

Auto Industry Labor Costs in Perspective

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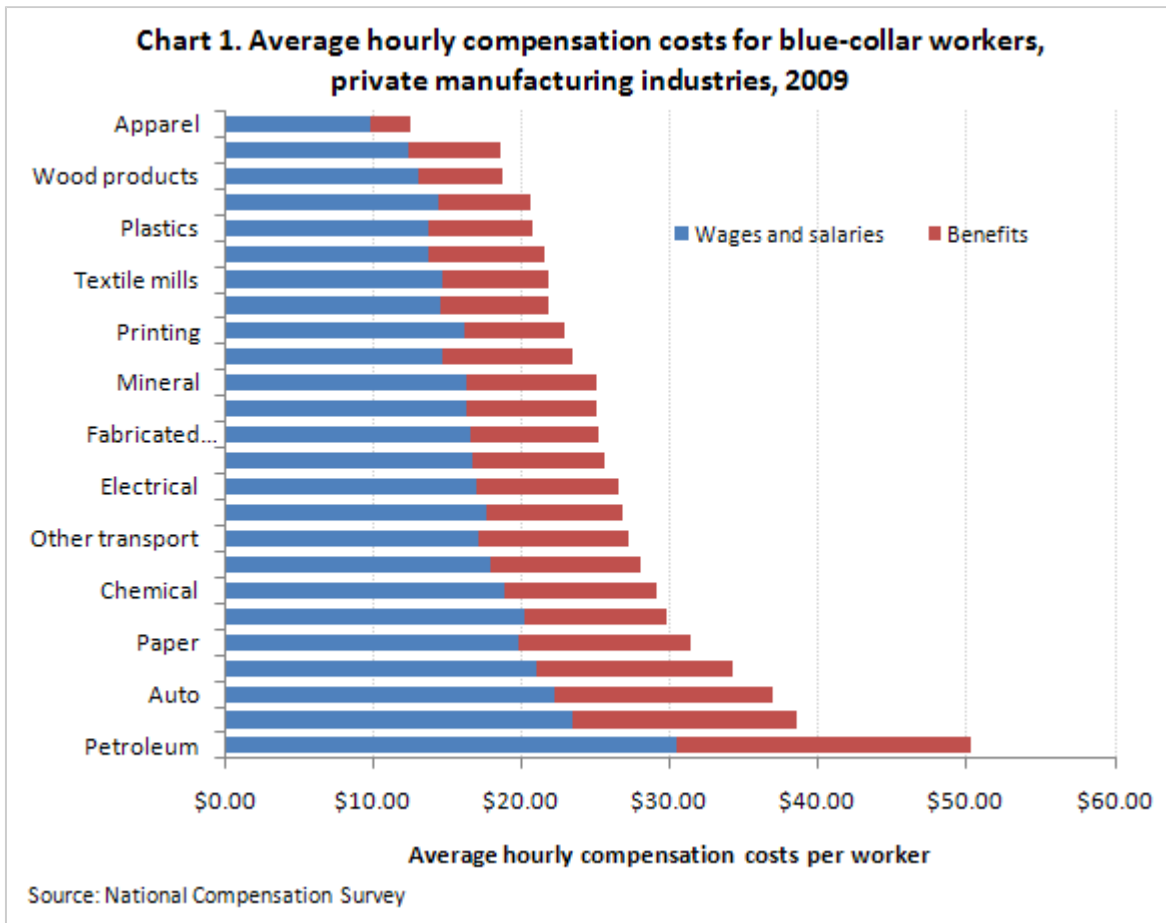
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Compensation costs for workers in the U.S. automotive industry became a widely discussed topic in the final months of 2008. Data from the 2009 National Compensation Survey put these compensation costs into perspective.

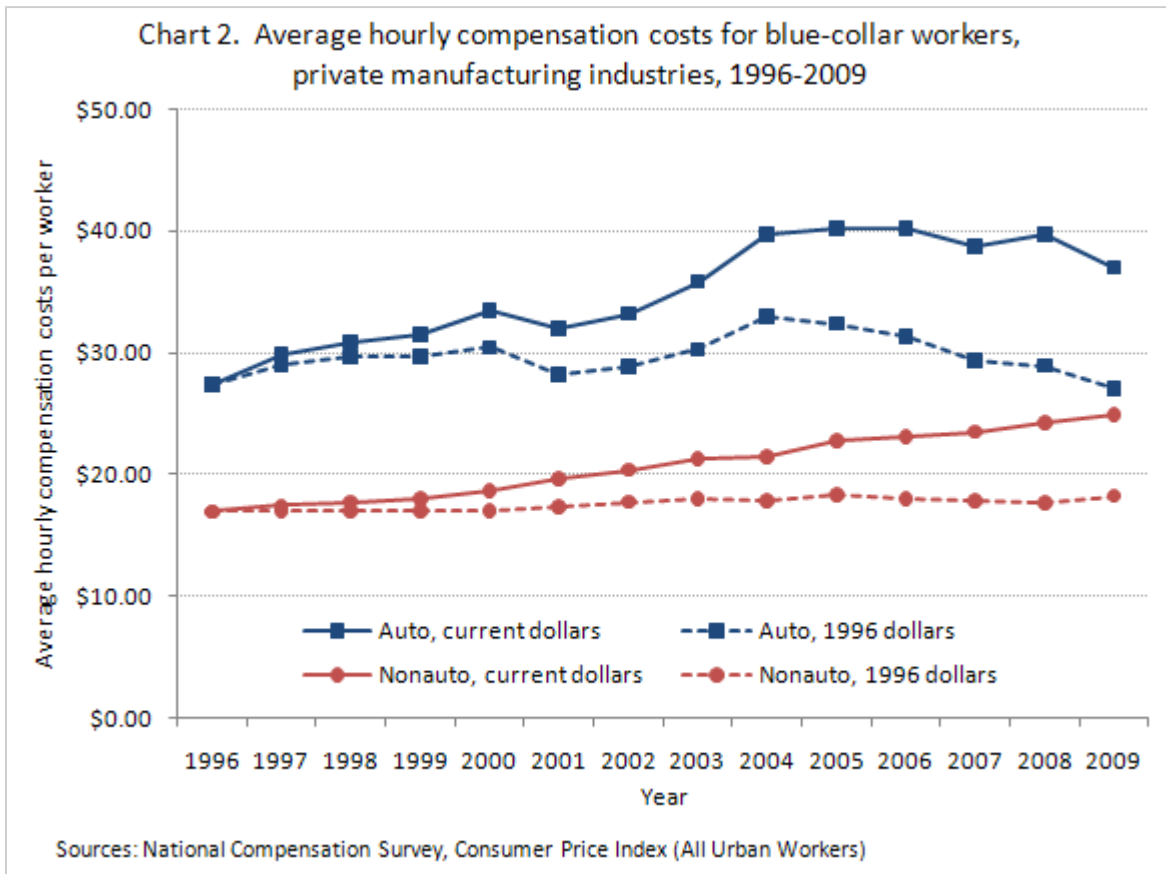
The auto industry occupies a special place in American folklore.¹ The phrase “Americas love affair with the automobile” appears in the American Heritage dictionary, as a usage example under the entry for “love affair.”² An Internet search for the phrase returns hundreds of thousands of matches.³ The College Boards study guide for the Advanced Placement exam in U.S. History dedicates an entire chapter to “The Automobile in American Life.”⁴ And the idea that “Whats good for General Motors is good for the country”—although misquoted—still resonates with many Americans.⁵

Thus, it is no surprise that the auto industry receives a great deal of scrutiny in the popular press. This scrutiny was particularly intense in the final months of 2008,⁶ when a controversial assistance package of \$13.4 billion from the U.S. Treasury provoked a debate on whether auto industry compensation costs were excessive. Data from the BLS [National Compensation Survey \(NCS\)](#) for 2009 allow auto industry compensation costs to be viewed in relation to those in other manufacturing industries.

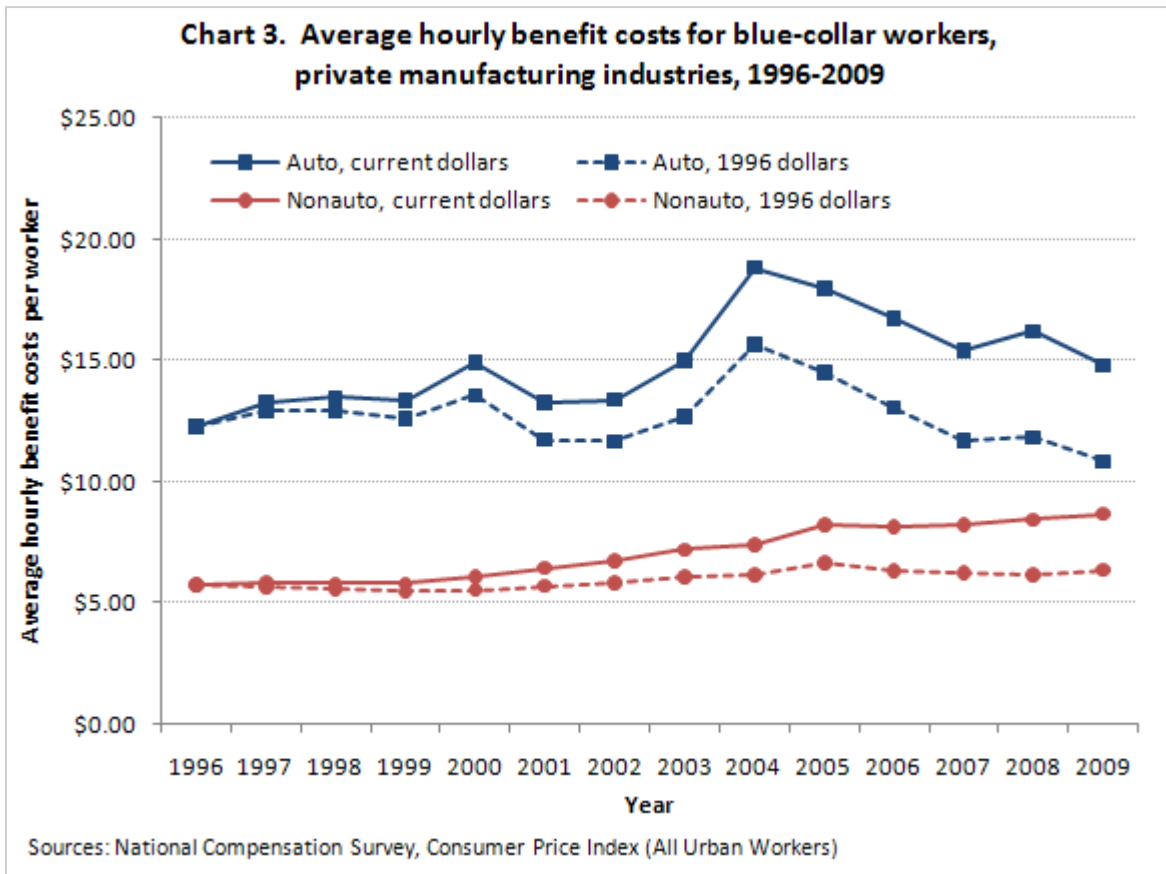
The perception that auto industry compensation costs for blue-collar workers⁷ exceed those of many other manufacturing industries is supported by data from the NCS data series on Employer Costs for Employee Compensation (ECEC). As shown in chart 1, the ECEC indicates that average hourly compensation costs⁸ for auto workers in private industry were among the highest of any manufacturing industry in 2009.⁹



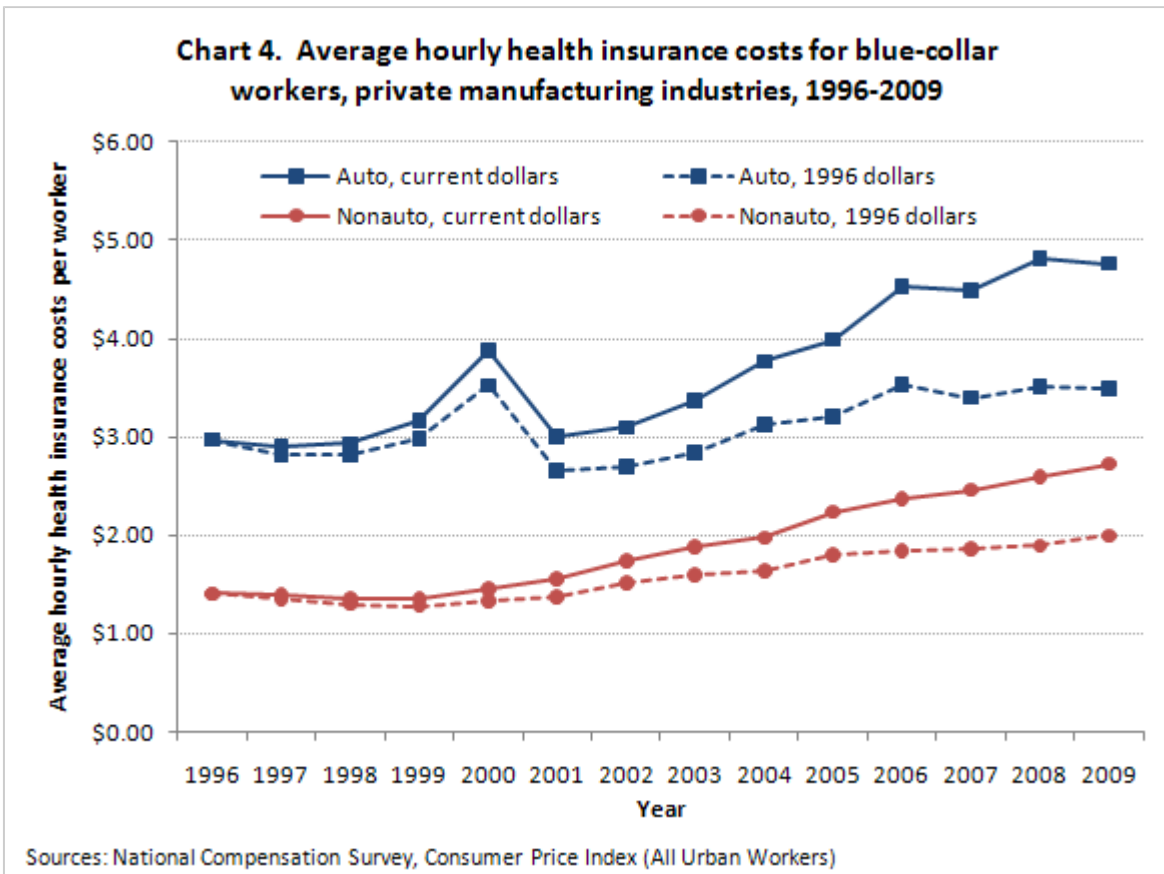
This is true despite the trends of recent years, in which nominal auto industry compensation costs have held steady or declined (except from 2007 to 2008), while compensation costs in other manufacturing industries have continued to climb. Chart 2 shows that, in real terms, private auto industry compensation costs have been falling since 2004.¹⁰



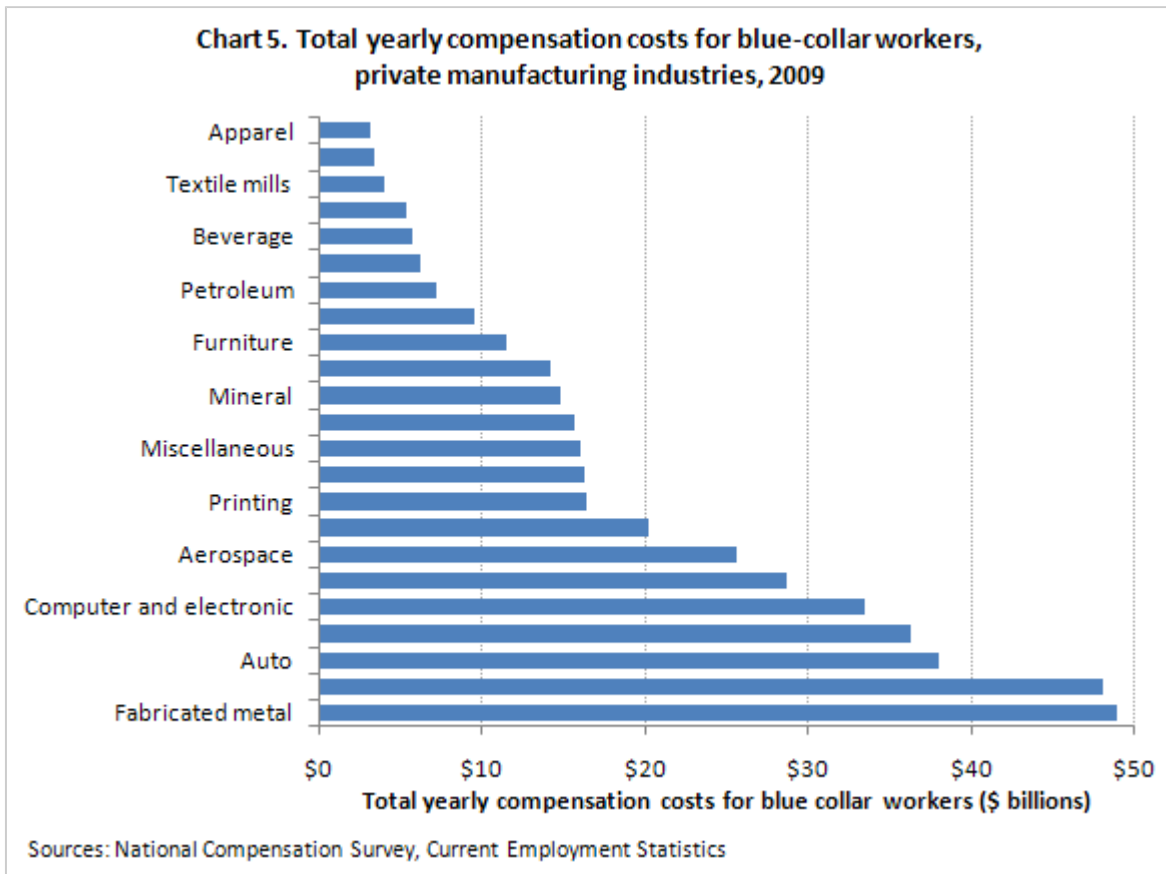
Compensation costs can be broken into two categories: wages and benefits. In the auto industry, upward pressure on wage costs has been offset by downward pressure on benefit costs. In both real and nominal terms, benefit costs have been falling for auto manufacturers in recent years (except from 2007 to 2008), while benefit costs have been steady for other private industry manufacturers. (See chart 3.)



But while employers in the auto industry are spending less per hour on benefits overall, they are still spending more per hour on health insurance (as are their nonauto manufacturing counterparts), as can be seen in chart 4. Health insurance is the single largest benefit cost to employers in private manufacturing industries.¹¹



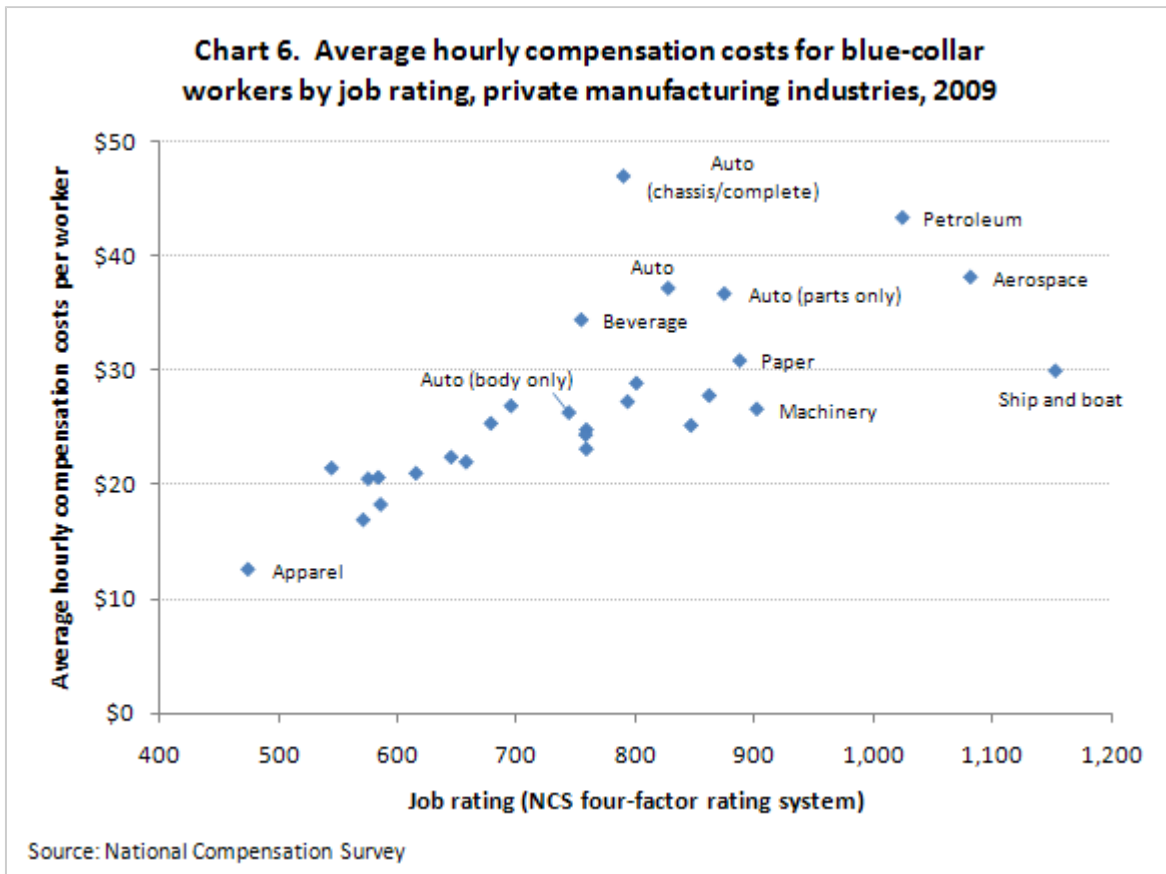
Despite these declines in compensation costs in recent years, the auto industry remains an important component of U.S. manufacturing because of its combination of relatively high compensation costs (compared with other manufacturing industries) and a relatively large workforce. One measurement of an industry's importance to the economy is its total yearly compensation costs, defined as the number of production workers in the industry, times the average number of hours worked by production workers each week,¹² times 50 weeks per year,¹³ times the average hourly compensation cost per blue-collar worker. (In general, the higher an industry's yearly compensation costs, the more households rely on the wages and benefits paid by that industry.) By this measure, the auto industry is still one of America's most important manufacturing industries.¹⁴ (See chart 5.)



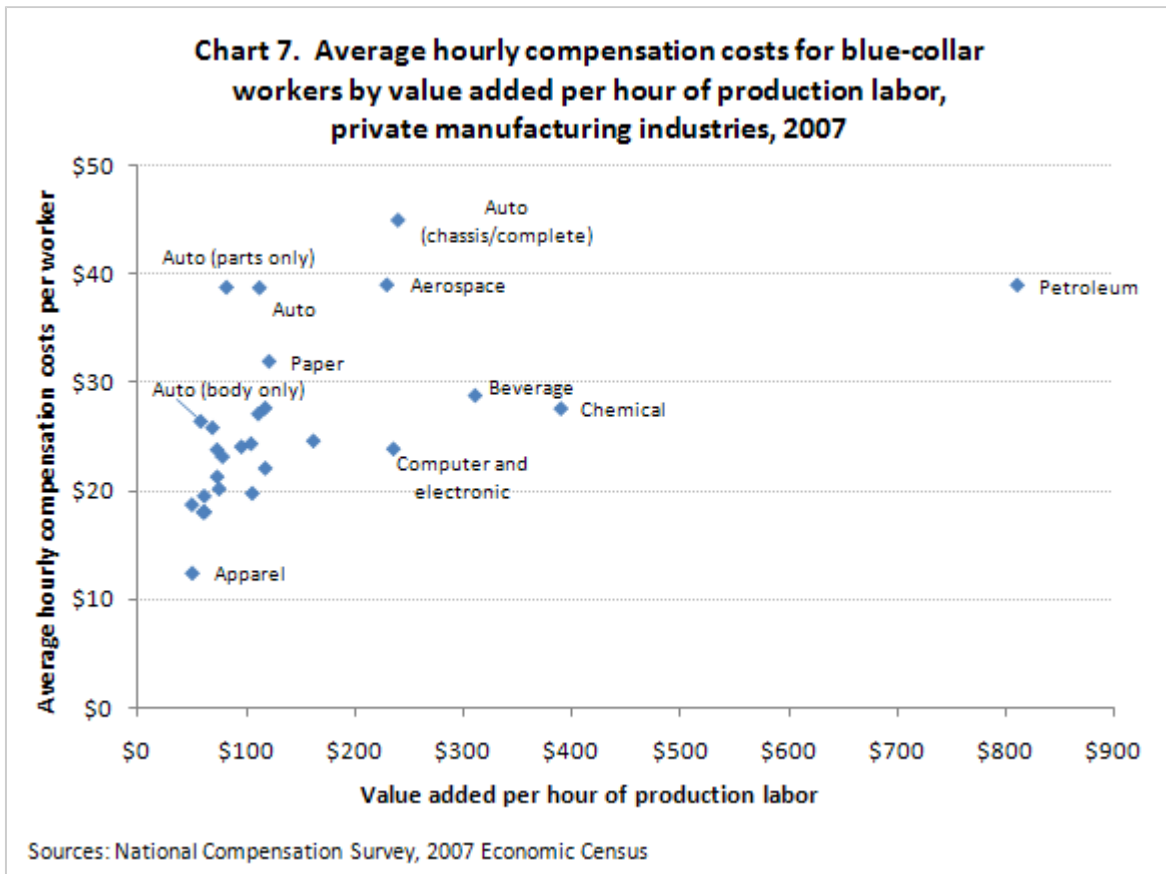
As stated previously, hourly compensation costs in the auto industry are higher than those in most other private manufacturing industries. However, at least some of this premium may stem from industry-specific factors. For example, if auto industry workers perform tasks that are considerably more difficult than those performed by blue-collar workers in other industries, higher compensation costs might be expected.

When BLS economists collect wage and benefit data from an establishment for the NCS, they also collect information about (1) the level of knowledge required by its workers, (2) the degree of complexity of its occupations, (3) the amount of social interaction required, and (4) the physical environment in which duties are performed. These four factors (entitled “knowledge,” “job controls and complexity,” “contacts,” and “physical environment,” respectively) are combined into a single job rating—a value between 190 and 4,180, with higher values connoting higher degrees of difficulty, knowledge, responsibility, or complexity.¹⁵

Plotting each industry’s average hourly compensation costs against its average job rating for blue-collar workers reveals a positive correlation: among private manufacturing industries, higher job ratings correspond to higher compensation costs. As shown in chart 6, compensation in the auto industry is consistent with this positive correlation.¹⁶ Workers in the auto chassis subindustry receive above-average compensation even after adjusting for job rating.

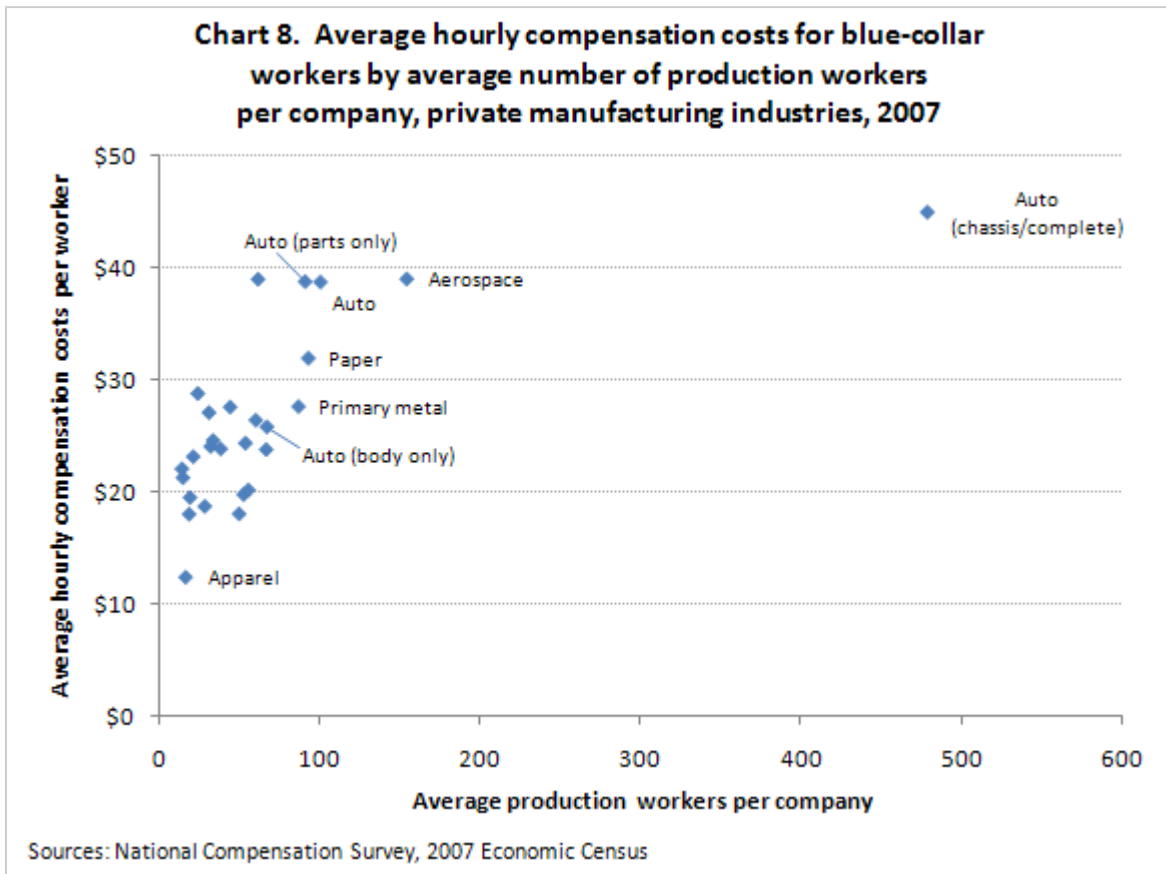


Combining the National Compensation Surveys findings with data from the U.S. Census Bureau provides additional insights. For example, the 2007 Economic Census calculates the value added by production workers during the production process.¹⁷ Compared with other manufacturing industries, compensation in the auto industry is high relative to value added.¹⁸ (See chart 7.) Or, put another way, other manufacturing industries show higher value added per unit of worker compensation.



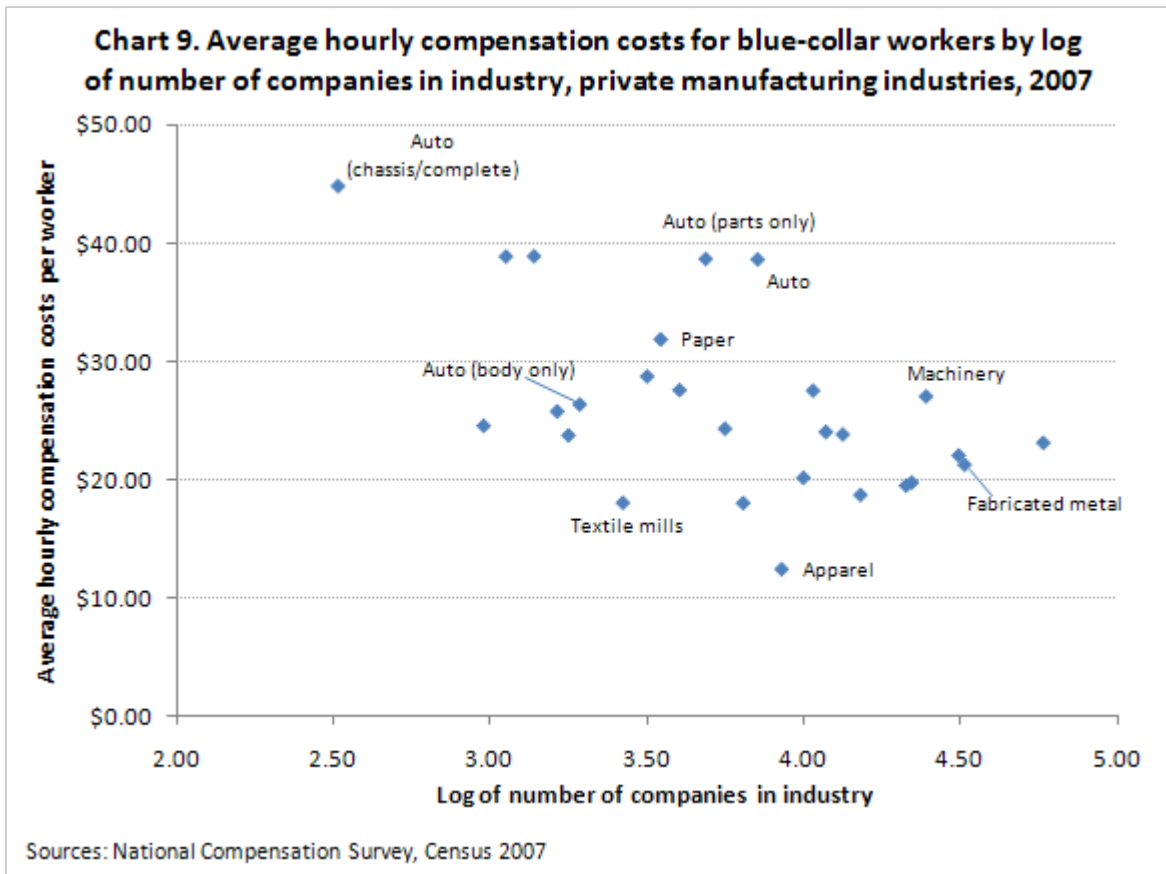
Another potential explanatory variable of compensation costs is company size.¹⁹ In general, industries with larger average production workforces per company have higher per-worker compensation costs than industries with smaller average production workforces per company.

By this measure, the auto parts and body subindustries are in line with other private manufacturing industries.²⁰ (See chart 8.) The chassis subindustry is an extreme case, with the average company having many more production workers than the average company in any other manufacturing industry. As a whole, the auto-industry compensation premium is consistent with the overall positive correlation between company size and average compensation.



Finally, an industry's compensation costs may be influenced by the number of companies in the industry. For example, economic theory suggests that industries with a small number of companies might possess some monopsony power—a condition with a small number of buyers and many sellers—with respect to labor, and thus incur lower compensation costs. On the other hand, labor unions might be better able to organize and thus exert more power, in exactly the same industries, thereby raising compensation costs. Higher compensation costs might also be expected in industries that have some degree of monopoly power and thus can afford to share “monopoly rents” with workers. One way to explore these questions is to examine the relationship between an industry's compensation costs and the number of companies in that industry.²¹

Plotting average hourly compensation against the log²² of the number of companies in each industry reveals that if there is any relationship at all, it is that compensation levels decline as the number of companies grows.²³ (See chart 9.) Given this relationship, the auto parts subindustry exhibits higher-than-expected levels of compensation, after adjusting for the number of companies in that subindustry.



In sum, while it is true that blue-collar workers in the auto industry receive higher compensation than blue-collar workers in other manufacturing industries, this premium may be at least partly explained by three factors: (1) the relative complexity of jobs performed by auto workers; (2) the ratio of workers to employers in the auto industry; and (3) the number of employers in the auto industry. For workers in the auto body and auto parts subindustries, average hourly compensation is consistent with other manufacturing industries in all three areas. For workers in the auto chassis subindustry, average hourly compensation is consistent in one area—job rating. For auto workers as a whole, hourly compensation costs are consistent with those of other private sector manufacturing industries, after adjusting for factors such as job complexity and industry structure.

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Notes

1 In this article, the “auto industry” is defined as industries 3361, 3362, and 3363 of the North American Industry Classification System (NAICS), 2002. This includes automobiles as well as light and heavy trucks (part of 3361) and trailers and motor homes (part of 3362). See <http://www.bls.gov/bls/naics.htm> for more information.

2 See “love affair” in *The American Heritage Dictionary of the English Language*, 4th ed., (New York: Houghton Mifflin, 2004), Dictionary.com, http://dictionary.reference.com/browse/love_affair.

3 A Google search for the phrase “America’s love affair with the automobile” yielded about 468,000 results.

4 See *Lesson Plans for AP U.S. History*, chapter 9, “The Automobile in American Life,” http://apcentral.collegeboard.com/apc/members/courses/teachers_corner/22545.html.

5 The origin of this misquoted statement is the 1953 Senate confirmation hearing of General Motors president Charles Erwin Wilson, who had been nominated by President Eisenhower for Secretary of Defense. Although press accounts quoted Wilson as having said, “Whats good for General Motors is good for the country,” his actual words were “For years I thought that what was good for our country was good for General Motors, and vice versa.” See <http://www.time.com/time/magazine/article/0,9171,827790,00.html> for more information.

6 Google Trends reveals a noticeable spike in both Internet searches and news coverage of the auto industry in the last quarter of 2008. See <http://www.google.com/trends?q=auto+industry&ctab=0&geo=all&date=all&sort=0>.

7 For the purposes of this article, blue-collar workers are those whose occupations have two-digit Standard Occupational Classification (2010) values between 33 and 39 or 45 and 53. Examples of such occupations are protective services officers, food preparers, groundskeepers, construction workers, installers, assemblers, and metal workers. See http://www.bls.gov/soc/2000/soc_majo.htm for more information.

8 Compensation costs include wages and salaries plus employer-paid benefits, including legally required benefits. See <http://www.bls.gov/ncs/ect> for more information about employer costs captured by the ECEC.

9 In this article, manufacturing industries are defined as those belonging to the manufacturing sector as defined by the 2002 North American Industry Classification System (NAICS). Industries generally correspond to three-digit NAICS subsectors. Exceptions are NAICS 312, Beverage and Tobacco Product Manufacturing (only the beverage [3121] industries are included), NAICS 326, Plastics and Rubber Products Manufacturing (broken into separate plastics [3261] and rubber [3262] industries), and NAICS 336, Transportation Equipment Manufacturing (broken into auto [3361—3363], aerospace [3364], railroad [3365], ship and boat [3366], and “other transport” [3369] industries, which includes motorcycles and all-terrain vehicles). The “Miscellaneous” category refers to NAICS 339, Miscellaneous Manufacturing. When it was deemed useful, the author further subdivided the auto industry into auto (chassis/complete) [3361], auto (body only) [3362], and auto (parts only) [3363].

10 Figures are from March of each year. Values for 1996 dollars are calculated by dividing current dollar values by the CPI-U deflator for the appropriate year and multiplying by 100. Note that because standard errors are not available, intervals of statistical significance cannot be estimated.

11 Among all employers in private manufacturing industries, health insurance costs averaged \$2.87 per blue-collar worker per hour in March 2009. Social security (old-age, survivors, and disability insurance) was the next highest cost (\$1.20 per blue-collar worker per hour), followed by paid vacation leave (\$0.90 per blue-collar worker per hour).

12 Production workers and average hours worked per week per production worker are available by industry from the Current Employment Statistics (CES) survey (<http://www.bls.gov/ces>). Production workers are those workers “engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping, trucking, hauling, maintenance, repair, janitorial, guard services, product development,” as well as “other services closely related with the above production processes.” This definition is comparable, though not identical, to that of “blue collar” used for compensation in the NCS.

13 By convention, the number of weeks used is 50, instead of 52. The ordinal rankings would be unchanged if 52 were used instead.

14 Current Employment Statistics data are not available for the railroad and other transport industries, so these industries do not appear in the chart.

15 See *National Compensation Survey: Guide for Evaluating Your Firms Jobs and Pay* for more information on the four-factor job rating system, <http://www.bls.gov/ncs/ocs/sp/ncbr0004.pdf>.

16 For presentation purposes, only selected industries are labeled.

17 The most recent year for which data on value added by manufacturing industries are available is 2007. For more information, see the 2007 Economic Census page on U.S. Census Bureau website, <http://www.census.gov/econ/census07/>.

18 For presentation purposes, only selected industries are labeled.

19 Company size is not to be confused with establishment size. A single company may have multiple establishments. Because the National Compensation Survey is an establishment-based survey, data on company size is taken from the 2007 Economic Census instead.

20 For presentation purposes, only selected industries are labeled.

21 An even better basis for comparison would be the industrys “concentration ratio”—the degree to which a small number of firms dominate the industry. However, concentration ratios for the manufacturing sector for 2007 are not yet available; they are scheduled to be published by July 2011. See <http://www.census.gov/econ/concentration.html> for more information.

22 The relationship between average hourly compensation and the number of companies is more clearly revealed by using base-10 logarithms. To the extent that a linear relationship exists, the relationship is between average hourly compensation and the log of the number of companies, rather than simply the number of companies.

23 For presentation purposes, only selected industries are labeled.

Data for Chart 1. Average hourly compensation costs for blue-collar workers, private manufacturing industries, 2009

Sector	Compensation	Wages	Benefits	Health
All manufacturing	\$25.76	\$16.67	\$9.09	\$2.87
Auto	\$36.98	\$22.19	\$14.79	\$4.76
Nonauto	\$24.92	\$16.26	\$8.66	\$2.73
Petroleum	\$50.29	\$30.42	\$19.87	\$4.39
Aerospace	\$38.55	\$23.48	\$15.07	\$4.03
Auto	\$36.98	\$22.19	\$14.79	\$4.76
Beverage	\$34.18	\$21.02	\$13.16	\$3.76
Paper	\$31.38	\$19.76	\$11.62	\$3.61
Ship and boat	\$29.72	\$20.17	\$9.54	\$2.53
Chemical	\$29.06	\$18.83	\$10.23	\$2.78
Primary metal	\$28.04	\$17.93	\$10.11	\$3.08
Other transport	\$27.21	\$17.17	\$10.04	\$2.96
Machinery	\$26.78	\$17.62	\$9.16	\$3.04
Electrical	\$26.58	\$16.96	\$9.61	\$2.99
Rubber	\$25.65	\$16.75	\$8.91	\$3.07
Fabricated metal	\$25.23	\$16.60	\$8.63	\$2.91
Computer and Electronic	\$25.12	\$16.33	\$8.80	\$2.75
Mineral	\$25.05	\$16.29	\$8.76	\$2.72
Railroad	\$23.40	\$14.67	\$8.73	\$2.63
Printing	\$22.90	\$16.14	\$6.76	\$1.89
Miscellaneous	\$21.84	\$14.55	\$7.29	\$2.49
Textile mills	\$21.81	\$14.62	\$7.19	\$2.59
Food	\$21.57	\$13.78	\$7.78	\$2.60
Plastics	\$20.70	\$13.67	\$7.03	\$2.40
Furniture	\$20.66	\$14.47	\$6.19	\$2.11
Wood products	\$18.71	\$13.02	\$5.68	\$1.75
Textile products	\$18.61	\$12.37	\$6.24	\$2.02
Apparel	\$12.55	\$9.84	\$2.71	\$0.53

Data for Chart 2. Average hourly compensation costs for blue-collar workers in private manufacturing industries

Year	Current dollars		1996 dollars	
	Auto industry	Nonauto industry	Auto industry	Nonauto industry
1996	\$27.40	\$16.94	\$27.40	\$16.94
1997	\$29.85	\$17.44	\$29.05	\$16.97
1998	\$30.90	\$17.76	\$29.67	\$17.04
1999	\$31.46	\$18.02	\$29.69	\$17.00
2000	\$33.45	\$18.68	\$30.42	\$16.99
2001	\$31.93	\$19.66	\$28.21	\$17.37
2002	\$33.20	\$20.37	\$28.91	\$17.74
2003	\$35.82	\$21.28	\$30.27	\$17.99
2004	\$39.68	\$21.47	\$32.97	\$17.84

Year	Current dollars		1996 dollars	
	Auto industry	Nonauto industry	Auto industry	Nonauto industry
2005	\$40.18	\$22.73	\$32.37	\$18.31
2006	\$40.15	\$23.07	\$31.29	\$17.98
2007	\$38.68	\$23.50	\$29.32	\$17.82
2008	\$39.68	\$24.21	\$28.93	\$17.65
2009	\$36.98	\$24.92	\$27.07	\$18.24

Data for Chart 3. Average hourly benefit costs for blue-collar workers, private manufacturing industries, 1996-2009

Year	Current dollars		1996 dollars	
	Auto industry	Nonauto industry	Auto industry	Nonauto industry
1996	\$12.29	\$5.72	\$12.29	\$5.72
1997	\$13.25	\$5.82	\$12.89	\$5.66
1998	\$13.46	\$5.79	\$12.92	\$5.56
1999	\$13.32	\$5.78	\$12.57	\$5.45
2000	\$14.89	\$6.08	\$13.55	\$5.53
2001	\$13.26	\$6.44	\$11.71	\$5.69
2002	\$13.38	\$6.70	\$11.65	\$5.84
2003	\$14.98	\$7.18	\$12.67	\$6.07
2004	\$18.82	\$7.40	\$15.64	\$6.15
2005	\$17.98	\$8.22	\$14.49	\$6.62
2006	\$16.74	\$8.13	\$13.04	\$6.33
2007	\$15.38	\$8.19	\$11.66	\$6.21
2008	\$16.20	\$8.42	\$11.81	\$6.14
2009	\$14.79	\$8.66	\$10.83	\$6.34

Data for Chart 4. Average hourly health insurance costs for blue-collar workers, private manufacturing industries, 1996-2009

Year	Current dollars		1996 dollars	
	Auto industry	Nonauto industry	Auto industry	Nonauto industry
1996	\$2.97	\$1.40	\$2.97	\$1.40
1997	\$2.90	\$1.39	\$2.82	\$1.35
1998	\$2.93	\$1.35	\$2.82	\$1.30
1999	\$3.17	\$1.36	\$2.99	\$1.28
2000	\$3.87	\$1.46	\$3.52	\$1.33
2001	\$3.01	\$1.55	\$2.66	\$1.37
2002	\$3.10	\$1.74	\$2.70	\$1.51
2003	\$3.37	\$1.89	\$2.85	\$1.59
2004	\$3.77	\$1.98	\$3.13	\$1.64
2005	\$3.99	\$2.24	\$3.21	\$1.80
2006	\$4.54	\$2.37	\$3.54	\$1.85
2007	\$4.48	\$2.46	\$3.40	\$1.87
2008	\$4.82	\$2.60	\$3.51	\$1.90

Year	Current dollars		1996 dollars	
	Auto industry	Nonauto industry	Auto industry	Nonauto industry
2009	\$4.76	\$2.73	\$3.49	\$2.00

Data for Chart 5. Total yearly compensation costs for blue-collar workers, private manufacturing industries, 2009

Sector	Total production worker costs per year (\$billions)
Fabricated metal	\$48.95
Food	\$48.08
Auto	\$37.96
Machinery	\$36.25
Computer and electronic	\$33.51
Chemical	\$28.73
Aerospace	\$25.56
Paper	\$20.17
Printing	\$16.39
Primary metal	\$16.35
Miscellaneous	\$16.05
Plastics	\$15.62
Mineral	\$14.86
Electrical	\$14.15
Furniture	\$11.53
Wood products	\$9.53
Petroleum	\$7.18
Ship and boat	\$6.18
Beverage	\$5.71
Rubber	\$5.32
Textile mills	\$4.00
Textile products	\$3.42
Apparel	\$3.19

Data for Chart 6. Average hourly compensation costs for blue-collar workers by job rating, private manufacturing industries, 2009

Sector	Points	Compensation
Food	545.2	\$21.40
Beverage	754.7	\$34.38
Textile mills	616.0	\$20.95
Textile products	571.7	\$16.87
Apparel	475.2	\$12.55
Wood products	586.4	\$18.21
Paper	887.7	\$30.80
Printing	758.9	\$23.08
Petroleum	1024.1	\$43.31
Chemical	800.9	\$28.83

Sector	Points	Compensation
Plastics	575.9	\$20.47
Rubber	678.9	\$25.32
Mineral	758.9	\$24.76
Primary metal	862.0	\$27.75
Fabricated metal	846.7	\$25.14
Machinery	901.8	\$26.57
Computer and Electronic	758.4	\$24.32
Electrical	695.7	\$26.85
Auto	827.6	\$37.14
Auto (chassis only)	790.0	\$46.94
Auto (body only)	744.3	\$26.26
Auto (parts only)	874.6	\$36.66
Aerospace	1081.1	\$38.12
Railroad	645.6	\$22.36
Ship and boat	1152.3	\$29.92
Other transport	793.5	\$27.21
Furniture	584.5	\$20.58
Miscellaneous	658.1	\$21.94

Data for Chart 7. Average hourly compensation costs for blue-collar workers by value added per hour of production labor, private manufacturing industries, 2007

Sector	Value added per hour	Mean compensation per hour
Food	\$104.90	\$19.79
Beverage	\$310.38	\$28.77
Textile mills	\$61.02	\$18.08
Textile products	\$59.60	\$18.05
Apparel	\$49.57	\$12.45
Wood products	\$49.27	\$18.74
Paper	\$120.37	\$31.91
Printing	\$72.50	\$21.30
Petroleum	\$810.37	\$38.93
Chemical	\$389.48	\$27.57
Plastics	\$74.30	\$20.19
Rubber	\$72.48	\$23.79
Mineral	\$94.81	\$24.07
Primary metal	\$116.75	\$27.62
Fabricated metal	\$77.40	\$23.16
Machinery	\$110.44	\$27.08
Computer and Electronic	\$235.06	\$23.86
Electrical	\$103.78	\$24.35
Auto	\$111.51	\$38.68
Auto (chassis only)	\$239.31	\$44.88
Auto (body only)	\$57.32	\$26.40

Sector	Value added per hour	Mean compensation per hour
Auto (parts only)	\$81.09	\$38.72
Aerospace	\$228.99	\$38.95
Ship and boat	\$68.09	\$25.81
Other transport	\$161.21	\$24.60
Furniture	\$60.59	\$19.53
Miscellaneous	\$116.86	\$22.08

Data for Chart 8. Average hourly compensation costs for blue-collar workers by average number of production workers per company, private manufacturing industries, 2007

Sector	Production workers per company	Mean compensation per hour
Food	52	\$19.79
Beverage	23	\$28.77
Textile mills	49	\$18.08
Textile products	18	\$18.05
Apparel	16	\$12.45
Wood products	28	\$18.74
Paper	92	\$31.91
Printing	14	\$21.30
Petroleum	61	\$38.93
Chemical	44	\$27.57
Plastics	55	\$20.19
Rubber	66	\$23.79
Mineral	31	\$24.07
Primary metal	86	\$27.62
Fabricated metal	20	\$23.16
Machinery	30	\$27.08
Computer and Electronic	38	\$23.86
Electrical	53	\$24.35
Auto	100	\$38.68
Auto (chassis only)	479	\$44.88
Auto (body only)	60	\$26.40
Auto (parts only)	90	\$38.72
Aerospace	154	\$38.95
Ship and boat	66	\$25.81
Other transport	33	\$24.60
Furniture	18	\$19.53
Miscellaneous	13	\$22.08

Data for Chart 9. Average hourly compensation costs for blue-collar workers by log of number of companies in industry, private manufacturing industries, 2007

Sector	Log number of companies in industry	Mean compensation per hour
Food	4.34	\$19.79

Sector	Log number of companies in industry	Mean compensation per hour
Beverage	3.50	\$28.77
Textile mills	3.42	\$18.08
Textile products	3.80	\$18.05
Apparel	3.93	\$12.45
Wood products	4.18	\$18.74
Paper	3.54	\$31.91
Printing	4.51	\$21.30
Petroleum	3.05	\$38.93
Chemical	4.03	\$27.57
Plastics	4.00	\$20.19
Rubber	3.25	\$23.79
Mineral	4.07	\$24.07
Primary metal	3.60	\$27.62
Fabricated metal	4.76	\$23.16
Machinery	4.39	\$27.08
Computer and Electronic	4.12	\$23.86
Electrical	3.75	\$24.35
Auto	3.85	\$38.68
Auto (chassis only)	2.51	\$44.88
Auto (body only)	3.28	\$26.40
Auto (parts only)	3.69	\$38.72
Aerospace	3.14	\$38.95
Ship and boat	3.21	\$25.81
Other transport	2.98	\$24.60
Furniture	4.32	\$19.53
Miscellaneous	4.49	\$22.08