Washington Wages: A Comparison of Educator and Non-educator Salaries

A presentation to
The Joint Task Force on Basic Education Finance
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Substantial Variation in Wages

- According to the National Center for Education Statistics' Comparable Wage Index (NCES CWI)
  - The prevailing wage for college graduates is 9 percent higher in Seattle than it is in Olympia, and 11 percent higher in Olympia than it is in Bellingham
  - The difference in wages from the most expensive labor market in the state (Seattle) to the least expensive labor markets in the state (rural eastern Washington) approaches 28 percent
- Most recent data –2005

Consequences

- School districts must compete for workers in all of these labor markets
- Large geographic differences in the price of labor imply equally large differences in the purchasing power of school districts
- Rapid growth in labor costs can imply substantial erosion in school district purchasing power over time

This Report

- Updates the NCES CWI through 2007
- Develops a new CWI for workers who are not college graduates
- Compares educator salaries in Washington school districts with those of comparable workers outside education

Updating the NCES CWI

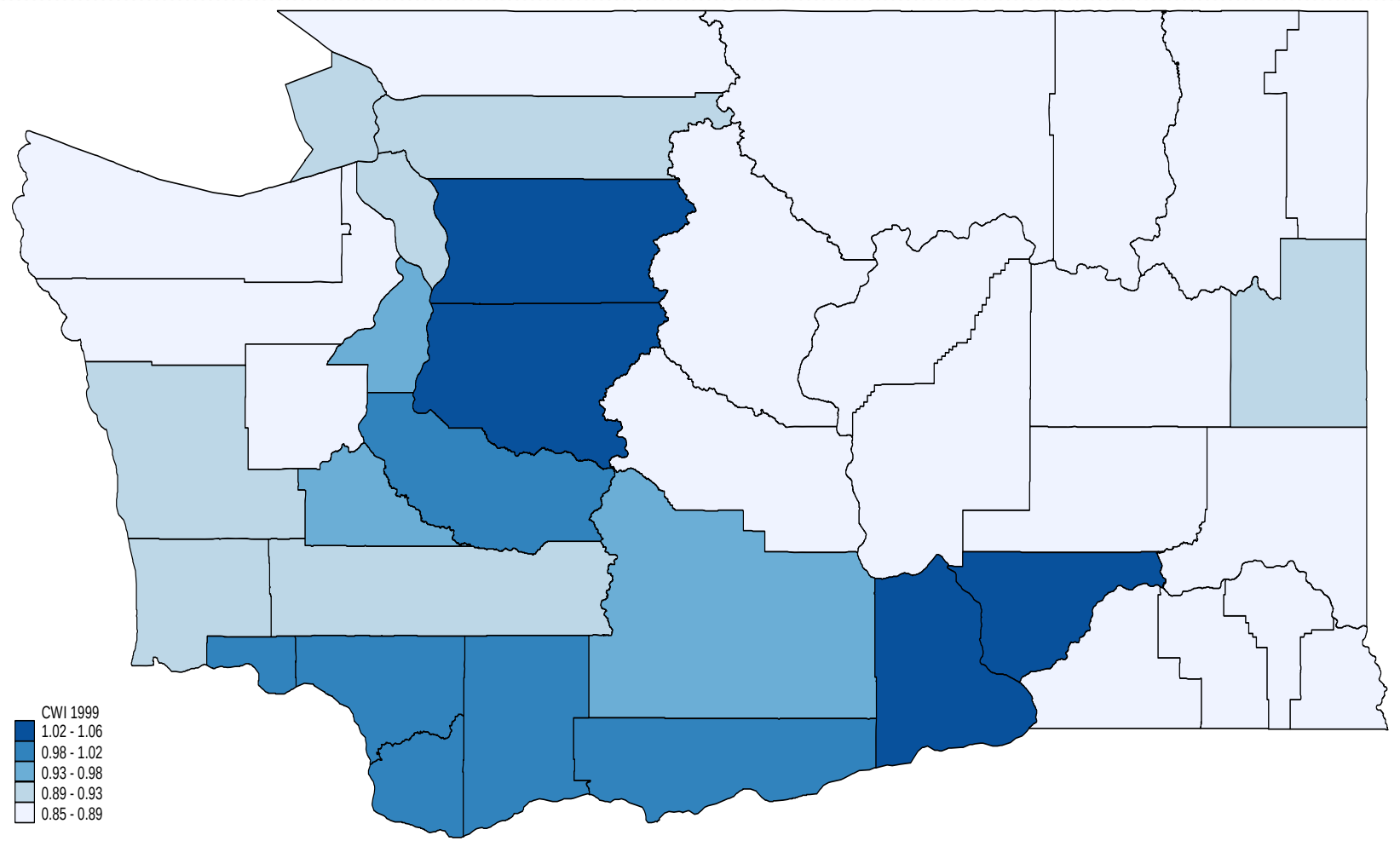
The NCES CWI

- The NCES CWI measures the prevailing wage for college graduates in 800 U.S. labor markets
- Baseline estimates (for 1999) come from a regression analysis of individual earnings data from the 2000 U.S. Census
- Annual updates to that baseline come from regression analyses of occupational earnings data provided by the U.S. Bureau of Labor Statistics

The Baseline NCES CWI

- The 800 labor markets in the NCES CWI are based on "place-of-work areas" as defined by the Census Bureau for the 2000 Census
- There are 16 NCES CWI labor market in Washington
  - Nine correspond to metropolitan areas—Bellingham, Bremerton, Kennewick, Olympia, Portland, Seattle, Spokane, Tacoma, and Yakima
  - Seven represent clusters of rural counties
- Each Washington school district is associated with one of the 16 labor market areas

The Baseline NCES CWI



The NCES CWI in Non-Census Years

- Occupational Employment Survey (OES) data used to estimate annual salaries in states and metro areas
  - Survey respondents employ > 70% of US workers
  - Estimated salaries adjusted for occupational mix
- States and metros used to estimate salaries in rural areas
- Growth in OES salaries used to grow baseline CWI
- NCES CWI available for 1997-2005

The Updated CWI

- Same method used to update NCES CWI
- Wage differences among Washington labor market areas widened slightly between 2005 and 2007
- On average, wages for college graduates in Washington increased 3.5 percent per year between 2005 and 2007
  - Slowest growth in rural Washington, where the wage level increased by 2.9 percent per year
  - Most rapid growth in Bremerton, where the wage level increased by 4.7 percent per year

Developing a Comparable Wage Index for High School Graduates

Estimating the HS CWI

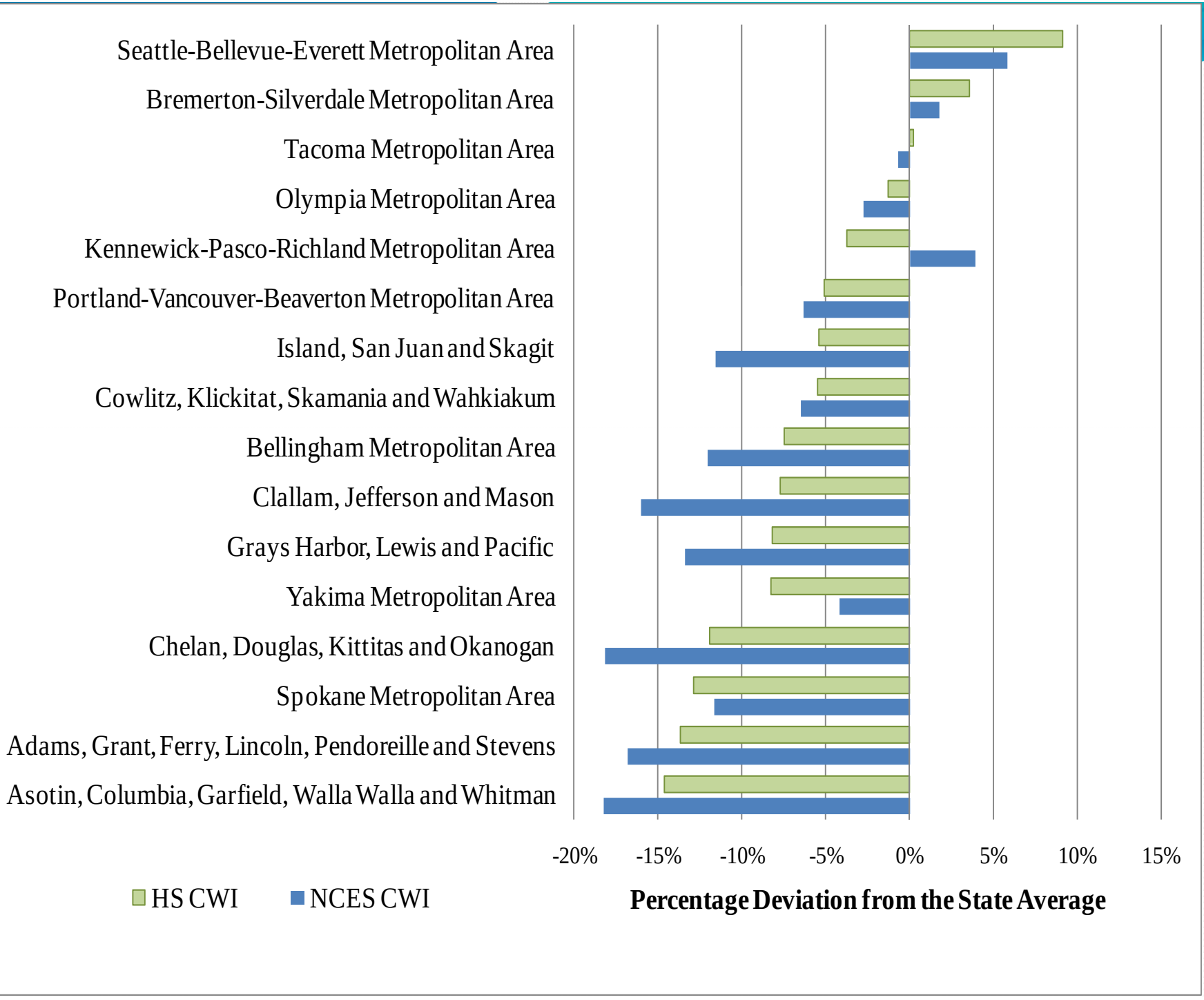
- Same methodology as NCES CWI
  - Regression analysis of 2000 Census for baseline
  - Growth in occupationally adjusted OES wage levels to update
  - OES wage levels based on occupational mix of high school graduates

Baseline Analysis of 2000 Census

- Individuals who have completed high school or received a G.E.D. degree, but have not completed a bachelor's degree
  - 1,831,792 employed, high school graduates drawn from 452 occupations and 256 industries
- Annual wage and salary earnings in each labor market, adjusted for
  - Age, gender, race, educational attainment, amount of time worked, occupation and industry of each individual in the national sample
- Same definition of labor markets as in the NCES CWI

The HS CWI in Non-Census Years

- As with the NCES CWI, I extended the HS CWI to non-census years using OES-based estimates of state and metropolitan area wage growth
  - If the OES estimated wage level for Portland in 2000 is 2 percent higher than the OES estimated wage level for Portland in 1999, then the HS CWI for Portland in 2000 is 2 percent higher than the HS CWI baseline
- I estimated the HS CWI for each year from 1997-2007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HS CWI
NCES CWI
Percentage Deviation from the State Average

Prevailing Salaries for Washington Educators

The Hedonic Wage Strategy

- The hedonic salary model for Washington educators describes each educator's salary as a function of
  - Personal characteristics
  - Job assignments
  - The school, school district, and NCES labor market
- I use this model to predict the average full-time-equivalent salary in each school district, holding constant the influence of demographic characteristics and job assignments

Data and Estimation

- Data provided by Washington State Institute for Public Policy and the Office of Superintendent for Public Instruction (OSPI)
- Data on earnings, worker characteristics and job assignments were drawn from the OSPI's S-275 files for the six school years from 2002-03 through 2007-08
- Data on teacher certification and endorsements come from OSPI's teacher certification files

The Definition of Salary

- During 2007-08, final total salaries for teachers exceeded base salaries by an average of $7,974
  - Base salaries measure earnings under the base contract
  - Final total salaries represent any and all earnings
- According to a recent survey, 65.8 percent of the difference between final total salaries and base salaries was paid to teachers specifically for teaching activities
- Therefore, I added 65.8 percent of the difference between her final and base salaries to each teacher's full time equivalent (F.T.E.) salary to yield full-time-equivalent teaching salary

Explanatory Factors from the Hedonic Salary Model

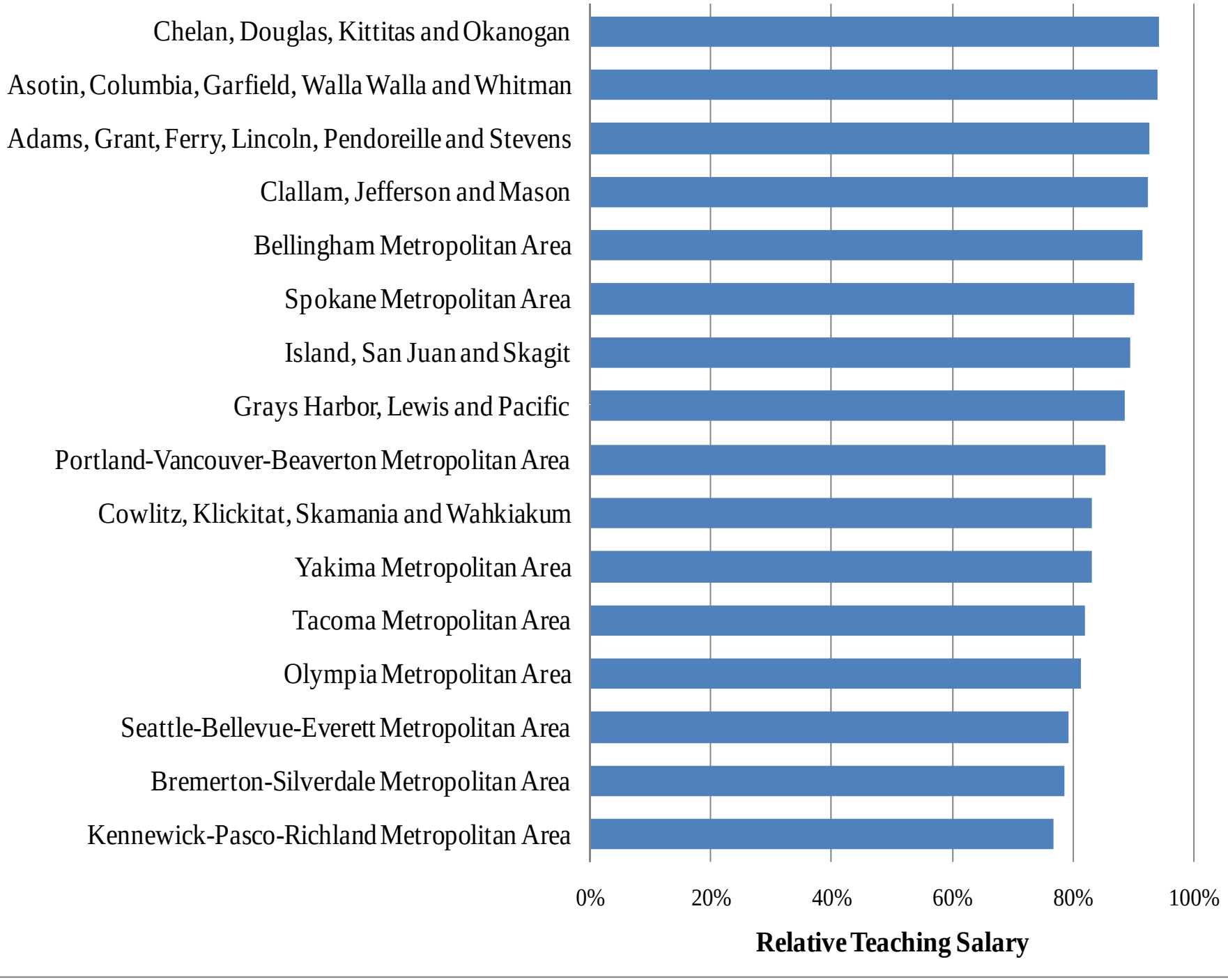
- Individual demographics (age, gender, ethnicity, experience, credit hours …)
- Certification endorsements
- Assignment activities
- Assignment programs
- Percent FTE in teaching
- Grade level assignment

The Prevailing Salary for Washington Teachers

- Hedonic model based on 55,500 teachers
- Explains 94.2 percent of the variation in teaching salaries
- State average for 2007 —$54,329
- Comparable salary for college graduates
  - Multiply national baseline by Washington CWI
  - Annual average— $67,257
  - 10-month average—$56,048

Relative Teaching Salaries

- Relative salaries are a measure of the competitiveness of teacher salaries
  - Defined as the ratio of teaching salaries to 12-month salaries for comparable non-educators
- Relative teaching salaries were more than 90% in Bellingham and most of rural eastern Washington
- Relative teaching salaries were less than 80% in the Seattle, Bremerton and Kennewick metropolitan areas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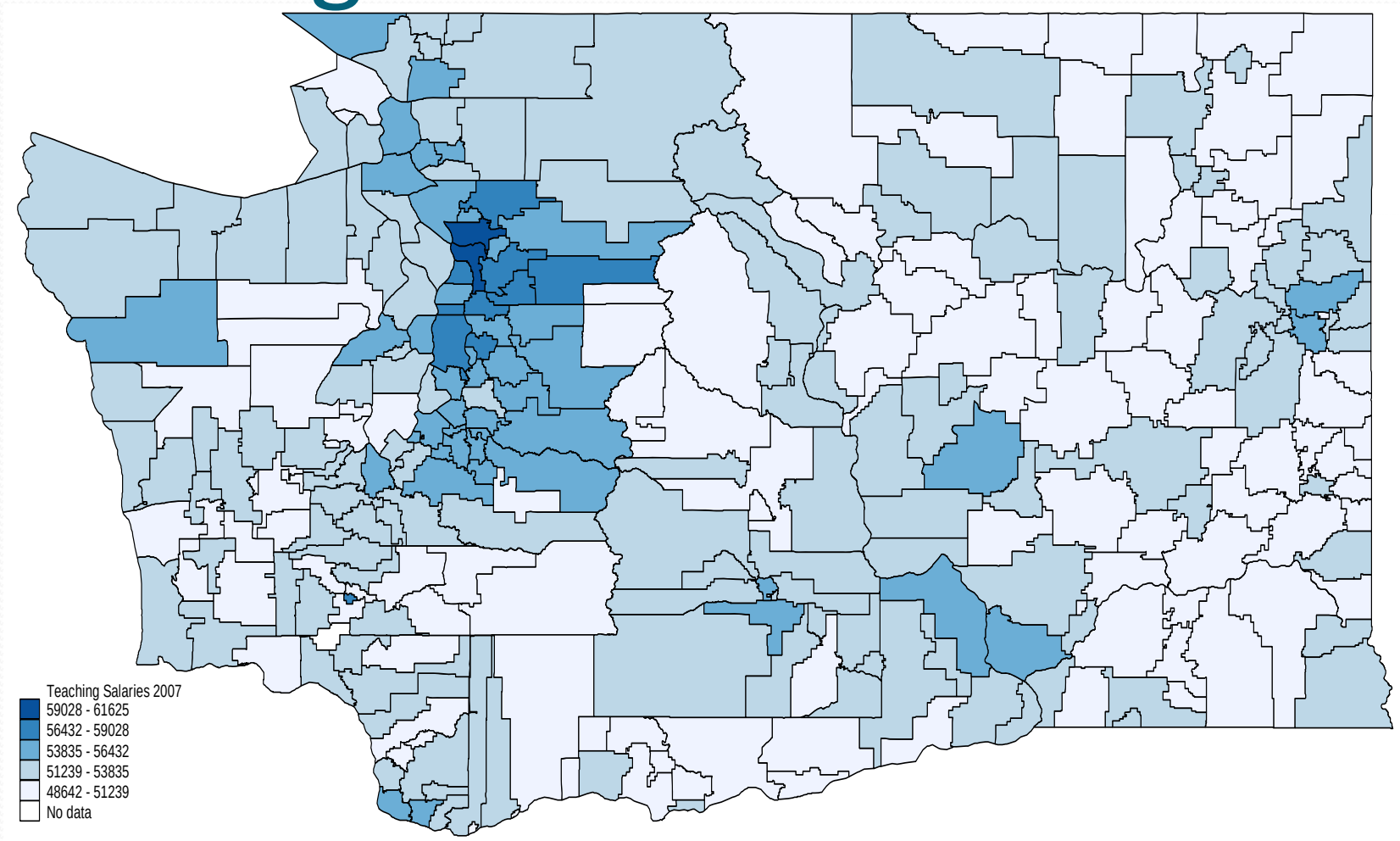
Relative Teaching Salary

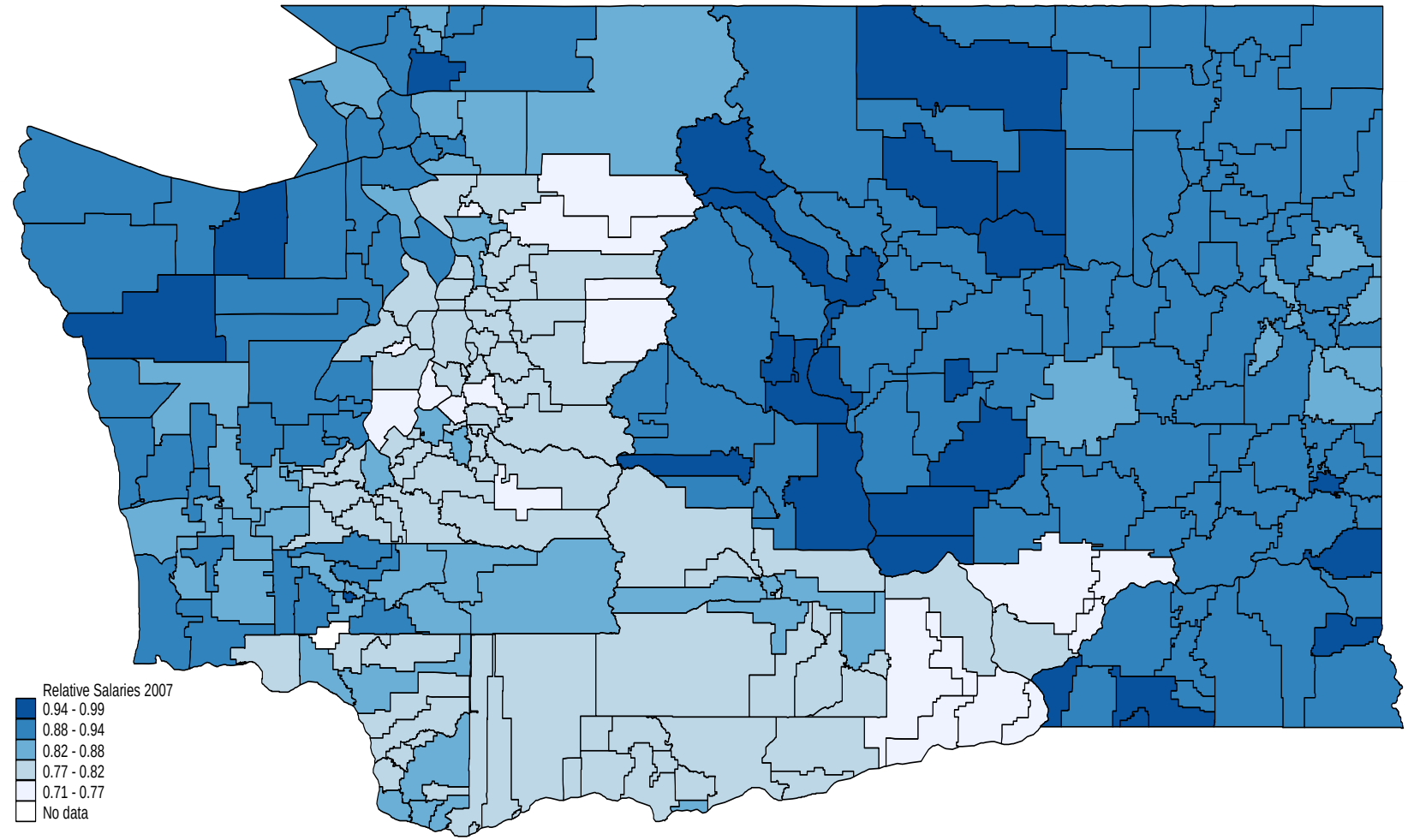
Teaching Salaries 2007

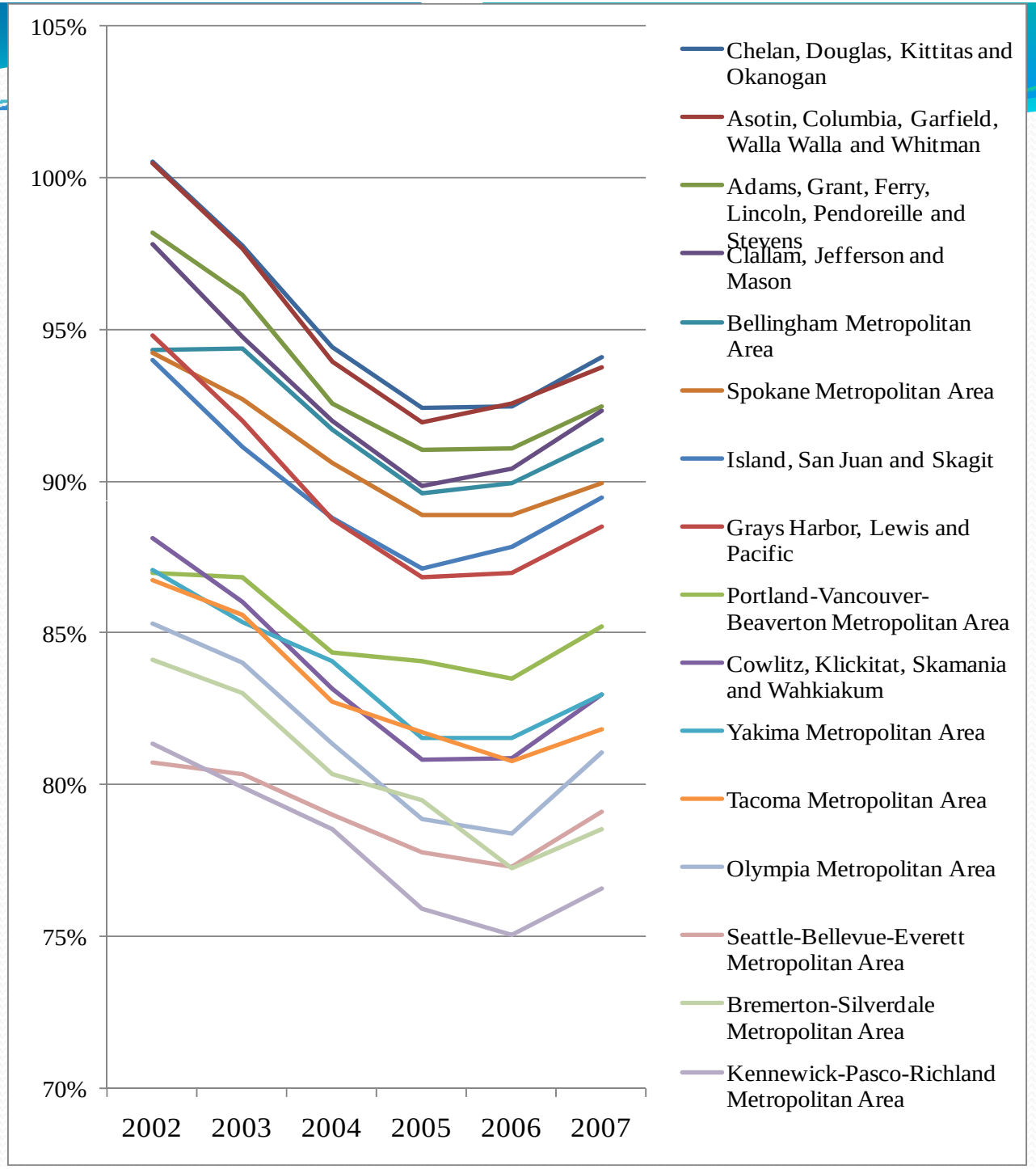


Relative Teaching Salaries

- The average relative teaching salary was 86.4%
- Relative salaries
  - Were lowest in the Index School District, where teacher were paid only 71.2 percent of the comparable salary
  - Were highest in the Evaline School District, where teachers were paid 99.5 percent of the comparable salary
- Relative teacher salaries were higher in the district with the lowest teaching salaries in the state—Dixie School District—than they were in the district with the highest teaching salaries in the state—Everett School District

Relative Teaching Salaries

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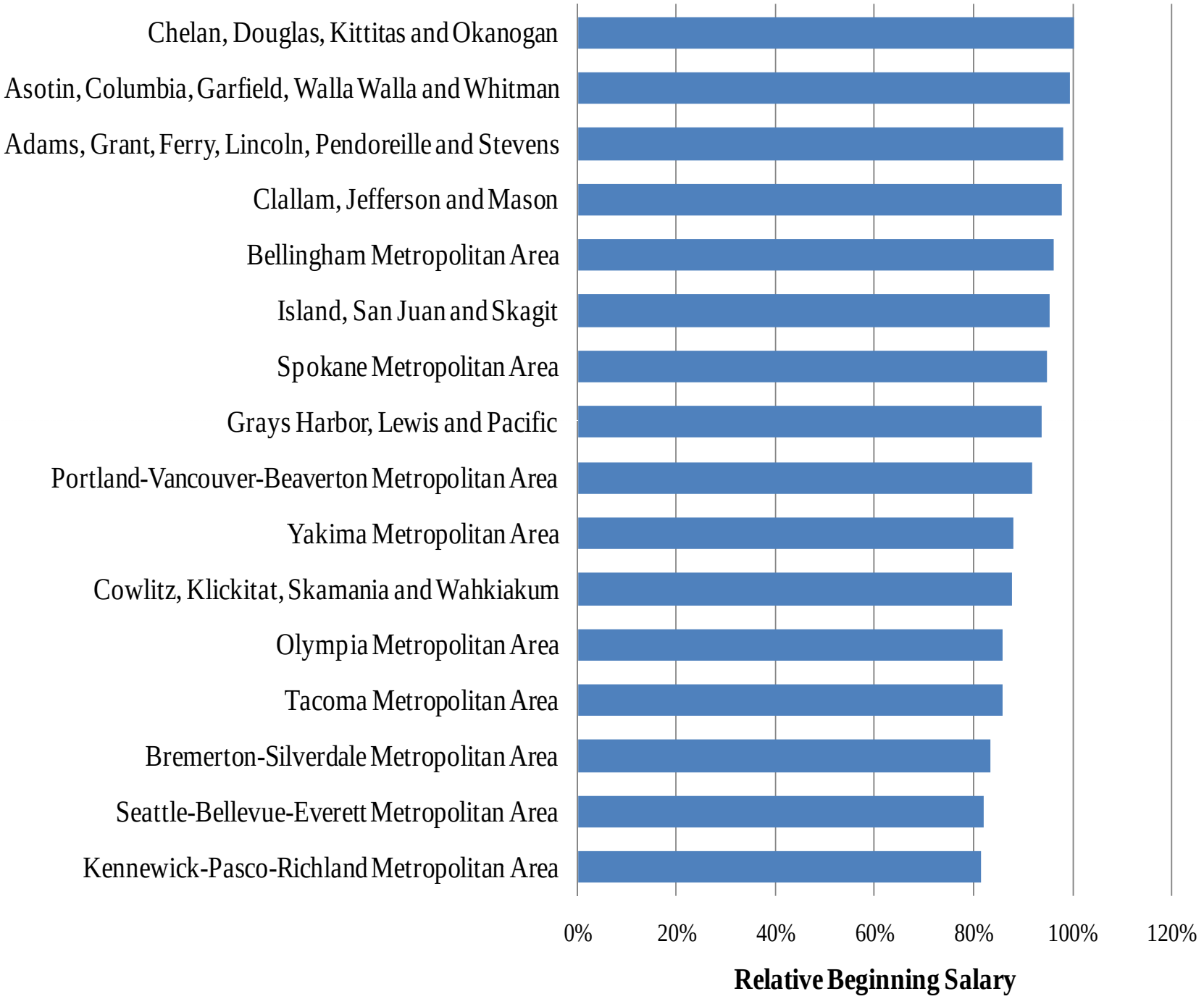
Beginning Teachers

- Teachers with < 4 years of experience
  - 10,661 individual teachers from 269 school districts
  - The model explains 83.3 percent of the variation in beginning teacher salaries
  - State average beginning salary —$41,597
- Comparable salary for 25-year-old college graduates
  - State average beginning salary—$48,880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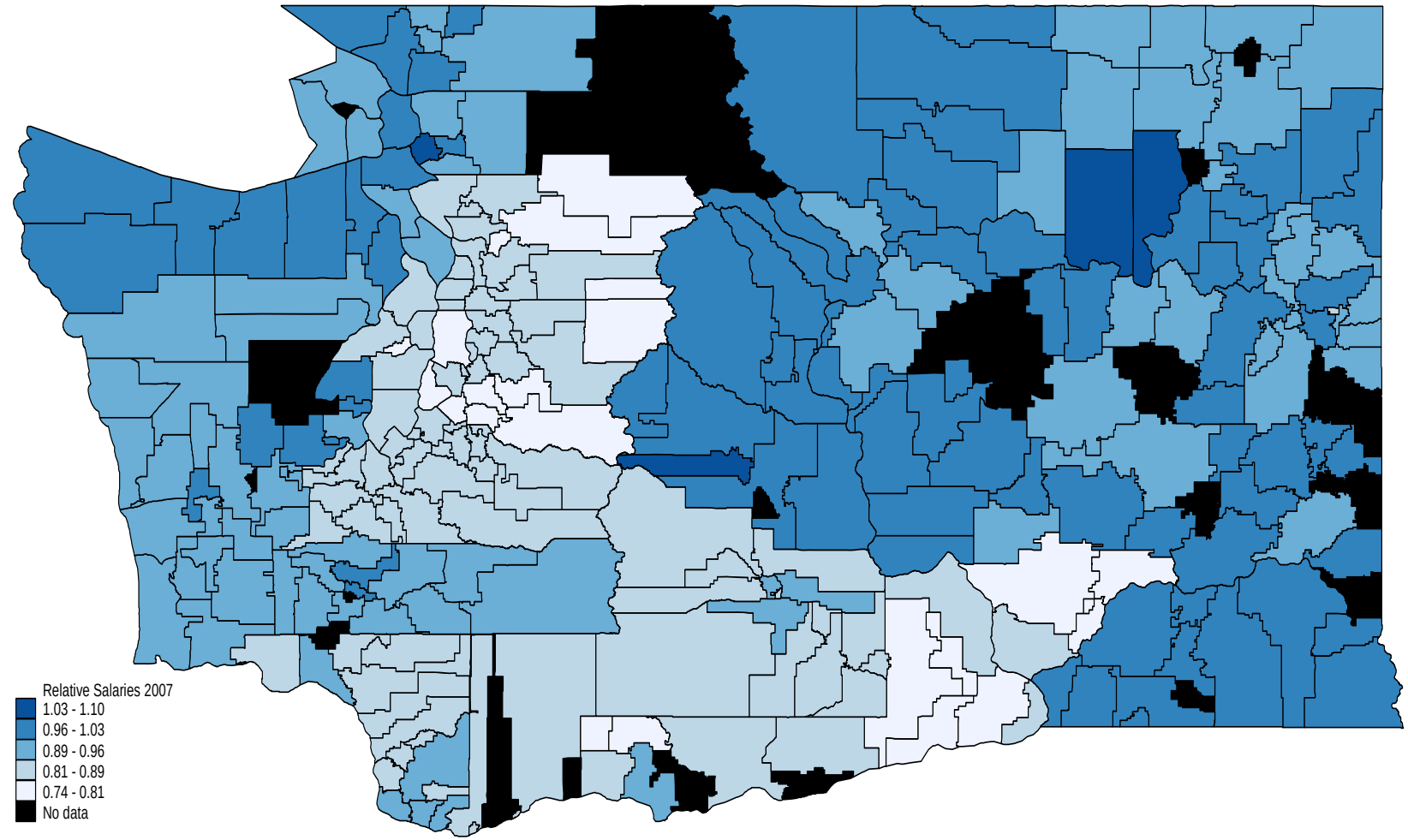
Relative Beginning Salary

Relative Beginning Salaries

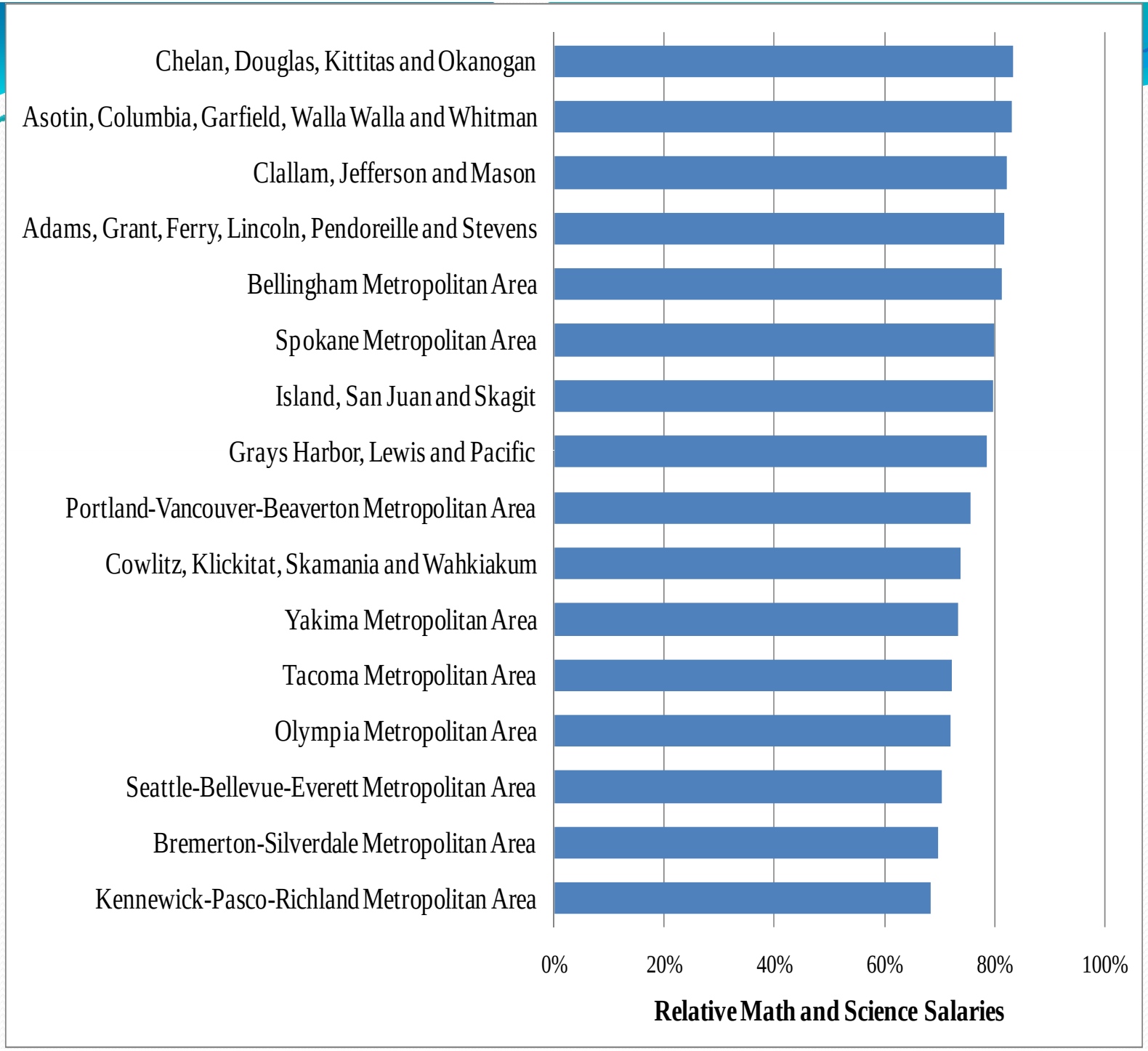


Math and Science Teachers

- Teachers with math or science endorsements
  - 6,125 individual teachers from 263 school districts
  - The model explains 93.4 percent of the variation in teacher salaries
  - State average salary —$54,568
- Comparable salary for science, technology and mathematic occupations
  - State average salary—$76,199

Math and Science Occupations

- Financial specialties
- Mathematical occupations
- Architecture and engineering
- Physical and life sciences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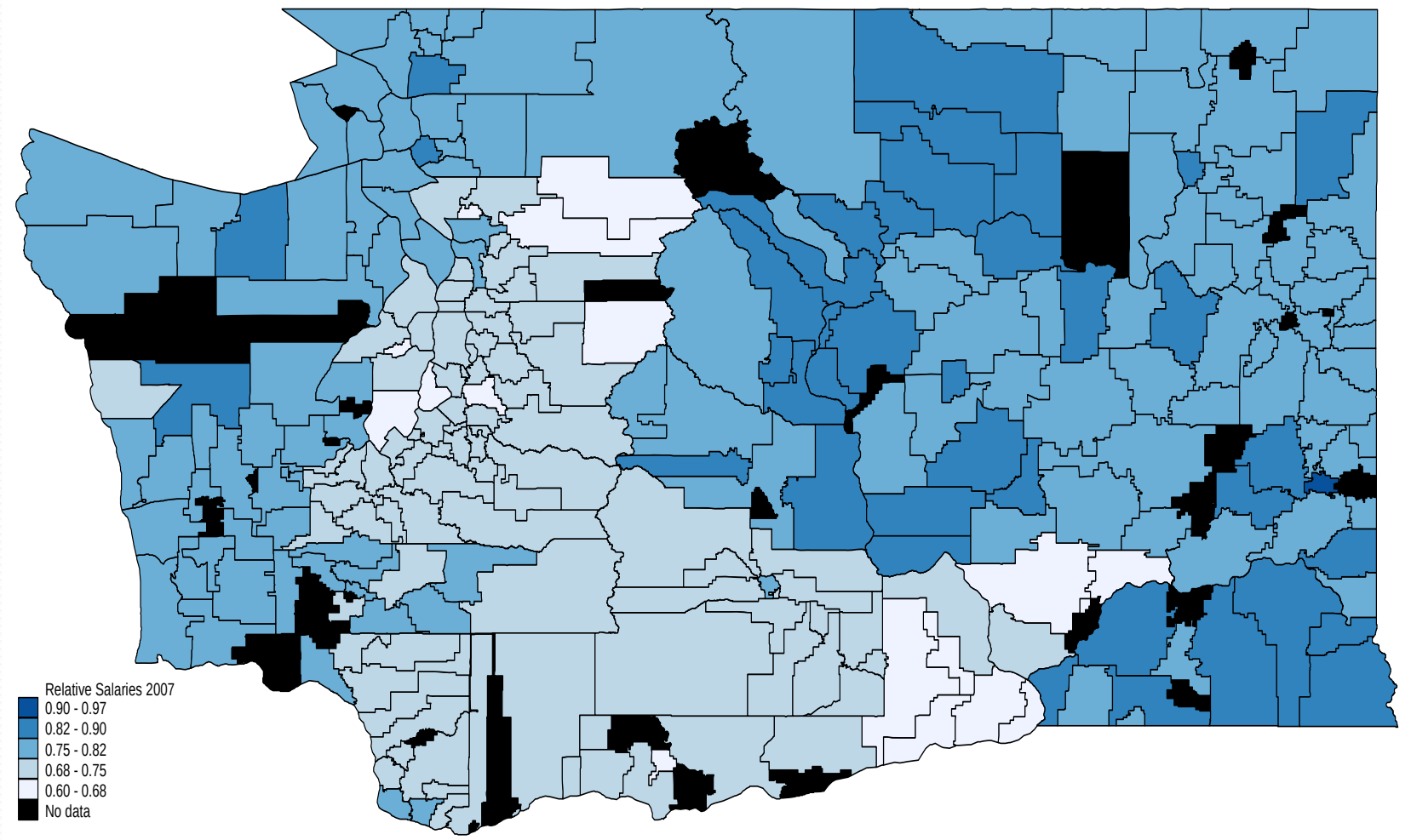
Relative Math and Science Salaries

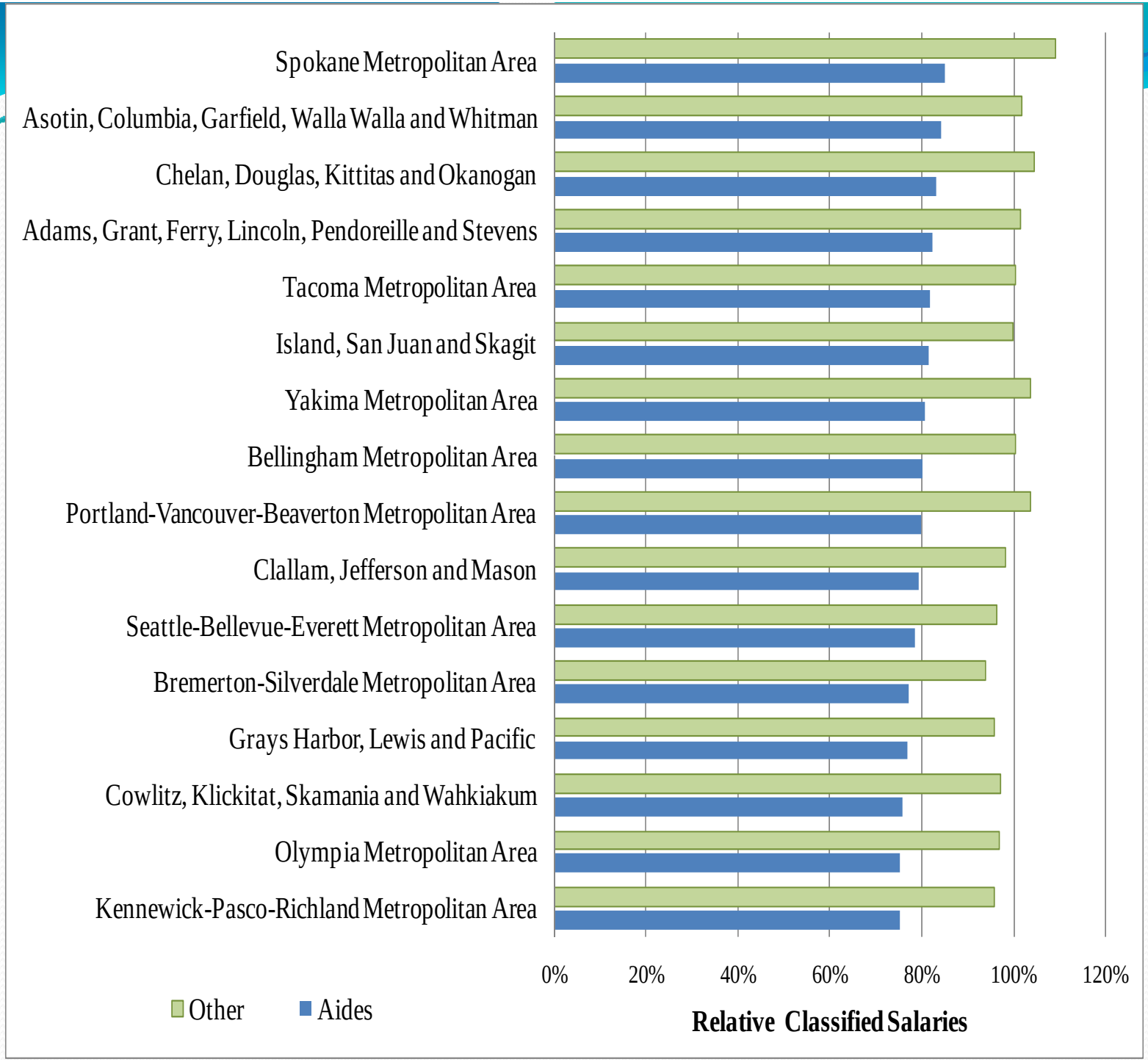
Relative Math and Science Salaries



Classified Staff Salaries

- Teacher aides and other classified staff
  - Complete data were available for 16,846 teacher aides and 25,176 other classified workers
  - The models explains
    - 46.8 percent of the variation in aide salaries
    - 56.2 percent of the variation in other classified salaries
- State average salaries —$30,557 and $38,408

- Comparable salary for high school graduates
  - State average salary—$39,091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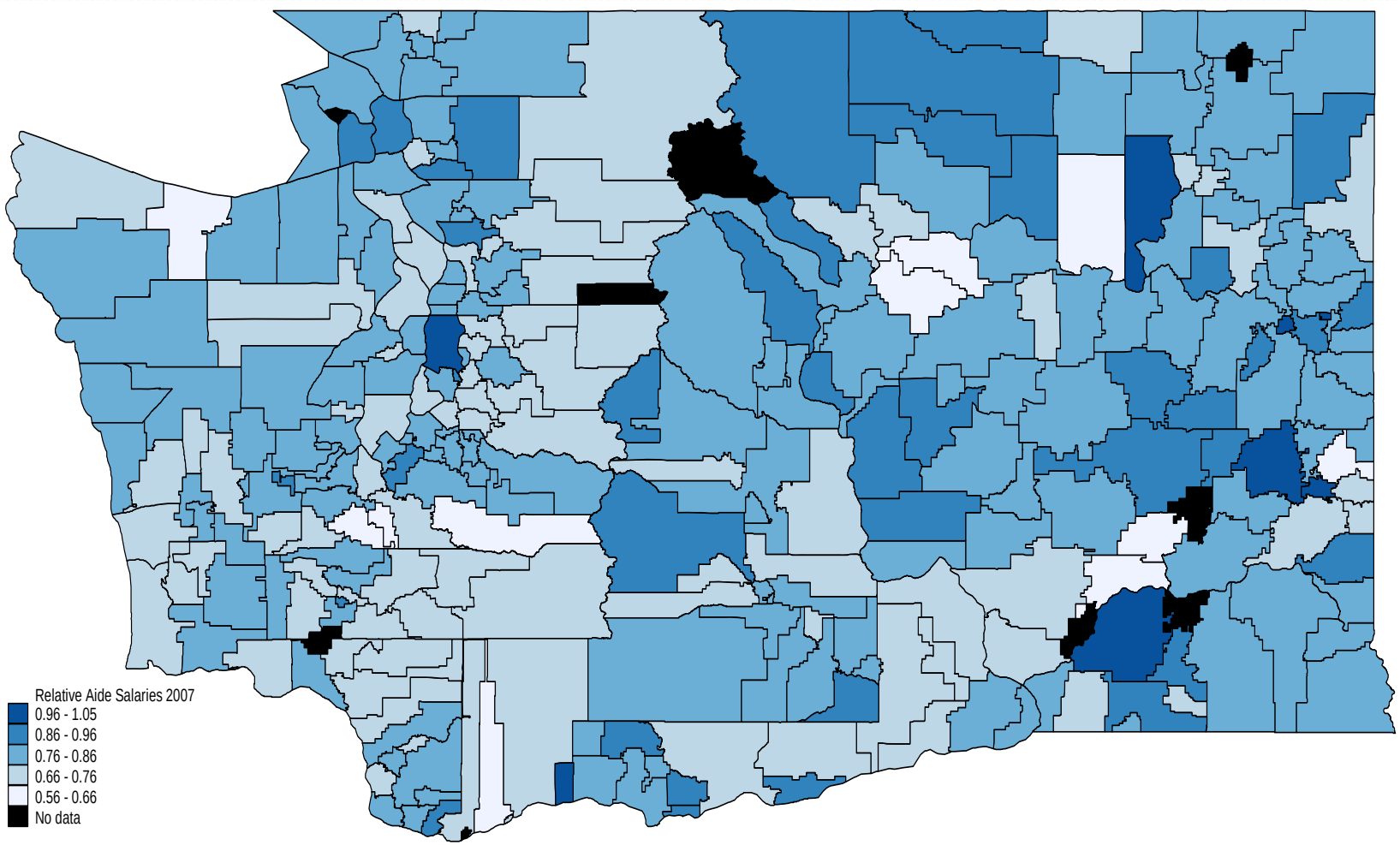
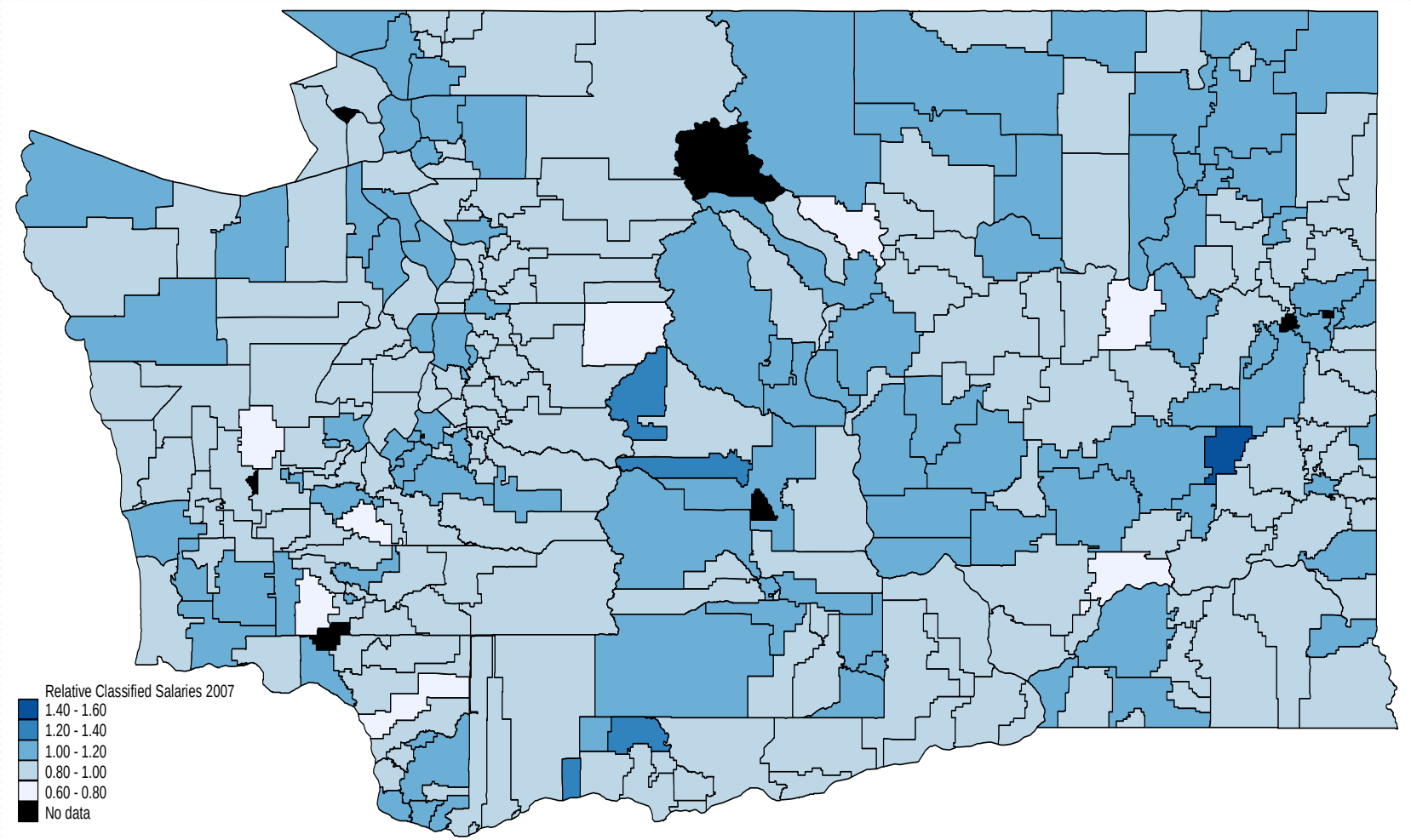
Other
Aides
Relative Classified Salaries

Relative Aide Salaries



Relative Other Classified Salaries



Conclusions

- Teaching salaries in Washington average 81 percent of the annual salary of comparable non-teachers
- Given the differences in the length of the working year between teaching and non-teaching professions, the gap between teaching and non-teaching wages is not large
  - The gap is narrower for beginning teachers than for more experienced teachers
  - The gap is much larger for math and science teachers

More Conclusions

- Teaching is more competitive with non-teaching occupations in rural and eastern Washington, and much less competitive with non-teaching occupations in the Kennewick, Bremerton and Seattle labor market areas
- Relative salaries for classified staff have no such geographic pattern

Still More Conclusions

- For teachers, relative salaries are more dispersed than prevailing salaries
- For classified staff there is substantially less variation in relative salaries than there is in the prevailing salaries.
- The smaller degree of dispersion in relative salaries suggests that classified staff salaries are more responsive to market conditions than are teaching salaries