



## Bureau Brief

### MEMORANDUM

To: Senator Jim Argue, Chair, Senate Interim Committee on Education  
Representative Joyce Elliott, Chair, House Interim Committee on  
Education

From: Jerri Derlikowski, Administrator, Bureau of Legislative Research

Date: August 22, 2006

Re: Teacher Salaries

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Responses to the following questions have been prepared to update and supplement the previous teacher salary information provided to this committee during the February, 2006 hearings. This information is prepared in partial fulfillment of the requirements of Act 57 of the Second Extraordinary Session of 2003.

1. How do Arkansas teacher salaries compare to surrounding states and states of the Southern Regional Education Board?
2. Has the disparity in teacher salaries within Arkansas increased or decreased in FY 2005-06?
3. How does the cost-of-living in Arkansas and surrounding states effect the value of Arkansas teacher salaries?
4. How do teacher salaries in Arkansas compare to other professions with similar educational requirements within the state?
5. What factor in school district finance most influences teacher salaries?

### BUREAU OF LEGISLATIVE RESEARCH

1. How do Arkansas teacher salaries compare to surrounding states and states of the Southern Regional Education Board?

Information previously provided to the committee was based on a report from the National Education Association (NEA) in June 2005. Information from a report by the American Federation of Teachers (AFT) was also reviewed. Those reports contained salary information from the 2004-05 school year. They have not been updated for 2005-06 at this time. Staff of the Policy Analysis and Research Section of the Bureau of Legislative Research updated the information for the 2005-06 school year by using information from websites of state departments of education and by contacting staff of the departments of education in these states. The following table is the result of that update with the best information available at this time.

### 2005-06 Teacher Salary Averages and Minimums

<b>Surrounding States</b>	<b>Average*</b>	<b>Minimum*</b>
Arkansas	\$42,931	\$27,940
Tennessee	\$42,537	\$27,810
Missouri	\$42,083	\$22,000
Texas	\$41,501	\$24,820
Mississippi	\$40,096	\$30,000
Louisiana	\$36,420	\$22,208
Oklahoma	\$36,681	\$28,000
<b>SREB States</b>		
Maryland	\$54,333	\$36,406
Georgia	\$48,246	\$28,767
Virginia	\$47,310	\$32,735
Kentucky	\$46,095	\$19,142
South Carolina	\$43,123	\$25,628
North Carolina	\$43,913	\$28,510
Arkansas	\$42,931	\$27,940
Florida	\$42,702	\$30,830
Tennessee	\$42,537	\$27,810
Texas	\$41,501	\$24,820
Alabama	\$40,347	\$29,538
Mississippi	\$40,096	\$30,000
West Virginia	\$39,583	\$28,090
Oklahoma	\$36,681	\$28,000
Louisiana	\$36,420	\$22,208
Delaware	\$35,874	\$25,422

\*Average teacher salary for all full-time teachers in the state during the school year 2005-06 and the minimum or lowest salary for a full-time teacher (i. e., for a teacher with a bachelors degree and 0 years of experience). Benefits not included except for Alabama. Librarians, counselors, etc are included for all states but Delaware and Florida. Extra duty pay, stipends, etc. are not included for any state except Arkansas.

2. Has the disparity in teacher salaries within Arkansas increased or decreased in FY 2005-06?

The disparity in beginning salaries has increased. The district with the lowest beginning salary in 2004-05 was \$27,500 and the highest was \$38,021 for a range of \$10,521. In 2005-06 the lowest beginning salary was \$27,940 and the highest was \$40,521 for a range of \$12,581. If the top three districts are removed from the list the range is \$8,060. There are 30 districts with \$27,940 as their beginning salary. The map on the following page shows the geographical relationship of districts with low beginning salaries to districts with higher beginning salaries.

The disparity in average salaries has decreased. The district with the lowest average salary in 2004-05 was \$30,092 and the highest was \$53,491 for a range of \$23,399. In 2005-06 the lowest average salary was \$33,474 and the highest was \$54,624 for a range of \$21,150. If the top three districts are removed from the list the range is \$16,478.

Data on the disparity in average teacher salaries by individual districts was available for the FY2004-05 school year for Kansas, Mississippi, Missouri and Tennessee. The disparity within those states ranged from \$40,736 in Missouri to \$10,993 in Mississippi.

**Map**

**Beginning Salary Rank  
By School District 2005-06**

3. How does the cost-of-living in Arkansas and surrounding states effect the value of Arkansas teacher salaries?

#### Comparable Wage Index Data from SREB/Contiguous States

State	CWI_2004	FY05-06 Avg Teacher Salary	Comparative Salary
Alabama	1.0802	\$40,347	\$37,351
Arkansas	1.0107	\$42,931	\$42,477
Delaware	1.247	\$35,874	\$28,768
Florida	1.1212	\$42,702	\$38,086
Georgia	1.2172	\$48,246	\$39,637
Kentucky	1.0893	\$46,095	\$42,316
Louisiana	1.0727	\$36,420	\$33,952
Maryland	1.3164	\$54,333	\$41,274
Mississippi	1.0192	\$40,096	\$39,341
Missouri*	1.1069	\$42,083	\$38,019
North Carolina	1.1705	\$43,913	\$37,516
Oklahoma	1.0391	\$36,681	\$35,301
South Carolina	1.1077	\$43,123	\$38,930
Tennessee	1.1348	\$42,537	\$37,484
Texas	1.2253	\$41,501	\$33,870
Virginia	1.3103	\$47,310	\$36,106
West Virginia	1.045	\$39,583	\$37,878

\* Missouri is not an SREB state but is contiguous.

CWI Source: Taylor, L.L., and Fowler, W.J., Jr. (2006). "A Comparable Wage Approach to Geographic Cost Adjustment (NCES 2006-321). U.S. Department of Education. Washington, D.C.: National Center for Education Statistics.

Teacher Salary Source: Phone survey and web page review by BLR staff.

The Comparable Wage Index (CWI) used for the table above was developed by the National Center for Education Statistics. The basic premise of a CWI is that all types of workers--including teachers--demand higher wages in areas with a higher cost of living. The CWI reflects regional variations in the salaries of college graduates who are not educators. Then the CWI can be used to measure the uncontrollable component of variations in the wages paid to educators. A state's CWI is a weighted average of the local wages within its borders.

4. How do teacher salaries in Arkansas compare to other professions with similar educational requirements within the state?

Selected 2005 Data from the Bureau of Labor Statistics for Arkansas

Profession	Salary
Civil Engineers	\$59,220
Computer Programmers	\$56,630
Loan Officers	\$51,180
Foresters	\$48,070
Insurance Underwriter	\$46,640
Accountants & Auditors	\$46,610
Librarians	\$41,600
Mental Health Counselors	\$41,190
Editors	\$41,080
Technical Writers	\$39,590
<b>Secondary School Teachers*</b>	<b>\$39,470</b>
Curators	\$37,870
Social Workers	\$37,600
Marriage and Family Therapists	\$36,730
Surveyor	\$36,610
Electrician	\$36,420
Interior Designers	\$32,900
Appraisers & Assessors	\$30,430
Licensed Practical Nurse	\$30,000
Preschool Teachers	\$18,600

Full report (51 pages) is available for review.

\*K-12 Teacher Salary was \$41,489 according to the 2004-05 Annual Statistical Report produced by the Arkansas Department of Education.

5. What factor in school district finance most influences teacher salaries?

**Regression Analyses of Teacher Salaries**

Project Summary

A collection of statistical data for each school district was compared to the 2004-05 district average teacher salary. The full dataset is included in Appendix 1. The most significant variable was the Pupil/Teacher ratio, which accounted for 38% of the disparity in teacher salaries during 2004-05. To state this in another way, districts with more pupils per teacher are able to pay higher teacher salaries. The pupil to teacher ratio is an efficiency measure. It has some relation to district size but it doesn't correlate perfectly. Some districts with large average daily membership (ADM) have low pupil to teacher ratios and some small districts have higher pupil to teacher ratios. Some examples include:

<u>District</u>	<u>ADM/Rank</u>	<u>Pupil/Teach.Ratio/Rank</u>	<u>Avg. Teacher Sal./Rank</u>
Texarkana	4,392.54- 18	13.08-135	\$36,201-191
Pine Bluff	5,677.69- 13	11.56-220	\$34,809-221
Palestine-Wheatley	620.25-186	17.20- 2	\$37,166-164
Quitman	585.18-192	16.40- 6	\$41,724- 42

Method Used for Analyses

To identify the significant predictors of teacher salaries for the fiscal year of 2004-05, correlations between potential predictors were examined to determine redundancy. The SPSS analysis is included in Appendix 2. Redundancy essentially means two or more predictors are measuring the same influence on salaries. To confirm these correlation analyses, formal tests of redundancy (tolerance and variance inflation factor) were made. These various diagnostic tests clearly indicated that nine predictors were redundant: 1) Total Debt Per ADM, 2) Value of 1 Mill per Student, 3) Actual Debt Payment, 4) Total Assessed Valuation for 2005, 5) Debt Mills Required, 6) Value of Excess Mills, 7) Total Debt Payment 2005-06, 8) 2005 Total Mills, and 9) Total Excess Mills Over URT.

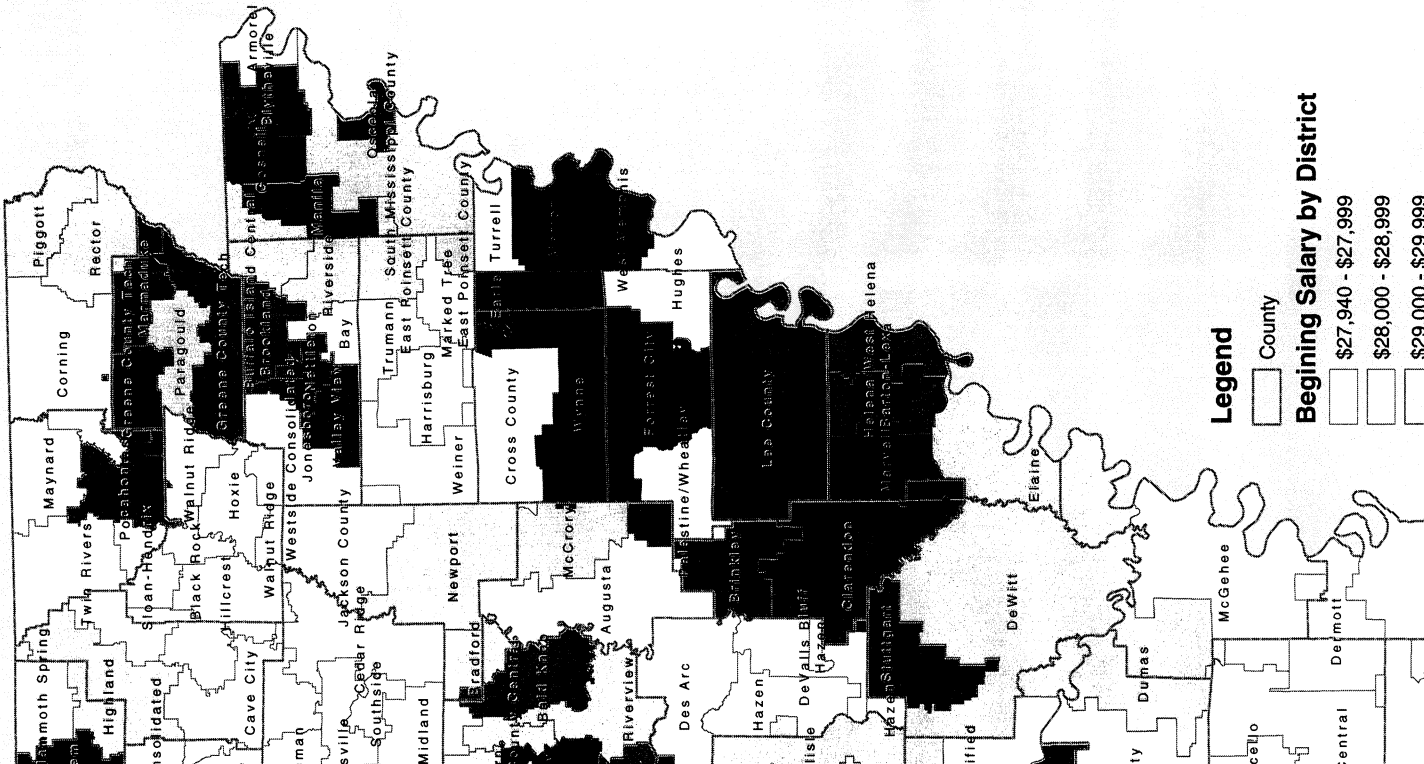
Findings

Removing the redundant predictors, left the following 5 predictors for consideration in the regression analysis: 1) Pupil/Teacher Ratio, 2) 3rd Quarter ADM 2004-05, 3) Value of Excess Debt Mills per ADM, 4) Debt Service Funding Support, and 5) Excess Debt Mills. The most significant predictor in the regression analysis was the Pupil/Teacher ratio, and it accounted for 38% of the variance in teacher salaries during 2004-05. The only other significant predictor was 3rd Quarter ADM, and it accounted for an additional 21% of the variance in salaries for teachers. Together, these two predictors account for 59% of the variance in teacher salaries.

Additional Consideration

To address concerns about removing redundant predictors, an analysis was done with all predictors considered. The results were nearly identical to those reported above. The same two significant predictors were identified, and the amounts of variance accounted for by each predictor are almost exactly the same as reported above.

# chool District 2005-06



### Legend

County

### Beginning Salary by District

\$27,940 - \$27,999

\$28,000 - \$28,999

\$29,000 - \$29,999

Rank	Salary	District	Rank	Salary	District
1	\$40,521	Springdale	159	\$28,500	Mount Ida
2	\$39,133	Bentonville	159	\$28,500	Harrisburg
3	\$37,000	Rogers	159	\$28,500	Trumann
4	\$36,000	West Memphis	159	\$28,500	Searcy County
5	\$35,986	Marion	159	\$28,500	Smackover
6	\$35,838	Silam Springs	174	\$28,450	Green Forest
7	\$35,385	Conway	175	\$28,400	Izard County Consol.
8	\$35,000	Gravette	176	\$28,375	Maynard
9	\$34,900	Greenwood	177	\$28,365	Spring Hill
10	\$34,420	Fayetteville	178	\$28,335	Sloan Hendrix
11	\$34,221	Hot Springs	179	\$28,325	Mountain View
12	\$34,000	Alma	179	\$28,325	Shirley
13	\$33,650	Watson Chapel	181	\$28,308	Colter
14	\$33,500	Earle	182	\$28,255	Nemo Vista
14	\$33,500	Forrest City	183	\$28,231	Gurdon
16	\$33,351	Cabot	184	\$28,230	Atkins
17	\$33,107	Marvell	185	\$28,219	Mammoth Spring
18	\$33,028	Gosnell	186	\$28,204	Parkers Chapel
19	\$33,000	Wynne	187	\$28,200	Hector
19	\$33,000	Bauxite	188	\$28,185	Blevins
19	\$33,000	Prairie Grove	189	\$28,175	Crossett
23	\$32,800	Viviana	190	\$28,169	Junction City
24	\$32,741	Huntsville	191	\$28,160	Gulman
25	\$32,580	Farmington	192	\$28,150	Batesville
26	\$32,500	Greenbrier	193	\$28,100	Hamburg
26	\$32,500	Searcy	193	\$28,100	Black Rock
28	\$32,492	White Hall	193	\$28,100	Hoxie
29	\$32,200	DeQueen	197	\$28,074	Guy-Perkins
30	\$32,150	Nashville	198	\$28,056	Cave City
31	\$32,100	Russellville	199	\$28,050	Corning
32	\$32,000	Mountain Home	199	\$28,050	Scranton
32	\$32,000	Van Buren	201	\$28,016	Jasper
32	\$32,000	Ozark	202	\$28,010	Prescott
32	\$32,000	Dollarway	203	\$28,006	Two Rivers
			204	\$28,000	Lakeside
			204	\$28,000	Heber Springs
			204	\$28,000	Westside Consol.
			204	\$28,000	Fondyce
			204	\$28,000	Diarks
			204	\$28,000	Mineral Springs
			204	\$28,000	Southside
			204	\$28,000	Westside
			204	\$28,000	Ashtown
			204	\$28,000	Centerpoint
			204	\$28,000	Murfreesboro
			204	\$28,000	Marked Tree
			204	\$28,000	Ouachita River
			204	\$28,000	Lockesburg
			204	\$28,000	Danville
			219	\$27,994	Bay
			219	\$27,994	DeValls Bluff
			221	\$27,980	Strong-Huttig
			222	\$27,940	Lead Hill
			222	\$27,940	Dermott
			222	\$27,940	Concord
			222	\$27,940	Wonderview
			222	\$27,940	Mulberry
			222	\$27,940	County Line
			222	\$27,940	Ouachita
			222	\$27,940	Cushman
			222	\$27,940	Midland
			222	\$27,940	Cedar Ridge
			222	\$27,940	Melbourne
			222	\$27,940	Altheimer-United















Table 1. Stepwise Regression Analysis

<u>Step</u>	<u>Predictor</u>	<u>Unstandardized Coefficient</u>	<u>Standardized Coefficient</u>	<u>t-test</u>	<u>Significance</u>
1	Pupil/teacher ratio	1392.46	.614	12.305	.000
2	Pupil/teacher ratio 3rd Quarter ADM	1121.61 0.67	.495 .478	11.826 11.429	.000 .000
<b>Summary Statistics</b>					
<b>Step</b>	<b>r</b>	<b>Adjusted r<sup>2</sup></b>	<b>r<sup>2</sup> change</b>	<b>F-change</b>	<b>Significance</b>
1	.61	.375	.375	151.41	.000
2	.77	.588	.214	130.62	.000

**Note: dependent variable:** Teacher Salaries for Fiscal Year 2004-05. Excluded variables shown in Table 2.

**Table 2. Variables Excluded by Stepwise Regression**

Step	Predictor	Standardize Coefficient	t-test	Significance
1	3rd Quarter ADM	.478	11.429	.000
	Value of Excess Debt Mills per ADM	.253	5.294	.000
	Debt Service Funding Support	.011	0.204	.839
	Excess Debt Mills	.078	1.576	.116
2	Value of Excess Debt Mills per ADM	.057	1.263	.208
	Debt Service Funding Support	.014	0.343	.732
	Excess Debt Mills	.011	0.271	.786

Note: **dependent variable:** Teacher Salaries for Fiscal Year 2004-05. Shown are variables excluded by the regression analysis in Table 1. Tables 1 and 2 are the same regression analysis.