval, the 5th and the 10th percentiles had large percent decreases.

The 3-year interval analyses of manufacturing dollar amount and percent amount job earnings changes from year 2006 to 2015 determined different and unequal changes for lower, middle and higher regions of the fourteen percentile range. The largest increases in dollar amounts for each of the three 3-year intervals occurred in the upper 90th to 99th percentiles. However the largest of all percent increases occurred in the 5th and 10th percentiles, in years 2006 to 2009. In the 2009 to 2012 interval the larger percent increases were in the mid-level 40th through 80th percentiles, while the lower level 5th and 10th percentiles had decreases. Finally in the 2012 to 2015 interval the lower level 5th and 10th percentiles were 1st and 3rd (respectively) in percent increase, while the higher level 95th percentile was 2nd in size of job earnings percent increase.

An examination of the manufacturing job earnings total dollar amounts of the key four years 2006, 2009, 2012 and 2015 in each of the three 3-year intervals determined that all percentiles increased steadily from 2006 to 2015; with the exception of the 5th and 10th percentiles dollar amounts decreasing in the 3-year interval 2009 to 2012. With this exception of these two percentiles dollar amounts decreasing, the percentile amounts becoming larger as the percentile level increased and did so over years 2006 to 2015, as shown in Table 8 and Chart 5 (on page 8).

The analysis of the 10-year interval of year 2005 to 2015 of manufacturing job earnings percentile dollar amount change and percent change determined two key findings, as shown in Table 9 (on page 10) and in Chart 6 and Chart 7 (on page 11). The first finding determined that the dollar amount change was larger with increasingly higher percentile levels. The second finding established that the larger job earnings percentile percent changes were in the higher level 90th, 95th and 99th levels and in the lower 5th and 10th percentile levels.

The four central findings of this investigation of manufacturing job earnings percentile changes may be abridged and enumerated as following. First, in the 1-year analysis of the five most recent years the best year for manufacturing job earnings increases for most percentiles was during years 2012 to 2013, while the worst year for these increases was year 2014 to 2015. Second, examining the data in 3-year intervals determined that the lower level percentiles fared the best during years 2006 to 2009, the middle level percentiles had the most increase in 2009 to 2012, while the lower two percentiles and the upper level 95th percentile experienced the three larger job earnings increase in years 2012 to 2015. Third, the percentile changes examined by total amounts for the four years of 2006, 2009, 2012 and 2015 found that the percentiles increased in amount with increased percentile level. With the exception of a brief dip in totals for the 5th and 10th percentiles in year 2012, the percentiles also increased steadily from 2006 to 2015. Finally, over the 10-year period 2005 to 2015, the larger job earnings percentile percent increases were in the higher level 90th, 95th and 99th levels and in the lower 5th and 10th percentile levels.