

# Paying to Put Out Fires

Examining the labor market for firefighters is an interesting laboratory for thinking about compensation.

There is surprisingly little academic work on the compensation of firefighters. This may be, in part, because their wages are often set by collective bargaining agreements and that those paid as firefighters are regularly paid by seniority. But many aspects of the labor market can still be studied through this interesting occupation, including labor unions, compensation for job risk and even volunteerism.



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## Interesting Early Work

Consider the mountains of papers on Fortune 500 CEOs (a pile to which I have contributed) relative to the number (500) of employees doing this job in the United States. In contrast, consider the tiny number of papers on firefighters relative to the large numbers who fill these ranks (more than 300,000 in the U.S. alone, according to 2013 data from the U.S. Bureau of Labor Statistics).

Although there are surprisingly few academic articles on firefighters, there are some very interesting papers. One of my favorites is by Orley Ashenfelter, "The Effects of Unionization on Wages in the Public Sector: The Case of Firefighters" (*Industrial and Labor Relations Review*, 24(2), January 1971, 191-202). This is an excellent early paper that shows careful statistical work, economic theory and institutional understanding. It demonstrates (among other things) that unionized firefighters earned between 6 and 16 percent more than their nonunion counterparts. One of my favorite parts of the paper, however, is the title. At a time when

“Manpower Departments” were still the norm, Ashenfelter had the foresight to use the term firefighter.

There is also interesting work on arbitration of firefighter contracts. In an occupation where strikes are obviously extremely dangerous, folks have had to consider alternative ways of settling disputes. In “The Impact of Arbitration on the Wages of Firefighters” (*Industrial Relations*, Fall 1980, 19(3), 325-39), Craig Olson finds arbitration results in positive wage effects for firefighters, relative to other dispute resolution methods. These papers are both “oldies but goodies.”

### Risk and Compensating Differentials

Firefighting is an excellent occupation for discussing what economists call “compensating differentials.” Way back in the 1700s, Adam Smith wrote about the fact that wages should vary with “... the ease or hardship, the cleanliness or dirtiness ...” of the job (*The Wealth of Nations* in 1776, Chapter 10). And firefighting is full of risks and hardships. According to a 2012 study, when compared with all workers, firefighters are 26 percent more likely to die on the job and are twice as likely to experience nonfatal injuries and illnesses (Gary Kurlick, *Monthly Labor Review*, November 2012, 18-25).

According to the compensating differential idea, we might expect firefighters to be paid a fortune, but in fact, they are not. According to 2013 data from the Bureau of Labor Statistics (“National Occupational Employment and Wage Estimates” and “Occupational Employment and Wages”), the average hourly wage across all U.S. occupations is \$22.33, while that for firefighters is just a bit higher at \$23.21. The distribution of hourly pay of firefighters ranges from \$10.56 (\$21,960 annualized) at the 10<sup>th</sup> percentile to \$38.67 (\$80,430 annualized) at the 90<sup>th</sup>. (See Figure 1).

So don't firefighters receive a compensating wage differential, or is all that risk only worth 88 cents per hour? It turns out that it is remarkably difficult to really test for compensating differentials. To accurately measure the compensating wage differential, one would need to be able to compare the wages of firefighters who face danger in terms of high ladders and fire when they show up to work with firefighters who do not; and it's pretty hard to find the latter group. Alternatively, you could try to compare the pay of firefighters who face danger in terms of high ladders and fire with the pay of nonfirefighters who do not face those risks. But this presents further complications in needing to isolate the differences in necessary skills, other job characteristics and, of course, the nonmonetary

Figure 1 | National Percentile Wage Estimates for Firefighters

Percentile	10%	25%	50% (Median)	75%	90%
Hourly wage	\$10.56	\$14.95	\$21.92	\$29.58	\$38.67
Annual wage*	\$21,960	\$31,110	\$45,600	\$61,520	\$80,430

\*Annual wages have been calculated by multiplying the hourly mean wage by a “year-round, full-time” hours figure of 2,080 hours; for those occupations where there is not an hourly mean wage published, the annual wage has been directly calculated from the reported survey data.

Source: U.S. Bureau of Labor Statistics, Occupational Employment and Wages, May 2013, <http://www.bls.gov/oes/current/oes332011.htm#top>

rewards of being a firefighter, such as helping others, serving a community and even the awesome fire dogs.

### The Future of Firefighter Pay

It is difficult to think about what the pay of firefighters might look like in the future. Will labor unions continue to be an important part of the labor market for this occupation? Will there be a continued switch away from defined benefit pension plans and robust medical benefits when job risk is so high? Will new technologies up-skill or de-skill the job? Will the push for pay-for-performance reach into the firehouse, like it has into the classroom for public school teachers — another often unionized public service job? If so, what would be the appropriate performance metrics for a firefighter?

And what about volunteer firefighters? What does it mean for pay and performance to have volunteers and paid employees working side-by-side, as happens in some small town fire departments? (I'm proud to say my daughter serves as such a volunteer firefighter and certified Emergency Medical Technician (EMT) in a local fire station.) The HR and compensation issues of paid and unpaid co-workers is certainly worthy of a column unto itself. So let's circle back to that one down the road. [WFS](#)



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