

# An empirical analysis of teacher salaries and labor market outcomes in Oklahoma

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# Research Questions

- 1 How do teacher salaries in OK compare to salaries in the private sector and to teacher salaries in TX?
- 2 What do teacher labor market outcomes look like in OK?
  - How do teacher turnover rates and hiring compare to TX and how do they vary by school type (urban v. rural, low-income v. high-income)?
- 3 Policy implications

# Key Findings

## 1 SALARIES:

- Teacher salaries in OK are low compared to TX and the private sector, particularly among mid-career teachers and for teachers in urban areas.
- Teacher salaries in TX are about 16% higher overall. About 34% higher if you compare OKC/TUL to DAL/HOU.
- Salaries in OK private sector are 28% higher than teacher salaries. Gap is particularly large for mid-career teachers. Starting teacher salaries actually exceed private sector salaries.
- Urban vs. all teacher pay gaps: 17% in TX, 2% in OK

# Key Findings

## 2 Teacher labor market outcomes:

- Teacher turnover is higher in OK than in TX (8% vs. 11% exit public schools annually)
- Attrition in low-income, urban schools is particularly high
- Low-income, urban schools have difficult time hiring experienced teachers
- Students in OK low-income, urban schools taught by the least experienced, least attached teachers

# Key Findings

## 3 Policy:

- Achieving turnover parity with TX (12% salary increase)
- Differentiated salaries within districts (low-income vs. high-income schools 50% differential to equalize turnover) (by subject or grade?)
- Improve efficiency by reshaping salary schedule (concave vs. convex)

# Institutional background

- Who sets salaries and how? (district salary schedules, state minimum schedule)
- Teachers and principals determine turnover and hiring.

## STILLWATER PUBLIC SCHOOLS

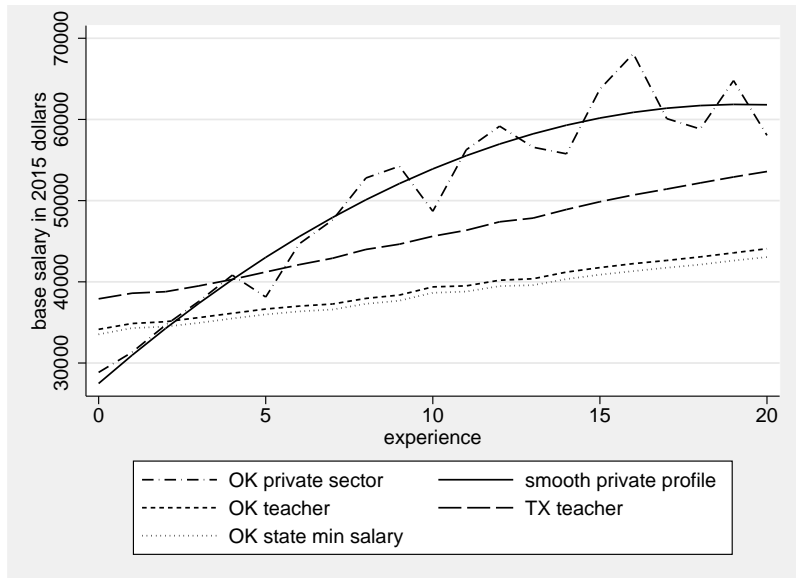
### Certified Salary Scale 2014-2015

	level I bachelors degree	level II bachelors + 16 hours	level III masters degree
step			
0	\$32,522	\$32,769	\$33,660
1	\$32,886	\$33,160	\$34,049
2	\$34,036	\$34,233	\$35,603
3	\$34,400	\$34,961	\$36,260
4	\$34,746	\$35,325	\$36,625
5	\$35,716	\$36,183	\$37,587
6	\$36,052	\$36,868	\$38,452
7	\$36,000	\$37,000	\$38,000

# Data

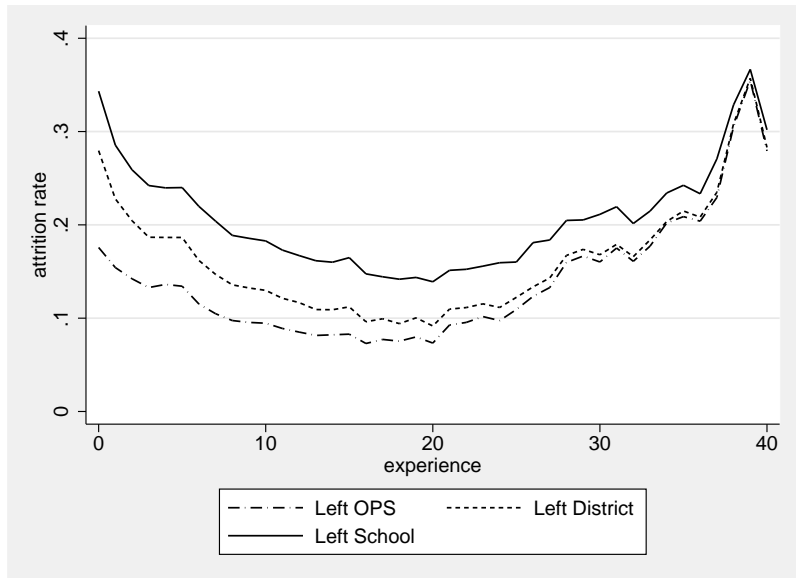
- Administrative files from OK State Dept of Education and Texas Education Agency (2006-15)
  - teacher characteristics - experience, degree, FTE
  - teacher assignments - school, district, grade, subject
  - teacher salaries - base salary (determined by district salary schedule)
- American Community Survey (2006-2014) from the US Census Bureau
  - representative sample of worker characteristics and employment outcomes
  - Use to estimate alternative salaries for public school teachers in OK's private sector
  - median salary for full-time workers holding a BA/BS by potential experience (age-23) employed in OK's private for profit firms (excludes self-employed)

# Salary by year of experience

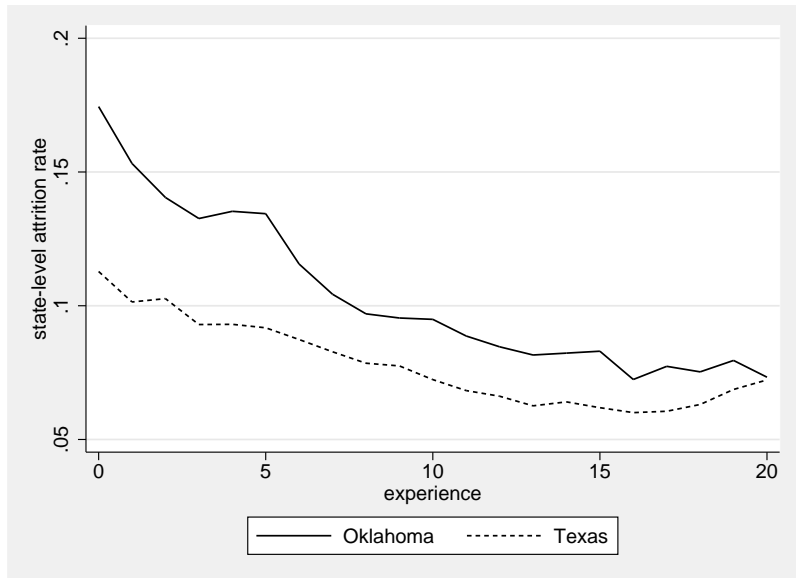




# Teacher attrition rates in OK



## Teacher attrition rates: OK vs TX



## Teacher attrition rates

		left Pub Schls	left district	left school
	All OK	11.1%	15.7%	21.0%
	All TX	8.4%	13.8%	20.3%
by locale	City	12.9%	17.0%	24.6%
	Rural	9.4%	14.6%	18.9%
	Suburb	12.9%	16.6%	22.2%
	Town	10.0%	14.1%	18.8%
by free lunch elig.	≤32%	12.0%	15.5%	20.3%
	32-48%	10.5%	14.8%	19.1%
	48-65%	9.8%	14.6%	19.6%
	>65%	12.0%	17.0%	24.7%

## OK teacher credentials

		experALL	experTURN	experHIRE	%BA	%MA
	All	12.4	11.2	7.0	75%	25%
locale	City	11.7	10.1	6.4	73%	27%
	Rural	12.9	11.9	7.3	76%	24%
	Suburb	12.2	10.7	7.2	75%	25%
	Town	12.9	12.2	7.2	73%	27%
lunch	≤32%	12.6	11.3	7.4	74%	26%
	32-48%	13.0	11.9	7.1	74%	26%
	48-65%	12.6	11.7	7.2	75%	25%
	>65%	11.6	10.3	6.5	75%	25%

# Policy

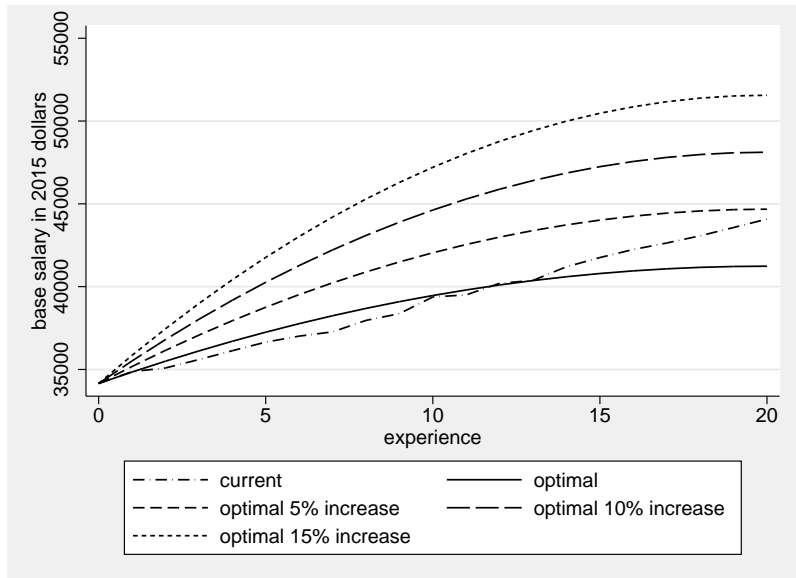
- How can changes in teacher salaries improve student outcomes?
  - Good teachers (high value-added) have large effects on student test scores and long-term outcomes (Chetty, Rockoff, Friedman 2014)
  - How can higher salaries improve teacher productivity?
    - a Effort? Some evidence in other professions.
    - b Improved retention of high-ability teachers (Hendricks working paper)
    - c Direct effects of improved retention: strengthened bonds between students and teachers (Ronfeldt, Loeb & Wyckoff (2013))
    - d Improved retention increases overall teacher experience (Hendricks 2014) (Experience matters - a lot of research)

# Policy

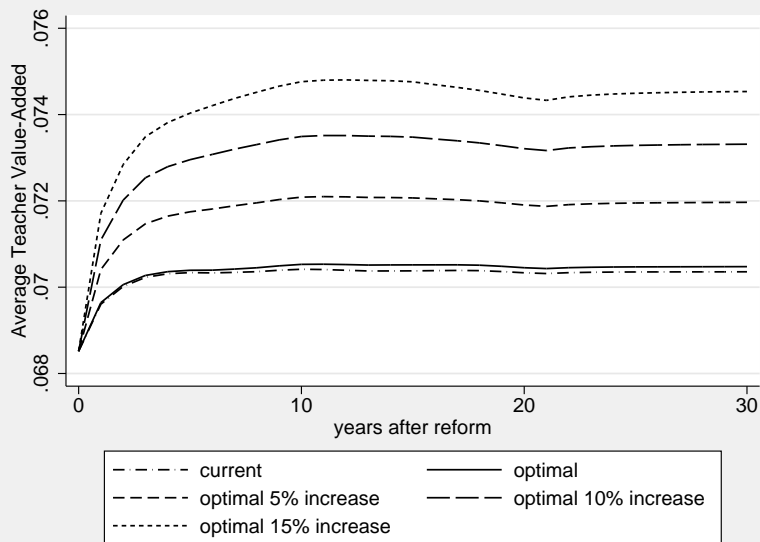
## Implications for policy

- Teacher attrition is high in OK relative to Texas. How can we equalize this? (shift salary schedules up by about 12%)
- Teacher attrition is high and experience levels are low in low-income schools. How can we address this? Differentiated salaries (pay a compensating differential on the order of 50%.)
- Is there a way to improve teacher productivity for free? Yes. Reshape the salary schedule.

# Reshaping the salary schedule



# Average teacher value-added





# Conclusion

## Takeaways

- OK teacher salaries are low relative to TX and the OK private sector
- Teacher attrition in OK is high relative to TX
- Attrition is particularly high in low-income urban schools
- Ways to improve student outcomes in OK:
  - increase teacher salaries
  - offer differentiated salaries by school characteristics or position characteristics.
  - reshape the salary schedule

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