What Are Teachers Really Paid? Adjusting Wages for Regional Differences in Cost of Living

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Strikes by teachers in West Virginia, Oklahoma, Kentucky, Arizona, and Colorado have highlighted differences in teachers’ wages across the country. Teachers in these states have lower-than-average annual wages but also lower-than-average cost of living (COL). Adjusting for differences in COL narrows the differences in teachers’ wages across the country, but substantial differences remain. Wages that are adjusted for price-level differences are called “real wages” because they measure the real purchasing power of wages.

Figure 1 shows the relationship between average teachers’ wages in 2017 and COL in 2016 measured by regional price parities (RPPs). An RPP of 100 indicates a COL equal to the national average, while an RPP of 110 indicates a COL 10 percent above the national average. States where teachers earn higher wages also happen to be the states with higher COL. Teachers in New York earn the highest nominal wage at $80,625 per year, almost twice as much as teachers in Oklahoma, who make the lowest nominal wage at $41,145 per year. However, COL in New York is 15 percent above the national average, while COL in Oklahoma is 10 percent below the national average.

Cost of living explains only some of the differences in teacher pay.

Figure 2 adjusts wages for regional differences in COL. As expected, interstate wage gaps shrink after adjusting for COL, but the differences in wages fail to completely capture the differences in COL. The gap between New York and Oklahoma still exists but significantly shrinks from $40,000 to $28,000 in real (COL-adjusted) dollars.

NOTE: A metropolitan statistical area (MSA) is a geographical region with a relatively high population density at its core and close economic ties throughout the area. The dashed line is the fitted linear relation.

The growth of online education has made this a possibility for teaching older students. While schools cannot move, teachers can relocate. However, there are some barriers to migration. Public-teacher pension plans set vesting periods that require teachers to stay for a certain number of years before becoming eligible for their retirement contributions. The difficulty in transferring teacher certifications may also limit cross-state mobility of teachers.

Education spending in each state plays an important role in determining teacher wages. In 2016, public elementary and secondary school spending per pupil in New York was $22,000, three times more than the $7,000 per pupil in Arizona. There is a strong positive correlation between public funding for education and teachers’ wages: A $1,000 difference in a state’s education spending per pupil is associated with a $1,162 wage difference. The difference in teacher quality is another possible explanation for cross-state wage differences. Higher pay attracts more able graduates into the profession. As the supply of teachers increases, entry into the profession becomes more competitive and the quality of teachers rises.

Other Factors Specific to Teachers

Unlike firms in other industries, schools are unable to relocate to hire lower-wage teachers, although continued growth of online education has made this a possibility for teaching older students. While schools cannot move, teachers can relocate. However, there are some barriers to migration. Public-teacher pension plans set vesting periods that require teachers to stay for a certain number of years before becoming eligible for their retirement contributions. The difficulty in transferring teacher certifications may also limit cross-state mobility of teachers.

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Another factor in wage differences could be mismeasurement from comparing annual wages instead of total compensation. Wage is only one part of the compensation package. Teaching usually offers additional benefits such as pensions and health insurance. Some states may provide benefits instead of additional wages.

Notes
1 Wages include base rates, commissions, COL allowances, deadheading pay, guaranteed pay, hazard pay, incentive pay, longevity pay, over-the-road pay, piece rates, portal-to-portal rates, production bonuses, and tips.
2 Data are from the Bureau of Labor Statistics (2017). Wages are for both public and private school teachers.
3 See Carlino (1986).
4 See Aldeman (2015).
5 Data are from the Census Bureau (2018).
6 See Dolton and Marcenaro-Gutierrez (2011).
7 See Dolton and Marcenaro-Gutierrez (2011).
8 NEA Research (2016).

References