



Arkansas Economic
Development Institute

Accounting for Population Changes
in Arkansas' Metropolitan Area Counties
Components of Population Change

What Do They Tell Us?

YourAEDI.com

**Accounting for Population Changes in Arkansas Metropolitan Area Counties:
Components of Population Change
What Do They Tell Us?**

By

Blake Hamilton, Alison Wiley, and Gregory L. Hamilton, Ph.D.
Demographic Research at the Institute for Economic Advancement
College of Business, University of Arkansas at Little Rock

April 11, 2017

IEA Publication Number: 07-17

The US Census recently released the April 1, 2010 to July 1, 2016 population estimates and components of population change. This report analyzes population change within the individual counties found within Arkansas's Metropolitan Statistical Areas (MSAs), and focuses on gleaning relevant information about how the populations of Arkansas cities has grown over this 6.25 year period. The data release is available at the Institute for Economic Advancement's website.¹

Estimates of Arkansas MSA counties Population Growth: April 1, 2010 to July 1, 2016

Table 1 summarizes the population growth and decline for MSA counties. The table shows the 2010 population estimate base, the 2016 population estimate, and the percent change in the population estimates between the two periods. Benton County saw the highest population growth with a 2.50% annual rate of growth. Washington County had the second highest annual growth at 1.88%. Jefferson County had the largest population loss at -1.60%. Overall, the MSA counties experienced 0.58% annual growth between the 2010 base estimate and 2016 estimate.

Components of Population Change

Natural increase within a county's population combined with the net migration into and out of a county are key components of population change. Natural increase describes the number of births and deaths over a period of time. The amount of births depends of the age of women within a population, their fertility rate, and many other factors that affect a county's gender and age distributions. The amount of deaths depends on a county's age distribution health of residents, healthcare access levels, and other healthcare factors affect a county's health outcomes.

Net migration is determined by the amount of international and domestic migrants flowing into and out of a county. Domestic migration is the difference between those already living within the United States moving into or leaving a given county. International migrants are those entering the United States and moving into or leaving a given county.

¹ <http://iea.ualr.edu/population-estimates-a-projections/830-county-level-population-estimates-current-series.html#comp>

Table 1					
Arkansas MSA County: Population Change April 1, 2010 to July 1, 2016					
County	April 1, 2010 Estimates Base	July 1, 2016 Estimate	% Change	Annual Compound Rate of Growth	County's Share of MSAs Population Change
Fayetteville-Springdale-Rogers, AR-MO Metro Area	463,210	525,032	13.35%	2.02%	100%
Benton County, Arkansas	221,364	258,291	16.68%	2.50%	60%
Madison County, Arkansas	15,720	16,072	2.24%	0.35%	1%
McDonald County, Missouri	23,083	22,620	-2.01%	-0.32%	-1%
Washington County, Arkansas	203,043	228,049	12.32%	1.88%	40%
Fort Smith, AR-OK Metro Area	280,547	281,227	0.24%	0.04%	100%
Crawford County, Arkansas	61,948	62,267	0.51%	0.08%	47%
Sebastian County, Arkansas	125,776	127,793	1.60%	0.25%	297%
Le Flore County, Oklahoma	50,384	49,873	-1.01%	-0.16%	-75%
Sequoyah County, Oklahoma	42,439	41,294	-2.70%	-0.44%	-168%
Hot Springs, AR Metro Area	95,995	97,477	1.54%	0.25%	100%
Garland County, Arkansas	95,995	97,477	1.54%	0.25%	100%
Jonesboro, AR Metro Area	121,026	129,858	7.30%	1.13%	100%
Craighead County, Arkansas	96,443	105,835	9.74%	1.50%	106%
Poinsett County, Arkansas	24,583	24,023	-2.28%	-0.37%	-6%
Little Rock-North Little Rock-Conway, AR Metro Area	699,819	734,622	4.97%	0.78%	100%
Faulkner County, Arkansas	113,242	122,227	7.93%	1.23%	26%
Grant County, Arkansas	17,853	18,082	1.28%	0.20%	1%
Lonoke County, Arkansas	68,354	72,228	5.67%	0.89%	11%
Perry County, Arkansas	10,441	10,132	-2.96%	-0.48%	-1%
Pulaski County, Arkansas	382,788	393,250	2.73%	0.43%	30%
Saline County, Arkansas	107,141	118,703	10.79%	1.65%	33%
Memphis, TN-MS-AR Metro Area	1,324,824	1,342,842	1.36%	0.22%	100%
Crittenden County, Arkansas	50,902	49,235	-3.27%	-0.53%	-9%
Benton County, Mississippi	8,730	8,264	-5.34%	-0.87%	-3%
DeSoto County, Mississippi	161,264	175,611	8.90%	1.37%	80%
Marshall County, Mississippi	37,139	35,801	-3.60%	-0.59%	-7%
Tate County, Mississippi	28,882	28,201	-2.36%	-0.38%	-4%
Tunica County, Mississippi	10,778	10,234	-5.05%	-0.83%	-3%
Fayette County, Tennessee	38,439	39,590	2.99%	0.47%	6%
Shelby County, Tennessee	927,684	934,603	0.75%	0.12%	38%
Tipton County, Tennessee	61,006	61,303	0.49%	0.08%	2%
Pine Bluff, AR Metro Area	100,258	91,962	-8.27%	-1.37%	100%
Cleveland County, Arkansas	8,689	8,241	-5.16%	-0.84%	5%
Jefferson County, Arkansas	77,435	70,016	-9.58%	-1.60%	89%
Lincoln County, Arkansas	14,134	13,705	-3.04%	-0.49%	5%
Texarkana, TX-AR Metro Area	149,195	150,098	0.61%	0.10%	100%
Little River County, Arkansas	13,168	12,451	-5.45%	-0.89%	-79%
Miller County, Arkansas	43,462	43,787	0.75%	0.12%	36%
Bowie County, Texas	92,565	93,860	1.40%	0.22%	143%
Total Population	3,234,874	3,353,118	3.66%	0.58%	

Table 2 breaks the population estimate down into components of population change. An additional measurement has been added within the table; the residual measure is an accounting for the number of people who were unidentified and uncategorized by the Census. For several counties, the residuals account for a significant share of the population change. For example, 4% of Crittenden County's population change was due to the residuals. The interaction between natural increase and net migration resulted in a population loss in 12 of the 32 counties that make up the MSAs. Out of these 12 counties, 10 are located in Arkansas. Eighteen MSA counties (13 in Arkansas) saw population increases during the 6.25 year period.

Natural Increase

Table 3 breaks down the population components by births and deaths. Birth and death rates per 1,000 people are also reported for comparative reasons. For fast growing counties such as Benton and Washington, the number of births far outpaces the number of deaths. For example, Benton County the number of births (21,256) was twice as high as the number of deaths (10,351). A county with the number of deaths above births points to a larger number of elderly. This is the case of Garland County where the city of Hot Springs has a large retirement community. Conversely, a county with a high rate of natural increase (birth rate) could be due to a higher proportion of women within child bearing age.

Net Migration

Table 4 describes the different components of net migration for the counties. Twenty-one counties (10 in Arkansas) lost population due to net outmigration. Jefferson County saw the highest rate of outmigration due to a large outflow of domestic migrants. Eleven counties (9 in Arkansas) experienced population gains due to net migration. Benton County had the highest positive net migration levels and the highest gains in domestic migration. Pulaski County, although seeing a decrease in domestic migration, experienced the highest amount of international immigration.

Table 2							
Arkansas Counties Components of Population Change April 1, 2010 to July 1, 2016							
Counties	Population Change	Natural Increase	Net Migration	Residual	% NI of Population Change	% NM of Population Change	Residual Change
Fayetteville-Springdale-Rogers, AR-MO Metro Area	61,822	22,715	38,174	933	37%	62%	2%
Benton County, Arkansas	36,927	10,905	25,362	660	30%	69%	2%
Madison County, Arkansas	352	131	239	-18	37%	68%	-5%
McDonald County, Missouri	-463	581	-1,002	-42	-125%	216%	9%
Washington County, Arkansas	25,006	11,098	13,575	333	44%	54%	1%
Fort Smith, AR-OK Metro Area	680	3,676	-2,895	-101	541%	-426%	-15%
Crawford County, Arkansas	319	1,000	-650	-31	313%	-204%	-10%
Sebastian County, Arkansas	2,017	2,912	-871	-24	144%	-43%	-1%
Le Flore County, Oklahoma	-511	31	-500	-42	-6%	98%	8%
Sequoyah County, Oklahoma	-1,145	-267	-874	-4	23%	76%	0%
Hot Springs, AR Metro Area	1,482	-1,572	3,298	-244	-106%	223%	-16%
Garland County, Arkansas	1,482	-1,572	3,298	-244	-106%	223%	-16%
Jonesboro, AR Metro Area	8,832	3,364	5,348	120	38%	61%	1%
Craighead County, Arkansas	9,392	3,552	5,705	135	38%	61%	1%
Poinsett County, Arkansas	-560	-188	-357	-15	34%	64%	3%
Little Rock-North Little Rock-Conway, AR Metro Area	34,803	21,219	13,771	-187	61%	40%	-1%
Faulkner County, Arkansas	8,985	4,202	4,640	143	47%	52%	2%
Grant County, Arkansas	229	81	156	-8	35%	68%	-3%
Lonoke County, Arkansas	3,874	2,132	1,717	25	55%	44%	1%
Perry County, Arkansas	-309	-90	-245	26	29%	79%	-8%
Pulaski County, Arkansas	10,462	12,871	-1,876	-533	123%	-18%	-5%
Saline County, Arkansas	11,562	2,023	9,379	160	17%	81%	1%
Memphis, TN-MS-AR Metro Area	18,018	46,840	-28,125	-697	260%	-156%	-4%
Crittenden County, Arkansas	-1,667	2,065	-3,659	-73	-124%	219%	4%
Benton County, Mississippi	-466	-31	-431	-4	7%	92%	1%
DeSoto County, Mississippi	14,347	5,298	8,879	170	37%	62%	1%
Marshall County, Mississippi	-1,338	196	-1,532	-2	-15%	114%	0%
Tate County, Mississippi	-681	343	-1,007	-17	-50%	148%	2%
Tunica County, Mississippi	-544	605	-1,151	2	-111%	212%	0%
Fayette County, Tennessee	1,151	333	686	132	29%	60%	11%
Shelby County, Tennessee	6,919	36,853	-28,936	-998	533%	-418%	-14%
Tipton County, Tennessee	297	1,178	-974	93	397%	-328%	31%
Pine Bluff, AR Metro Area	-8,296	550	-8,901	55	-7%	107%	-1%
Cleveland County, Arkansas	-448	-74	-395	21	17%	88%	-5%
Jefferson County, Arkansas	-7,419	586	-8,051	46	-8%	109%	-1%
Lincoln County, Arkansas	-429	38	-455	-12	-9%	106%	3%
Texarkana, TX-AR Metro Area	903	2,346	-1,285	-158	260%	-142%	-17%
Little River County, Arkansas	-717	-134	-572	-11	19%	80%	2%
Miller County, Arkansas	325	1,098	-692	-81	338%	-213%	-25%
Bowie County, Texas	1,295	1,382	-21	-66	107%	-2%	-5%
Total Population	238,155	196,211	38,770	-558	82%	16%	-0.23%

Table 3						
Components of Natural Increases in Population						
County	Estimate			Rates per 1000		
	NI	Births	Deaths	NI	Births	Deaths
Fayetteville-Springdale-Rogers, AR-MO Metro Area	22,715	44,433	21,718	49.04	95.92	46.89
Benton County, Arkansas	10,905	21,256	10,351	49.26	96.02	46.76
Madison County, Arkansas	131	1,201	1,070	8.33	76.40	68.07
McDonald County, Missouri	581	1,917	1,336	25.17	83.05	57.88
Washington County, Arkansas	11,098	20,059	8,961	54.66	98.79	44.13
Fort Smith, AR-OK Metro Area	3,676	22,052	18,376	13.10	78.60	65.50
Crawford County, Arkansas	1,000	4,788	3,788	16.14	77.29	61.15
Sebastian County, Arkansas	2,912	10,663	7,751	23.15	84.78	61.63
Le Flore County, Oklahoma	31	3,771	3,740	0.62	74.85	74.23
Sequoyah County, Oklahoma	-267	2,830	3,097	-6.29	66.68	72.98
Hot Springs, AR Metro Area	-1,572	6,886	8,458	-16.38	71.73	88.11
Garland County, Arkansas	-1,572	6,886	8,458	-16.38	71.73	88.11
Jonesboro, AR Metro Area	3,364	10,979	7,615	27.80	90.72	62.92
Craighead County, Arkansas	3,552	9,055	5,503	36.83	93.89	57.06
Poinsett County, Arkansas	-188	1,924	2,112	-7.65	78.27	85.91
Little Rock-North Little Rock-Conway, AR Metro Area	21,219	60,932	39,713	30.32	87.07	56.75
Faulkner County, Arkansas	4,202	9,645	5,443	37.11	85.17	48.07
Grant County, Arkansas	81	1,217	1,136	4.54	68.17	63.63
Lonoke County, Arkansas	2,132	5,978	3,846	31.19	87.46	56.27
Perry County, Arkansas	-90	680	770	-8.62	65.13	73.75
Pulaski County, Arkansas	12,871	35,045	22,174	33.62	91.55	57.93
Saline County, Arkansas	2,023	8,367	6,344	18.88	78.09	59.21
Memphis, TN-MS-AR Metro Area	44,775	112,666	67,891	35.15	88.44	53.29
Crittenden County, Arkansas	2,065	4,986	2,921	40.57	97.95	57.38
Benton County, Mississippi	-31	573	604	-3.55	65.64	69.19
DeSoto County, Mississippi	5,298	12,929	7,631	32.85	80.17	47.32
Marshall County, Mississippi	196	2,809	2,613	5.28	75.63	70.36
Tate County, Mississippi	343	2,068	1,725	11.88	71.60	59.73
Tunica County, Mississippi	605	1,215	610	56.13	112.73	56.60
Fayette County, Tennessee	333	2,662	2,329	8.66	69.25	60.59
Shelby County, Tennessee	36,853	85,792	48,939	39.73	92.48	52.75
Tipton County, Tennessee	1,178	4,618	3,440	19.31	75.70	56.39
Pine Bluff, AR Metro Area	550	7,175	6,625	5.49	71.57	66.08
Cleveland County, Arkansas	-74	519	593	-8.52	59.73	68.25
Jefferson County, Arkansas	586	5,873	5,287	7.57	75.84	68.28
Lincoln County, Arkansas	38	783	745	2.69	55.40	52.71
Texarkana, TX-AR Metro Area	2,346	12,271	9,925	15.72	82.25	66.52
Little River County, Arkansas	-134	848	982	-10.18	64.40	74.57
Miller County, Arkansas	1,098	3,803	2,705	25.26	87.50	62.24
Bowie County, Texas	1,382	7,620	6,238	14.93	82.32	67.39
Total Population	196,211	559,774	363,563	30.57	87.21	56.64

Table 4						
Components of Net Migration on Population						
County	Net Migration Components			Rates per 1000		
	Total	International	Domestic	Total	International	Domestic
Fayetteville-Springdale-Rogers, AR-MO Metro Area	38,174	7,597	30,577	82.41	16.40	66.01
Benton County, Arkansas	25,362	4,133	21,229	114.57	18.67	95.90
Madison County, Arkansas	239	17	222	15.20	1.08	14.12
McDonald County, Missouri	-1,002	254	-1,256	-43.41	11.00	-54.41
Washington County, Arkansas	13,575	3,193	10,382	66.86	15.73	51.13
Fort Smith, AR-OK Metro Area	-2,895	1,725	-4,620	-10.32	6.15	-16.47
Crawford County, Arkansas	-650	287	-937	-10.49	4.63	-15.13
Sebastian County, Arkansas	-871	963	-1,834	-6.93	7.66	-14.58
Le Flore County, Oklahoma	-500	358	-858	-9.92	7.11	-17.03
Sequoyah County, Oklahoma	-874	117	-991	-20.59	2.76	-23.35
Hot Springs, AR Metro Area	3,298	41	3,257	34.36	0.43	33.93
Garland County, Arkansas	3,298	41	3,257	34.36	0.43	33.93
Jonesboro, AR Metro Area	5,348	913	4,435	44.19	7.54	36.65
Craighead County, Arkansas	5,705	821	4,884	59.15	8.51	50.64
Poinsett County, Arkansas	-357	92	-449	-14.52	3.74	-18.26
Little Rock-North Little Rock-Conway, AR Metro Area	13,771	6,496	7,275	19.68	9.28	10.40
Faulkner County, Arkansas	4,640	618	4,022	40.97	5.46	35.52
Grant County, Arkansas	156	22	134	8.74	1.23	7.51
Lonoke County, Arkansas	1,717	826	891	25.12	12.08	13.04
Perry County, Arkansas	-245	8	-253	-23.47	0.77	-24.23
Pulaski County, Arkansas	-1,876	4,564	-6,440	-4.90	11.92	-16.82
Saline County, Arkansas	9,379	458	8,921	87.54	4.27	83.26
Memphis, TN-MS-AR Metro Area	-28,125	8,729	-36,854	-21.23	6.59	-27.82
Crittenden County, Arkansas	-3,659	42	-3,701	-71.88	0.83	-72.71
Benton County, Mississippi	-431	-18	-413	-49.37	-2.06	-47.31
DeSoto County, Mississippi	8,879	434	8,445	55.06	2.69	52.37
Marshall County, Mississippi	-1,532	16	-1,548	-41.25	0.43	-41.68
Tate County, Mississippi	-1,007	38	-1,045	-34.87	1.32	-36.18
Tunica County, Mississippi	-1,151	83	-1,234	-106.79	7.70	-114.49
Fayette County, Tennessee	686	61	625	17.85	1.59	16.26
Shelby County, Tennessee	-28,936	7,859	-36,795	-31.19	8.47	-39.66
Tipton County, Tennessee	-974	214	-1,188	-15.97	3.51	-19.47
Pine Bluff, AR Metro Area	-8,901	128	-9,029	-88.78	1.28	-90.06
Cleveland County, Arkansas	-395	5	-400	-45.46	0.58	-46.04
Jefferson County, Arkansas	-8,051	122	-8,173	-103.97	1.58	-105.55
Lincoln County, Arkansas	-455	1	-456	-32.19	0.07	-32.26
Texarkana, TX-AR Metro Area	-1,285	390	-1,675	-8.61	2.61	-11.23
Little River County, Arkansas	-572	-8	-564	-43.44	-0.61	-42.83
Miller County, Arkansas	-692	-10	-682	-15.92	-0.23	-15.69
Bowie County, Texas	-21	408	-429	-0.23	4.41	-4.63
Total Population	19,385	26,019	-6,634	5.99	8.04	-2.05

Summary of Findings

Table 5 shows the causes of population change within the counties by presenting the direction of the population change components. This qualitative analysis of population change directions helps explain some of the underlying trends for changes in county level populations.

Table 5					
Qualitative Change in Population of Arkansas MSA Counties and Their Components of Population Change: 2010-2016					
County	Population Growth	Natural Increase	Net Migration	International	Domestic
Fayetteville-Springdale-Rogers, AR-MO Metro Area	+	+	+	+	+
Benton County, Arkansas	+	+	+	+	+
Madison County, Arkansas	+	+	+	+	+
McDonald County, Missouri	-	+	-	+	-
Washington County, Arkansas	+	+	+	+	+
Fort Smith, AR-OK Metro Area	+	+	-	+	-
Crawford County, Arkansas	+	+	-	+	-
Sebastian County, Arkansas	+	+	-	+	-
Le Flore County, Oklahoma	-	+	-	+	-
Sequoyah County, Oklahoma	-	-	-	+	-
Hot Springs, AR Metro Area	+	-	+	+	+
Garland County, Arkansas	+	-	+	+	+
Jonesboro, AR Metro Area	+	+	+	+	+
Craighead County, Arkansas	+	+	+	+	+
Poinsett County, Arkansas	-	-	-	+	-
Little Rock-North Little Rock-Conway, AR Metro Area	+	+	+	+	+
Faulkner County, Arkansas	+	+	+	+	+
Grant County, Arkansas	+	+	+	+	+
Lonoke County, Arkansas	+	+	+	+	+
Perry County, Arkansas	-	-	-	+	-
Pulaski County, Arkansas	+	+	-	+	-
Saline County, Arkansas	+	+	+	+	+
Memphis, TN-MS-AR Metro Area	+	+	-	+	-
Crittenden County, Arkansas	-	+	-	+	-
Benton County, Mississippi	-	-	-	-	-
DeSoto County, Mississippi	+	+	+	+	+
Marshall County, Mississippi	-	+	-	+	-
Tate County, Mississippi	-	+	-	+	-
Tunica County, Mississippi	-	+	-	+	-
Fayette County, Tennessee	+	+	+	+	+
Shelby County, Tennessee	+	+	-	+	-
Tipton County, Tennessee	+	+	-	+	-
Pine Bluff, AR Metro Area	-	+	-	+	-
Cleveland County, Arkansas	-	-	-	+	-
Jefferson County, Arkansas	-	+	-	+	-
Lincoln County, Arkansas	-	+	-	+	-
Texarkana, TX-AR Metro Area	+	+	-	+	-
Little River County, Arkansas	-	-	-	-	-
Miller County, Arkansas	+	+	-	-	-
Bowie County, Texas	+	+	-	+	-

Explanations for Population Changes within MSA Counties: 2010-2016

Fayetteville-Springdale-Rogers, AR-MO MSA

Benton County, AR: population grew due to increases in all the components of population change.

Madison County, AR: population grew due to increases in all the components of population change.

McDonald County, MO: population loss due to high net migration loss offsetting positive natural increase rate.

Washington County, AR: population grew due to increases in all the components of population change.

Fort Smith, AR-OK MSA

Crawford County, AR: population growth attributed to positive natural increase offsetting decreased net migration.

Sebastian County, AR: population grew due to positive natural increase rate and the county attracting international migrants.

Le Flore County, OK: population loss due to domestic out migration offsetting a positive natural increase in population.

Sequoyah County, OK: population decline despite the county attracting international migrants.

Hot Springs, AR MSA

Garland County, AR: population growth due to increase in net migration offsetting negative natural increase in population.

Jonesboro, AR MSA

Craighead County, AR: population grew due to increases in all the components of population change.

Poinsett County, AR: population decline despite the county attracting international migrants.

Little Rock-North Little Rock-Conway, AR MSA

Faulkner County, AR: population grew due to increases in all the components of population change.

Grant County, AR: population grew due to increases in all the components of population change.

Lonoke County, AR: population grew due to increases in all the components of population change.

Perry County, AR: population decline despite the county attracting international migrants.

Pulaski County, AR: population grew due to positive natural increase and the county attracting international migrants.

Saline County, AR: population grew due to increases in all the components of population change.

Memphis, TN-MS-AR MSA

Crittenden County, AR: population loss due to domestic outmigration.

Benton County, MS: population loss due to decreases in all the components of population change.

DeSoto County, MS: population grew due to increases in all the components of population change.

Marshall County, MS: population declined due to decreased domestic migration offsetting positive natural increase.

Tate County, MS: population declined due to decreased domestic migration offsetting positive natural increase rate.

Tunica County, MS: population declined due to decreased domestic migration offsetting positive natural increase.

Fayette County, TN: population grew due to increases in all the components of population change.

Shelby County, TN: population growth due to positive natural increase offsetting decrease in net migration.

Tipton County, TN: population growth due to positive natural increase offsetting decrease in net migration.

Pine Bluff, AR MSA

Cleveland County, AR: population declined despite the county attracting international migrants.

Jefferson County, AR: population decline due to decrease in domestic migration offsetting growth through natural increase and international migration.

Lincoln County, AR: population decline due to decrease in domestic migration offsetting growth through natural increase and international migration.

Texarkana, TX-AR MSA

Little River County, AR: population decline because of decreases across all the components of population change.

Miller County, AR: population growth due to positive natural increase offsetting negative net migration.

Bowie County, TX: population growth due to positive natural increase offsetting decline in net migration.