



EXHIBIT E

Research Report



A Cross-State Comparison of Arkansas's Highway Financing and Infrastructure Quality

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A Cross-State Comparison of Arkansas's Highway Financing and Infrastructure Quality

Executive Summary

Arkansas's average highway funding has increased, in real terms, since 1982 an average of 3.10%. In a seven state sample that includes Arkansas and the six surrounding states, Arkansas's per capita highway funding ranks fourth and its funding per highway mile ranks last.

A comparison of road quality among the seven states in this sample indicates that Arkansas's road quality is among the best in the region. Arkansas ranks third among the surrounding states in overall road quality as measured by the International Roughness Index. Arkansas is below the national average in the percentage of roads that are rated "Mediocre" or "Poor," indicating that Arkansas's road quality is also better than the national average.

Funding and Road Quality Rankings

State	25-Year Change in Average Total Funding	25-Year Average Per Capita Funding	25-Year Average Funding Per Mile	Overall Road Quality
Arkansas	5	4	7	3
Louisiana	2	2	1	7
Mississippi	7	3	4	4
Missouri	4	5	5	2
Oklahoma	1	1	6	5
Tennessee	6	6	2	1
Texas	3	7	3	6

The table above provides a summary of highway funding and road quality rankings presented in this report. The 25-year average change in total funding, average per capita funding, and average funding per mile represent the measures used to compare Arkansas's highway funding with the surrounding states. The road quality ranking is used to make cross-state comparisons of overall road quality.

Arkansas Highway Facts

Total Arkansas public roadways ¹	99,558 miles
Rural roadway miles ¹	87,592 miles
Urban roadway miles ¹	11,966 miles
The annual average daily traffic per lane ¹	1,911 cars
The annual vehicle-miles traveled ¹	33,171,000 miles
Total Highway Department expenditures for fiscal year 2008 ²	\$978,320,514
Per capita Highway Department expenditures for fiscal year 2008	\$342.62
Highway Department expenditures per mile for fiscal year 2008	\$9,826.64

Arkansas and the Surrounding States: Comparative Data

	Arkansas	Louisiana	Mississippi	Missouri	Oklahoma	Tennessee	Texas
Population	2,810,872	4,287,768	2,910,540	5,842,719	3,579,212	6,038,803	23,507,783
Land Area (Square Miles)	52,075	43,566	46,914	68,898	68,679	41,219	261,914
Vehicle Miles Traveled (Billions)	33.0	45.5	41.5	68.8	48.7	70.6	238.3
State-Maintained Highway Miles	16,432	16,687	10,970	33,681	12,287	13,836	79,849
Total Highway Miles*	99,558	61,008	74,622	129,122	112,922	91,058	305,855

Source: Snyder, J. (2008)

**Source: Federal Highway Administration (2007)*

The table above presents comparative data on the seven states discussed in this report. Within this regional sample of states, Arkansas ranks seventh in total population, seventh in vehicle miles traveled, and fourth in the number of total highway miles.

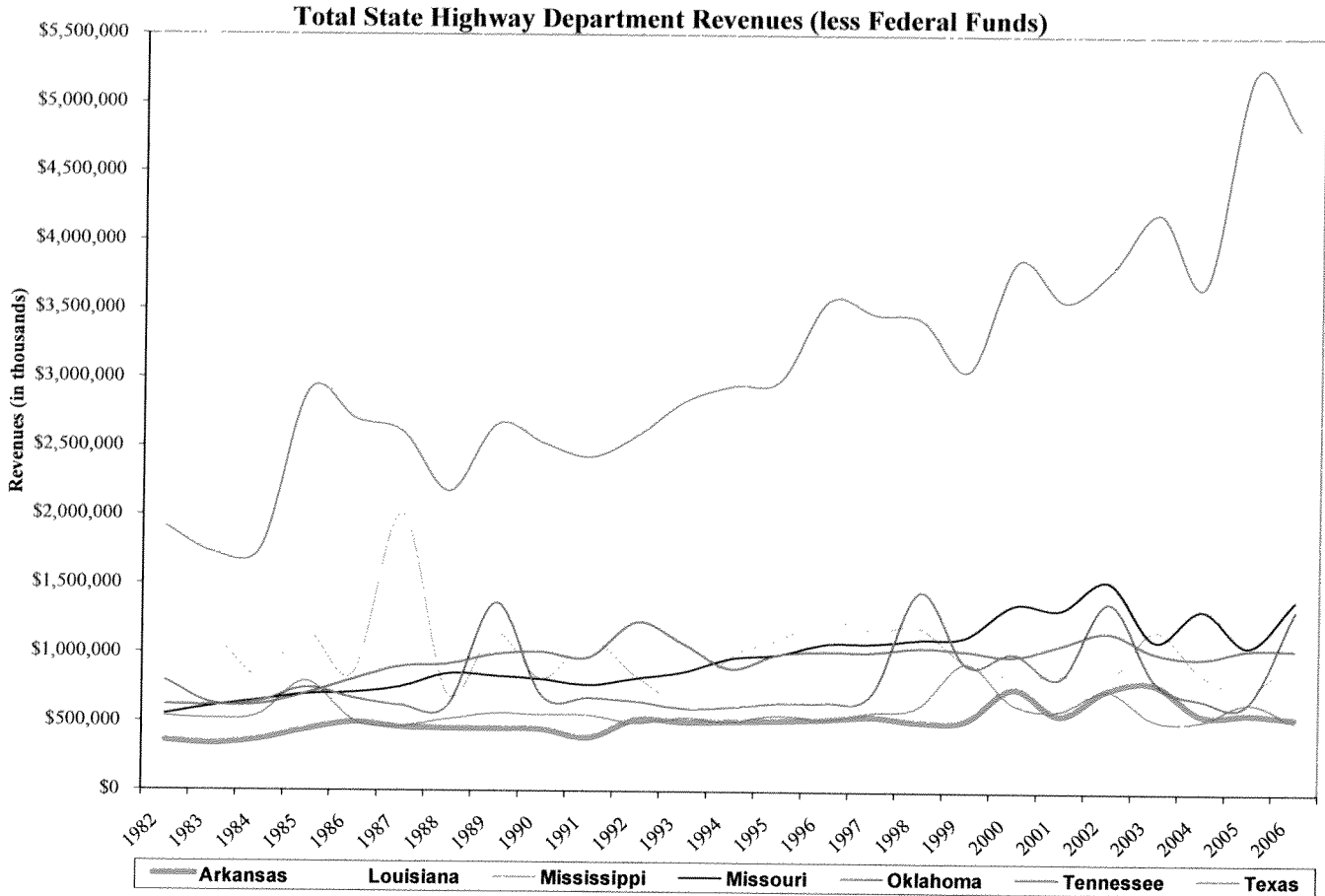
A Comparison of Arkansas's Highway Funding with the Surrounding States

The following section provides a comparison of Arkansas's Highway Department funding with the state agency funding in the surrounding states. A general overview of total highway funds for each state will be presented in order to understand the budget size differences among the states. In order to accurately compare all seven states, the highway funding for each state is then broken into funds per person (per capita) and funds per highway mile. In all cases, federal funding has been excluded from these values, thus the funding amounts presented below represent only state funding. This state-level funding includes fund balances from previous years, highway users revenues such as motor fuel taxes, appropriations from general funds, bond proceeds, payments received from local governments, and other miscellaneous state funding.

¹ Source: Federal Highway Administration (2007)

² Source: Bureau of Legislative Research (2008)

Total State Highway Funding from 1982-2006



25-Year Trends in Total Highway Funding

The chart above shows the trend in real³ total highway funding for Arkansas and the surrounding states over the last 25 years. Arkansas's real total highway funding has increased over this time period from \$355,250,000 in 1983 to \$548,555,000 in 2006. The next table presents the average real change in each state's highway funding over the 25 year period from 1982 to 2006.

25-Year Average Highway Funding and Average Change from 1982 to 2006

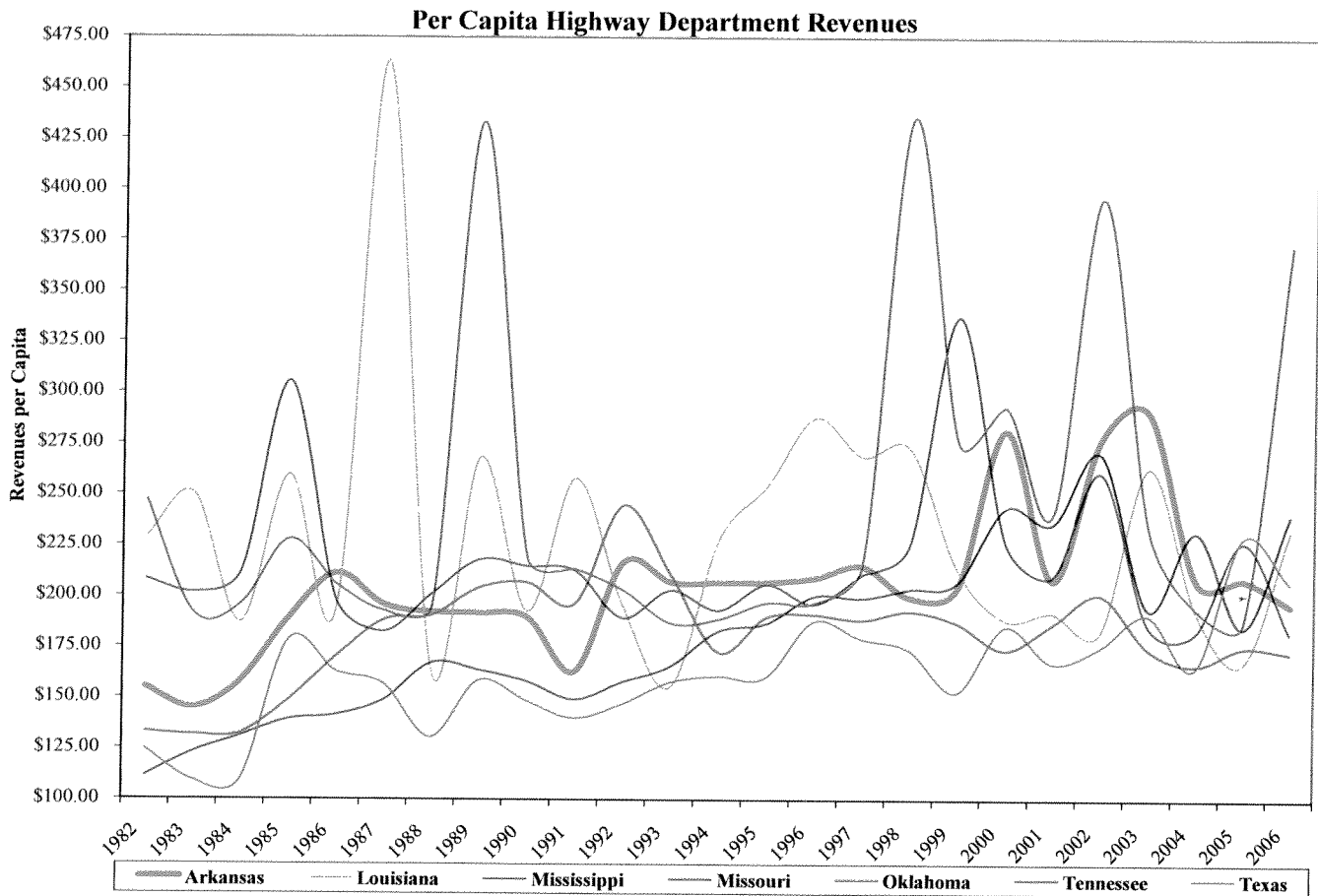
(in thousands)	<u>Arkansas</u>	<u>Louisiana</u>	<u>Mississippi</u>	<u>Missouri</u>	<u>Oklahoma</u>	<u>Tennessee</u>	<u>Texas</u>
25-Year Average Funding	\$ 514,051	\$1,003,046	\$ 581,889	\$ 975,812	\$ 816,366	\$ 949,696	\$3,099,940
25-Year Average Change in Funding	3.10%	6.89%	1.95%	4.70%	9.20%	2.64%	5.32%

Arkansas's highway funding, in real terms, has increased an average of 3.10% over the last 25 years. Four of the surrounding states, Louisiana, Missouri, Oklahoma, and Texas, have increased their highway funds at a greater rate than Arkansas. Only Mississippi and Tennessee have a lower average increase in real highway funding over the same 25 year period. **Table 1** in **Appendix A** presents each state's dollar value of highway funding for the period from 1982 to 2006.

³ All values presented are chained to year 2000 dollars. This normalization provides a "real" funding amount that is comparable across time. This "real" value is used in all funding calculations presented in this report.

Per Capita Highway Funding From 1982-2006

There are several ways in which to make cross state comparisons of highway funding. One method is to look at state highway funding per person, or per capita highway funding. The composite graph below shows the trend in state highway funding per capita over the last 25 years. **Table 2** in **Appendix A** presents each state's per capita highway funding for the period from 1982 to 2006.



Source: Federal Highway Administration (1982-2006)

25-Year Trends in Per Capita Highway Funding

As can be seen above, there are several periods of higher than normal funding for each state over this time period. Arkansas's per capita highway funding shows an upward trend increasing from \$154.84 per person in 1982 to \$195.62 per person in 2006, a 26.3% overall increase. Louisiana's per capita funding trend shows a slight decrease, whereas Missouri and Texas show moderate per capita funding increases over the last 25 years. Mississippi, Tennessee, and Oklahoma's per capita highway funding have, on average, remained relatively flat, but all three have periods of higher than normal per capita funding levels. In order to more accurately make comparisons across time, the table below lists each state's average per capita highway funding over the last 25 years.

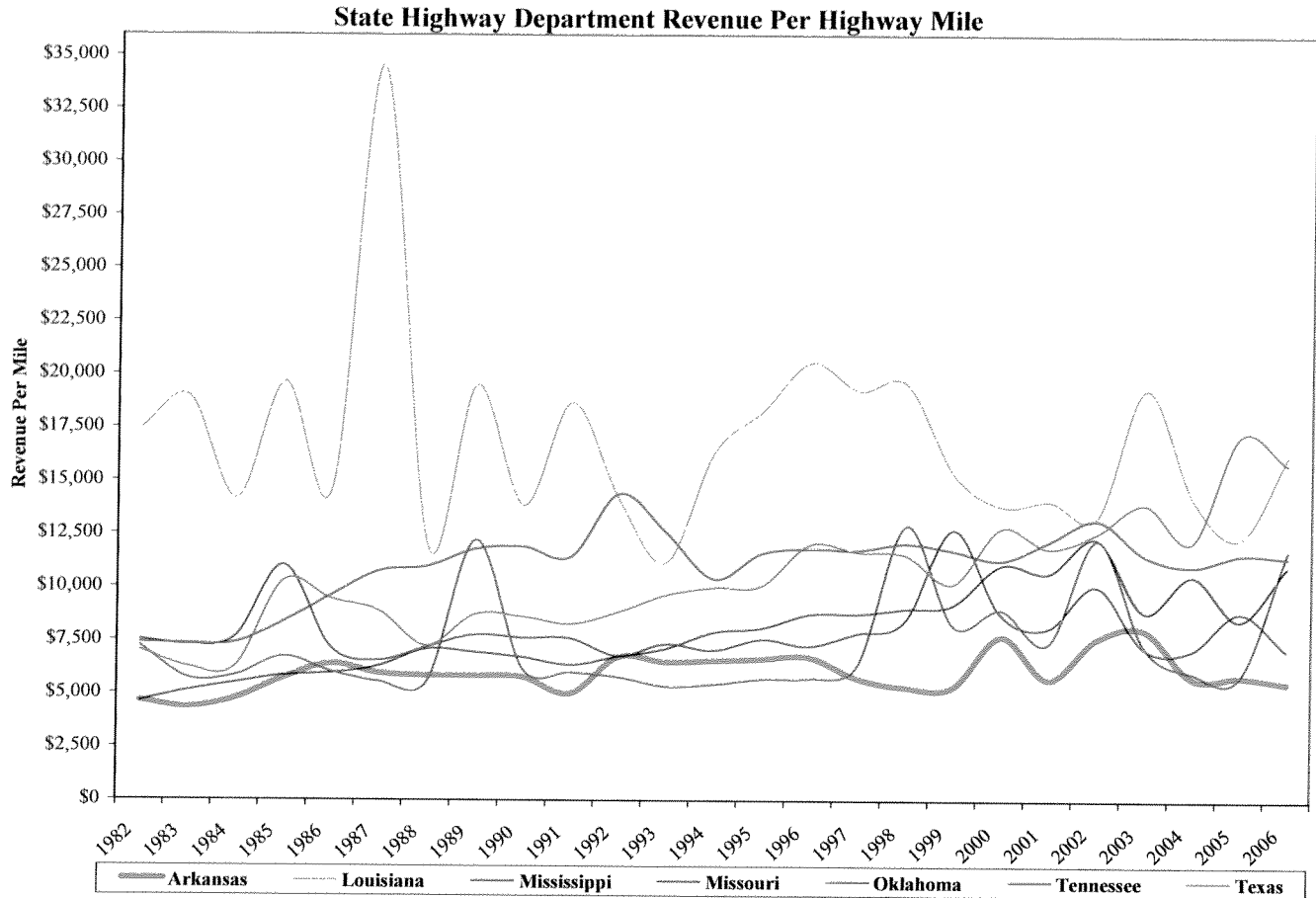
25-Year Average Per Capita Highway Funding

<u>Arkansas</u>	<u>Louisiana</u>	<u>Mississippi</u>	<u>Missouri</u>	<u>Oklahoma</u>	<u>Tennessee</u>	<u>Texas</u>
\$204.86	\$230.19	\$215.57	\$181.40	\$245.49	\$181.02	\$162.34

Oklahoma leads the region in highway funding per capita with \$245.49 in highway funding per person. Arkansas ranks fourth among the surrounding states in per capita highway funding with \$204.86 per person. Three states, Missouri, Tennessee, and Texas, have a lower level of highway funding per person than the state of Arkansas.

State Highway Funding Per Mile from 1982-2006

Another method for comparing highway funding across states is to use the amount of highway funding per mile. This value represents each state's highway funding per mile of roadway contained within the state. The composite graph below shows the trend in state highway funding per mile over the last 25 years for Arkansas and the six surrounding states. **Table 3** in **Appendix A** presents each state's highway funding per mile for the period from 1982 to 2006.



Source: Federal Highway Administration (1982-2006)

25-Year Trends in Highway Funding Per Mile

The 25-year trend in highway funding indicates that Arkansas's highway funding per mile has remained relatively constant. Louisiana shows a slight decline in highway funding per mile. Missouri, Tennessee, and Texas all show slight upward trends in funding per mile. Mississippi and Oklahoma's funding per mile trends, on average, are relatively flat. However, both states have multiple periods of higher than normal funding levels per highway mile.

25-Year Average Highway Funding Per Mile

<u>Arkansas</u>	<u>Louisiana</u>	<u>Mississippi</u>	<u>Missouri</u>	<u>Oklahoma</u>	<u>Tennessee</u>	<u>Texas</u>
\$5,997	\$16,853	\$7,987	\$7,961	\$7,286	\$11,024	\$10,463

The state of Louisiana leads the way in average funding per mile of roadway with \$16,853 per mile, followed by Tennessee and Texas. Arkansas's highway funding per mile is the lowest at \$5,997 per mile. For the region, the average highway funding per mile is \$9,653, which is \$3,656 per mile higher than Arkansas's average highway funding per mile.

A Comparison of Arkansas's Current Road Quality with the Surrounding States

The following section presents an analysis of Arkansas's current road quality as compared with the surrounding states. The road quality measurement used is an objective equipment-based measure reported to the Federal Highway Administration known as the International Roughness Index or IRI. The IRI is calculated based on data collected via an array of instruments. The IRI measure takes into account the vertical movement of a vehicle traveling over the surface of the road. This IRI value is presented in terms of the number of inches of vertical movement the vehicle experiences per mile of roadway traveled. The devices used to measure and calculate the IRI must be calibrated to Federal Highway Administration standards, thus ensuring a consistent measure regardless of the state conducting the testing. Due to the objective nature of the index, this measure will provide an accurate cross-state comparison of road quality. Using the IRI values, an IRI Score is calculated in order to rank Arkansas and the surrounding states. **Appendix B** contains tables of the IRI values for Arkansas and the surrounding states along with the formula by which the IRI Score was calculated. The maximum score is 1.00. The higher the score value, the higher the quality of the road.

**Rural Area-International
Roughness Index Score**

State	Score	Ranking
Arkansas	0.72	5
Louisiana	0.71	7
Mississippi	0.72	6
Missouri	0.75	2
Oklahoma	0.73	4
Tennessee	0.88	1
Texas	0.74	3

**Urban Area-International
Roughness Index Score**

State	Score	Ranking
Arkansas	0.64	4
Louisiana	0.59	7
Mississippi	0.67	3
Missouri	0.74	2
Oklahoma	0.63	5
Tennessee	0.81	1
Texas	0.62	6

As can be seen from the table above, Arkansas's road quality in rural areas ranks fifth among the seven states in this sample with a IRI score of 0.72. Arkansas's urban road quality is slightly better, ranking fourth among the seven states with an IRI score of 0.64. Tennessee ranks first in both urban and rural road quality. Louisiana's seventh place rank in both areas indicates that it has the worst roads among the states in our sample. The table below presents the overall scores for each of the states in our sample.

**Overall-International
Roughness Index Score**

State	Score	Ranking
Arkansas	0.667	3
Louisiana	0.581	7
Mississippi	0.652	4
Missouri	0.678	2
Oklahoma	0.643	5
Tennessee	0.750	1
Texas	0.618	6

Arkansas's overall road quality, as measured by the IRI Score, has an average score of .667, placing the state third among the seven states in our sample. Only two states rank above Arkansas in this sample: Tennessee and Missouri.

When comparing Arkansas's roads to the national average based on IRI quality categories, the state is slightly below the national average in the percentage of roads considered to be in the "Very Good" category, but is above the national average in the percentage in the "Good" category. Arkansas ranks below the national average in the percentage of roads that are rated "Mediocre" or "Poor." These findings indicate that Arkansas's road quality is also better than the national average as measured by the International Roughness Index.

Arkansas Road Quality Categories vs. The National Average

	Very Good	Good	Fair	Mediocre	Poor
Arkansas	11.39%	35.67%	39.28%	9.81%	3.86%
National Average⁴	13.00%	27.00%	41.00%	11.00%	7.00%

Overall Trends

There are important trends to consider when comparing highway funding and road quality. The state of Tennessee spends less per person and less per highway mile, but has the highest highway quality ranking. Louisiana leads the region in per highway mile funding and ranks second in funding per capita, but has the poorest quality roads based on our analysis. When comparing each of the funding measures reported above with the IRI road quality index, there does not appear to be a meaningful correlation between the two measures. This suggests that other factors are affecting road quality beyond the state highway funding level.

Conclusion

In conclusion, Arkansas's average highway funding has increased in real terms since 1982 an average of 3.10%. In a seven state sample that includes Arkansas and the six surrounding states, Arkansas's per capita highway funding ranks fourth and its funding per highway mile ranks last.

A comparison of road quality among the seven states in this sample indicates that Arkansas's road quality is among the best in the region. Arkansas ranks third among the surrounding states in overall road quality as measured by the International Roughness Index. Arkansas is below the national average in the percentage of roads that are rated "Mediocre" or "Poor," indicating that Arkansas's road quality is also better than the national average.

⁴ Source: American Society of Civil Engineers (2006)

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Appendix A

Table 1- Total State Highway Department Revenues (1982-2006)

(in thousands)

	Arkansas	Louisiana	Mississippi	Missouri	Oklahoma	Tennessee	Texas
1982	\$ 355,250	\$ 995,655	\$ 532,258	\$ 549,480	\$ 792,575	\$ 618,223	\$1,912,225
1983	\$ 334,450	\$1,099,371	\$ 518,360	\$ 608,395	\$ 630,415	\$ 613,842	\$1,724,961
1984	\$ 366,360	\$ 822,974	\$ 546,319	\$ 652,102	\$ 644,690	\$ 620,439	\$1,751,003
1985	\$ 439,572	\$1,144,147	\$ 791,017	\$ 696,255	\$ 745,456	\$ 700,704	\$2,905,265
1986	\$ 492,025	\$ 851,512	\$ 513,420	\$ 710,992	\$ 668,885	\$ 805,896	\$2,700,180
1987	\$ 458,207	\$2,012,472	\$ 472,891	\$ 752,716	\$ 618,504	\$ 900,004	\$2,606,715
1988	\$ 449,823	\$ 697,819	\$ 518,460	\$ 849,300	\$ 617,111	\$ 918,113	\$2,177,866
1989	\$ 449,371	\$1,140,292	\$ 560,880	\$ 833,364	\$1,364,676	\$ 990,713	\$2,665,797
1990	\$ 445,088	\$ 811,623	\$ 552,481	\$ 809,058	\$ 687,407	\$1,007,203	\$2,525,853
1991	\$ 385,996	\$1,093,084	\$ 550,940	\$ 769,415	\$ 675,643	\$ 970,801	\$2,428,187
1992	\$ 518,170	\$ 832,721	\$ 494,112	\$ 819,447	\$ 650,718	\$1,226,069	\$2,593,288
1993	\$ 501,218	\$ 664,751	\$ 534,821	\$ 866,751	\$ 603,127	\$1,069,756	\$2,839,261
1994	\$ 506,423	\$ 980,845	\$ 514,205	\$ 965,635	\$ 613,089	\$ 890,009	\$2,946,152
1995	\$ 512,998	\$1,099,489	\$ 553,737	\$ 993,495	\$ 642,924	\$ 994,264	\$2,991,939
1996	\$ 523,330	\$1,248,100	\$ 531,706	\$1,074,056	\$ 647,743	\$1,014,768	\$3,568,492
1997	\$ 541,988	\$1,169,017	\$ 575,480	\$1,076,878	\$ 714,077	\$1,012,846	\$3,469,852
1998	\$ 506,222	\$1,189,502	\$ 619,729	\$1,107,477	\$1,453,596	\$1,046,228	\$3,426,458
1999	\$ 521,133	\$ 932,906	\$ 934,547	\$1,131,696	\$ 926,087	\$1,024,900	\$3,065,133
2000	\$ 752,098	\$ 841,928	\$ 644,754	\$1,362,566	\$1,010,998	\$ 987,452	\$3,860,189
2001	\$ 558,960	\$ 855,266	\$ 598,992	\$1,330,518	\$ 834,612	\$1,072,282	\$3,569,047
2002	\$ 749,751	\$ 814,037	\$ 745,292	\$1,533,366	\$1,379,445	\$1,163,972	\$3,801,337
2003	\$ 789,008	\$1,177,155	\$ 532,729	\$1,104,904	\$ 815,624	\$1,019,538	\$4,212,491
2004	\$ 568,508	\$ 863,155	\$ 525,613	\$1,330,238	\$ 681,230	\$ 981,358	\$3,695,078
2005	\$ 576,774	\$ 751,354	\$ 656,833	\$1,067,761	\$ 661,299	\$1,047,133	\$5,226,432
2006	\$ 548,555	\$ 986,968	\$ 527,655	\$1,399,441	\$1,329,223	\$1,045,883	\$4,835,295

Source: Federal Highway Administration (1982-2006)

Note: All values are chained to 2000 dollars.

Appendix A

Table 2- Per Capita State Highway Department Revenues (1982-2006)

	Arkansas	Louisiana	Mississippi	Missouri	Oklahoma	Tennessee	Texas
1982	\$154.84	\$228.75	\$208.18	\$111.47	\$247.21	\$133.06	\$124.73
1983	\$145.05	\$250.12	\$201.88	\$123.06	\$191.59	\$131.73	\$109.51
1984	\$157.93	\$187.02	\$211.91	\$131.07	\$196.22	\$132.38	\$109.39
1985	\$188.90	\$259.55	\$305.64	\$139.24	\$227.88	\$148.60	\$178.54
1986	\$210.99	\$193.22	\$197.96	\$141.55	\$205.64	\$170.07	\$163.04
1987	\$195.62	\$463.26	\$182.69	\$148.86	\$192.67	\$188.17	\$156.83
1988	\$192.01	\$162.70	\$200.93	\$167.13	\$194.85	\$190.38	\$130.67
1989	\$191.52	\$268.12	\$217.88	\$163.54	\$433.19	\$204.08	\$158.61
1990	\$189.34	\$192.33	\$214.70	\$158.11	\$218.53	\$206.51	\$148.70
1991	\$162.82	\$257.75	\$212.62	\$149.18	\$213.37	\$196.24	\$140.03
1992	\$216.44	\$194.98	\$189.30	\$157.78	\$203.08	\$244.53	\$146.92
1993	\$206.80	\$155.14	\$202.92	\$165.48	\$186.79	\$210.35	\$157.77
1994	\$206.65	\$227.76	\$193.06	\$182.84	\$188.87	\$172.38	\$160.66
1995	\$206.84	\$254.04	\$205.79	\$186.59	\$196.88	\$189.70	\$160.17
1996	\$208.93	\$287.66	\$196.21	\$200.09	\$196.90	\$190.98	\$187.75
1997	\$214.73	\$268.65	\$210.66	\$199.16	\$215.46	\$188.32	\$179.27
1998	\$199.44	\$272.65	\$225.25	\$203.67	\$435.28	\$192.58	\$173.82
1999	\$204.26	\$213.38	\$337.55	\$206.95	\$275.78	\$186.90	\$152.92
2000	\$281.33	\$188.39	\$226.65	\$243.52	\$292.99	\$173.56	\$185.12
2001	\$207.82	\$191.75	\$209.95	\$235.82	\$240.98	\$186.37	\$167.29
2002	\$277.49	\$182.31	\$260.77	\$270.17	\$396.06	\$200.72	\$175.07
2003	\$290.30	\$263.14	\$185.83	\$193.69	\$233.29	\$174.29	\$190.94
2004	\$207.47	\$192.33	\$182.21	\$231.64	\$193.97	\$166.14	\$164.78
2005	\$208.30	\$167.13	\$226.63	\$184.57	\$187.33	\$175.01	\$229.12
2006	\$195.62	\$232.58	\$182.16	\$239.92	\$372.53	\$172.35	\$206.92

Source: Federal Highway Administration (1982-2006)

Note: All values are chained to 2000 dollars.

Appendix A

Table 3- State Highway Department Revenues Per Highway Mile (1982-2006)

	Arkansas	Louisiana	Mississippi	Missouri	Oklahoma	Tennessee	Texas
1982	\$4,635	\$17,488	\$7,519	\$4,633	\$7,213	\$7,381	\$7,019
1983	\$4,341	\$18,951	\$7,293	\$5,125	\$5,727	\$7,326	\$6,255
1984	\$4,755	\$14,159	\$7,664	\$5,485	\$5,850	\$7,377	\$6,280
1985	\$5,707	\$19,645	\$11,032	\$5,843	\$6,736	\$8,359	\$10,293
1986	\$6,386	\$14,624	\$7,149	\$5,955	\$6,026	\$9,611	\$9,442
1987	\$5,944	\$34,552	\$6,562	\$6,289	\$5,568	\$10,754	\$8,881
1988	\$5,835	\$11,944	\$7,184	\$7,084	\$5,539	\$10,977	\$7,249
1989	\$5,827	\$19,485	\$7,756	\$6,940	\$12,221	\$11,783	\$8,721
1990	\$5,774	\$13,845	\$7,618	\$6,713	\$6,150	\$11,900	\$8,610
1991	\$5,002	\$18,674	\$7,596	\$6,356	\$6,019	\$11,441	\$8,273
1992	\$6,715	\$14,155	\$6,788	\$6,749	\$5,788	\$14,400	\$8,841
1993	\$6,493	\$11,154	\$7,343	\$7,117	\$5,363	\$12,580	\$9,653
1994	\$6,559	\$16,342	\$7,053	\$7,895	\$5,457	\$10,406	\$10,004
1995	\$6,643	\$18,289	\$7,575	\$8,102	\$5,714	\$11,615	\$10,102
1996	\$6,727	\$20,573	\$7,264	\$8,750	\$5,749	\$11,828	\$12,045
1997	\$5,744	\$19,259	\$7,867	\$8,772	\$6,342	\$11,774	\$11,697
1998	\$5,322	\$19,581	\$8,455	\$9,015	\$12,918	\$12,081	\$11,553
1999	\$5,342	\$15,337	\$12,746	\$9,213	\$8,231	\$11,745	\$10,200
2000	\$7,706	\$13,825	\$8,772	\$11,074	\$8,976	\$11,296	\$12,823
2001	\$5,696	\$14,060	\$8,127	\$10,702	\$7,406	\$12,209	\$11,866
2002	\$7,613	\$13,364	\$10,085	\$12,298	\$12,258	\$13,184	\$12,597
2003	\$8,007	\$19,318	\$7,189	\$8,862	\$7,245	\$11,518	\$13,949
2004	\$5,765	\$14,164	\$7,091	\$10,564	\$6,044	\$11,028	\$12,188
2005	\$5,846	\$12,328	\$8,854	\$8,486	\$5,855	\$11,577	\$17,183
2006	\$5,541	\$16,200	\$7,091	\$11,001	\$11,754	\$11,441	\$15,839

Source: Federal Highway Administration (1982-2006)

Note: All values are chained to 2000 dollars

Appendix B

The tables below present the International Roughness Index for Arkansas and the surrounding states for each road type. The quality ranking factor varies depending on the classification of the road. The formula for the score calculation is listed on page B-3 of this appendix. The ranking for each state is based on the score for each road type.

Rural Area- International Roughness Index (inches per mile)⁵

INTERSTATE

State	Very Good	Good	Fair	Mediocre		Poor			Total	Score*	Rank
	< 60	60-94	95-119	120-144	145-170	171-194	195-220	>220	Reported		
Arkansas	175	188	55	16	8	11	4	3	460	0.81	3
Louisiana	163	140	76	60	1	13	16	6	475	0.74	7
Mississippi	81	317	43	33	14	4	-	1	493	0.77	6
Missouri	315	380	19	4	3	-	-	-	721	0.88	2
Oklahoma	188	351	94	22	21	7	-	-	683	0.80	4
Tennessee	574	96	9	2	6	-	1	1	689	0.96	1
Texas	428	1,262	265	95	32	8	1	-	2,091	0.79	5

OTHER PRINCIPAL ARTERIAL

State	Very Good	Good	Fair			Mediocre		Poor	Total	Score*	Rank
	< 60	60-94	95-119	120-144	145-170	171-194	195-220	>220	Reported		
Arkansas	167	956	683	264	108	30	13	10	2,231	0.71	5
Louisiana	79	386	213	123	92	39	26	22	980	0.69	7
Mississippi	274	1,060	193	211	70	33	35	9	1,885	0.76	2
Missouri	456	1,300	600	416	212	90	36	10	3,120	0.73	4
Oklahoma	249	834	617	280	125	82	71	59	2,317	0.69	6
Tennessee	823	859	137	31	10	3	2	6	1,871	0.87	1
Texas	685	3,462	1,950	610	186	61	42	5	7,001	0.73	3

MINOR ARTERIAL

State	Very Good	Good	Fair			Mediocre		Poor	Total	Score*	Rank
	< 60	60-94	95-119	120-144	145-170	171-194	195-220	>220	Reported		
Arkansas	2	909	1,082	545	251	157	-	7	2,953	0.65	5
Louisiana	80	829	248	70	200	52	40	70	1,589	0.70	2
Mississippi	92	1,137	912	486	294	529	103	142	3,695	0.62	7
Missouri	76	779	2,007	721	110	137	121	10	3,961	0.63	6
Oklahoma	132	1,216	699	277	174	66	97	25	2,686	0.69	3
Tennessee	998	1,418	405	298	13	8	-	60	3,200	0.81	1
Texas	432	3,836	4,026	1,124	358	159	5	62	10,002	0.69	4

⁵ Source: Federal Highway Administration (2007)

Appendix B

Urban Area- International Roughness Index (inches per mile)⁶

INTERSTATE

State	Very Good	Good	Fair	Mediocre		Poor			Total	Score*	Rank
	< 60	60-94	95-119	120-144	145-170	171-194	195-220	>220	Reported		
Arkansas	24	93	32	17	16	8	2	4	196	0.68	4
Louisiana	52	82	53	53	54	11	7	5	317	0.62	7
Mississippi	24	90	36	23	16	5	3	10	207	0.66	5
Missouri	129	249	43	20	7	4	4	3	459	0.80	2
Oklahoma	48	109	29	22	14	7	7	13	249	0.69	3
Tennessee	213	151	28	14	6	3	1	1	417	0.86	1
Texas	47	424	258	179	85	41	9	3	1,046	0.63	6

OTHER FREEWAYS AND EXPRESSWAYS

State	Very Good	Good	Fair			Mediocre		Poor	Total	Score*	Rank
	< 60	60-94	95-119	120-144	145-170	171-194	195-220	>220	Reported		
Arkansas	9	32	16	8	14	9	6	6	100	0.65	6
Louisiana	-	18	6	10	-	8	-	2	44	0.63	7
Mississippi	13	32	8	6	3	6	-	1	69	0.74	3
Missouri	70	196	69	35	11	9	3	3	396	0.76	2
Oklahoma	7	100	21	22	14	5	8	14	191	0.68	4
Tennessee	61	44	21	12	4	2	1	1	146	0.82	1
Texas	39	445	336	231	117	50	15	7	1,240	0.67	5

OTHER PRINCIPAL ARTERIAL

State	Very Good	Good	Fair			Mediocre		Poor	Total	Score*	Rank
	< 60	60-94	95-119	120-144	145-170	171-194	195-220	>220	Reported		
Arkansas	9	123	153	128	77	54	35	33	612	0.60	4
Louisiana	29	178	190	120	112	118	94	172	1,013	0.54	6
Mississippi	34	239	179	189	127	90	67	60	985	0.61	3
Missouri	60	277	204	165	86	40	36	50	918	0.65	2
Oklahoma	30	150	194	152	138	100	92	183	1,039	0.53	7
Tennessee	301	628	248	153	86	40	32	57	1,545	0.74	1
Texas	101	877	1,097	916	642	474	400	610	5,117	0.56	5

⁶ Source: Federal Highway Administration (2007)

Appendix B

Score Value Calculation

***The score value is calculated as follows:**

First the IRI levels are translated into a scale of 1-5 where 5 represents the Very Good category and 1 represents the Poor category.

Then for each state, the IRI value for each category is multiplied by the category value (1-5) and summed to get an actual IRI score.

The weighted total is then divided by the state's total IRI miles reported multiplied by 5 (representing the maximum score a state could receive).

Mathematically:

Score = Actual IRI Score ÷ Perfect IRI Score

Where Actual IRI Score = $\sum_{i=1}^n (\text{Category Code}) * (\text{IRI Value})$

And Perfect IRI Score = (Total Reported IRI)*5

$$\Rightarrow \text{Score} = \frac{\sum_{i=1}^n [(\text{Category Code}) * (\text{IRI Value})]}{(\text{Total Reported IRI}) * 5}$$

A score value of 1 represents a perfect score.