

The Rural Youth Exodus of U.S. Counties: Community Level Characteristics and Trends



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Executive Summary

This study examines rural youth migration in the United States. All rural counties with negative net migration of youth were included in the dataset. The 275 counties experiencing this youth exodus were analyzed for community level characteristics. Using previous research and literature, characteristics which either push or pull residents from/to the community were established: education, job sectors, income, citizen participation, and natural amenities. The data analysis reveals youth exodus counties have significantly lower median household income and a higher proportion of agriculture, forestry, fishing, and hunting, and mining jobs. These economic conditions likely pull rural youth to urban areas due to wage differentials. Additionally, citizen participation rates are lower than the national average which may indicate less community involvement and connection. Finally, the proportion natural amenities and recreation is similar to the national average, which indicates the hypothesis of these variables pulling people to regions still holds true. This information suggests policies to diversify the local economy and strengthen community bonds would encourage the rural youth to remain at home.

Introduction

One of the most daunting questions facing rural youth in America is whether they should leave or stay. The safety and identity tied to home conflicts with an overwhelming belief that the only way to succeed is through leaving their small towns behind. In search of broader educational, employment, economic, and social opportunities, the rural youth trade-off potential emotional and social factors tied to their rural identity. With high migration propensities among young adults, a graying effect takes place; the retained populations continue to only grow older. Without future workers, homeowners, voters, parents, and taxpayers, small-town America will slowly fade with time.

Other researchers have investigated the individual level motivating factors for migration, but the aim of this paper is to investigate the community and place level factors. In rural communities with high levels of youth out migration, what community trends and factors are consistent? This question will be addressed beginning with a summary of rural out-migration trends in the United States and established push and pull factors from prior research and theory. Using this background information, a county level data analysis will be presented on community trends and characteristics across all rural U.S. counties with significant youth outmigration. This data can be used to help guide future policymaking.

Literature Review

Migration Patterns of Rural Youth

Migration patterns vary across an individual's life cycle; preferences and needs change over time and influence an individual's migration decision. Age is one of the most influential factors driving migration, particularly when considering the rural-urban continuum (Plane,

Henrie, and Perry 2005). Young adults are more likely to move from rural to urban areas, and families with children tend to move to suburban areas (Fuguitt and Heaton 1995; Johnson and Fuguitt 2000; Johnson et al. 2005). Johnson and Winkler (2015) used Census data to uncover a consistent trend between 1950 and 2010 of non-metro counties experiencing net migration loss of young adult to urban cores. These “core” counties had 30 percent more 25 to 29-year-olds than expected given the previous decade’s Census data of 15 to 19-year-olds. This overwhelming pattern of mass youth out-migration from rural areas is described as the rural youth exodus.

Economic Migration Patterns

Continuing with migration decisions, the following paragraphs will review theoretical framework set forth by economists and researchers on migration decision making. The literature categorizes migration decision making factors into three levels: macro, micro, and meso. Macro level factors consider aggregate migration trends within countries and internationally. Micro level examines what influences individual household decision making. And the Meso level theories combine the structural macro migration models with rational individual migration decision models. The theories presented are those relevant to the rural youth exodus and represent only a portion of all migration theory.

Macro Level Theory

The neoclassical macro-migration theories explain migration through differences in supply and demand for labor. The dual-sector model (Lewis, 1954) divides the labor market into two sectors: traditional agricultural sector and a modern industrial sector. In this model, surplus labor in the agricultural sector migrates to the modern industrial sector due to wage differentials. This continues until wage equalization occurs. To put more simply, rural workers will be pulled

to more urban areas due to higher paying jobs. The dual-sector model assumes rationality, perfect information, and unlimited capital formation in industry. Further models have been set forth to account for urban unemployment (Todaro, 1969 and Harris & Todaro, 1970) and structural, political, or economic differences between counties (Wallerstein 1974, Zolberg 1981, and Hollifield, 2000). However, the dual-sector model still provides a good general theory on labor migration.

Micro Level Theory

Neoclassical micro-migration theory is the human capital approach (Sjaastad, 1962). Under this theory, migration is considered an individual cost-benefit calculation. Costs of migration includes monetary travel costs and non-monetary opportunity and psychological costs, such as social connections. Benefits include earnings differentials and non-monetary returns, such as preference for the destination location. The individual will only move if the benefits are greater than the costs. Under this theory, it is more likely that young people will choose to move to an urban center due to higher paying jobs and more opportunities for entertainment and recreation. An individual with fewer social and community connections has fewer psychological costs upon leaving. Additionally, higher education levels expand employment opportunities. However, even when considering the migration intentions of at-risk youth, defined as those individuals coming from lower-income households with lower levels of education, the perceived earnings differentials and non-monetary returns of moving holds true (A. Theodori and G. Theodori, 2014). The micro-level theory is difficult to measure, as individual values and preferences change person to person.

Meso Level Theory

Goss and Lindquist (1995) set forth a framework to examine international labor migration at a meso-level. They suggest that new communication networks and communities form in receiving countries. These social networks of “pioneer migrants” aid new migrants with their journeys, thus perpetuating a migration cycle. Faist (2000) furthers this idea by emphasizing the importance of solidarity amongst communities and reciprocity in small groups. He emphasizes that it is the weak ties individuals hold that build a transnational community. Although Goss and Lindquist framed their argument on an international scale, it can be applied to in-country migration. A young woman in rural America possesses an overwhelming belief that the only way to succeed is through leaving her small town because that is what the next-door neighbor’s oldest son did. And if she should leave, she can reach out to the neighbors or their son on how to do it. And her family, neighbors, community members, and teachers will help her and put her in contact with people they know. The town rallies for her to leave.

Individual and Community Push and Pull Factors

Pull

Lost connections are one of the most common costs associated with leaving rural life. Connection to community and place, strong social ties within the community, and proximity to family (Mills and Hazarika, 2001; Johnson et al. 2005; Theobald & Wood, 2011; A. Theodori & G. Theodori, 2015) all contribute to an individual’s social and cultural connections which are left behind. Although the distinct cultural and historical aspects of each place differ, rural inhabitants share a sense of rurality and pride in what it means to be rural (Theobald & Wood, 2011; A. Theodori & G. Theodori, 2014). Identity is formed and an individual becomes tied to place, to

home. At risk youth have been found to have lower levels of community connection and loyalty, but less opportunities to move (A. Theodori & G. Theodori, 2014). The concept of home surpasses the physical place and includes the social and family connections.

Youth considering leaving anticipate stress due to abandoning an established social network and venturing into the new and unknown (Hektner 1995). Some rural youth described their barrier to leave as, “my family owns land here.” (A. Theodori & G. Theodori, 2014). This barrier is more than a land or property issue, in rural America where the land is often producing and generating income, it is a family obligation to stay and tend the land. One study found that males are less likely to leave their rural homes due to higher levels of perceived obligations to family (Mills & Hazarika, 2001). Furthermore, recreation, natural amenities, and second-home development play a vital role in non-metro counties retaining or increasing their population. Non-metro counties in such states as Minnesota and Wisconsin, which have higher levels of lake or river-based recreation, were found to gain population between 1990 and 2000 (McGranahan & Beale, 2002). Many of these pull factors are subject to individual experiences and perceptions which can make large scale data collection difficult. The primary method for collecting these trends have been community surveys and interviews by sociologists.

Push

Economic and educational outcomes are considered potential benefits upon leaving small town life. Following the macro-level theory described above, these rural workers will be pulled to urban areas due to higher paying jobs or the promise of such a job after education. Community poverty rates have not been found significant to out-migration trends (McGranahan and Beale, 2002; McGranahan et al., 2010). Throughout the 1990’s, rural poverty significantly declined. However, non-metro counties experienced some of the highest population loss in decades.

Additionally, poverty rates in nonmetro counties which lost populations were no different from non-metro counties without population loss. Instead, researchers theorize it is the community's major industries of employment that impacts migration trends (McGranahan et al., 2010; Bhandari & Ghimire, 2016; Dennis & Talan, 2007). Communities dependent on the land, such as agriculture, forestry, fishing and hunting, and mining, are more likely to experience a youth exodus due to decreasing job opportunities in these industries. Furthermore, other researchers have posited that low-skill industries, such as meatpacking and feedlots, also contribute to the out-migration. These youth have expressed this in statements such as, "I don't know if there is anything for me to do here job-wise" (A. Theodori & G. Theodori, 2014).

Education and schools play an important role in out-migration. Schools served a role of sorting and selecting the youth to leave (Corbett, 2003; Carr & Kefalas, 2010; Theobald & Wood, 2011). High school dropout rates among males in these non-metro counties were significantly higher, likely due to low-skill job availability in the area. However, for those students who complete high school, higher education opportunities and skill-matched jobs are often outside of the county. However, the proportion of rural youth graduating high school is also increasing, which follows national trends (Howley, 2006). Since many of these factors are related to economic data, push factors are much easier to measure and quantify. Still, it is important to note that economic conditions of an area are still subject to individual perception and preferences.

Methods Used

Dependent Variable

To begin the analysis of community trends and characteristics of youth exodus counties, the dataset of counties must be defined. The data came from the Applied Population Laboratory

at the University of Wisconsin-Madison. This data set estimates net migration for U.S. counties (or a state’s equivalent) by demographic, such as five-year age group. This is compiled using U.S. Census counts at the beginning and end of the decade while accounting for birth and death records. The estimates are considered highly accurate as they do not rely on sampling. However, the dataset is for 2000 to 2010 as that 2020 Census results have not been fully collected and released yet.

The net-migration by five-year age groups was extracted and filtered to only include counties with negative net migration of the 25-29-year-old demographic. Johnson and Winkler (2015) used this age bracket to define “youth” in their research. The remaining counties were then further filtered by Rural-Urban Continuum Codes (RUCC). Counties coded 5, 7, or 9 were included in the final dataset. The definition of each RUCC number is provided below in Table 1. Rural, not adjacent to a metro county were the only ones included. Only the most rural of counties were of interest. Additionally, economic “spill-over” effects, or agglomeration, could occur from neighboring urban areas and bias the community characteristics. After filtering down the initial dataset by negative net migration of 25-29-year-olds and Rural-Urban Continuum Codes, 275 counties remained. These counties are the ones considered to be experiencing a rural youth exodus. A full list of these counties is provided in Appendix A.

Table 1: Rural-Urban Continuum Code Definitions

RUCC	Definition
5	Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area
7	Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area
9	Nonmetro - Completely rural or less than 2,500 urban population, not adjacent to a metro area

Source: USDA 2013

Variables of Interest

Using the literature summarized above, the following series of quantifiable characteristics was compiled: education, major employment industries, income, citizen participation, and natural amenities. In order to quantify these characteristics, a series of proxies were defined. These are listed in Table 2. Citizen participation was included to measure community connection and involvement. This is proxied by 2016 voter turnout for the U.S. House. While voter turnout for local and municipal elections would have been a closer measure of local community connection, this data was not available. Instead, 2016 election data was used as this was not a presidential election year, which often attracts more voters for large scale issues, and many state's gubernatorial elections were taking place. Furthermore, to measure the extent of recreation and natural amenities, the proxy of employment in the Arts, entertainment, and recreation, and accommodation and food services was used.

Table 2: List of Variables of Interest

Community Characteristics	Proxy	Data Source
<i>Push</i>		
Education	Proportion with less than high school education	2010 Census Data
Job Sectors	Proportion of all employment: Agriculture, forestry, fishing and hunting, and mining	2010 Census Data
Job Sectors	Proportion of all employment: Manufacturing	2010 Census Data
Income	Median household income in the past 12 months (not inflation adjusted)	2010 Census Data
<i>Pull</i>		
Citizen Participation	2016 Election Voter Turnout Percentage	Rice University Local Elections in America Project
Natural Amenities	Proportion of all employment: Arts, entertainment, and recreation, and accommodation and food services	2010 Census Data

The proportion or mean of the variables of interest were calculated. This data was primarily collected from the 2010 Census in order to match the dependent variable's range (2000-2010). Voter Turnout was the only variable not collected from the Census. It was instead gathered by the Rice University Local Elections in America Project. This dataset is still in development, so data on voter turnout from Alaska is missing. In order to test for significance, a one proportion z-test or one sample t-test were conducted, comparing the dataset proportion or mean to the U.S.

Findings and Discussion

Of the 275 counties, the negative net migration ranged from -5.5 percent to -59.2 percent. This is a large range, but the mean and median are similar, -31.0 percent and -31.6 percent respectively. This indicates the dataset is normally distributed. Additionally, considering the standard deviation of 11.6, no counties would be considered outliers.

Table 3. Dependent Variable Summary Statistics

Statistic	Variable
	<i>Counties</i>
Count	275
	<i>Estimated Net Migration Rate in 2000s, total, ages 25-29</i>
Min	-59.2%
Max	-5.5%
Mean	-31.0%
Median	-31.6%
Standard Deviation	+/- 11.6

The literature would suggest the population remaining in youth exodus counties would be significantly less educated than the general population. This is due to low-skill job availability in rural areas and those with higher levels of education moving to more urban areas for better skill-matched jobs. The proportion of the population with less than a high school degree is slightly

higher than the U.S. proportion, but with a p-value of 0.11, it is not considered significant. This could be due to increasing levels of education across the board in the U.S. A high school diploma is considered an essential educational milestone now, and a college degree is more accessible than ever before with student loans and expanding community colleges.

The proportion of employment in the agriculture, forestry, fishing and hunting, and mining industry for youth exodus counties is significantly higher than the proportion for the U.S. Roughly one-fifth of all employment in these counties is related to the land. This is consistent with expectations as this industry is primarily concentrated in rural America. While this does not imply a causal relationship between the industry and the youth exodus, it does confirm agriculture, forestry, fishing, and hunting, and mining is a major employer in these counties. This industry is declining. With corporate farming and automation taking over, less employees are required. While the fading of rural America is apparent through an aging population, it is also apparent through the dependence on a slowing industry.

Another industry discussed in the reading which may be more prominent in youth exodus counties is manufacturing. However, in this dataset it is not significantly different than the national proportion. While manufacturing may be declining in job opportunities, it seems to impact more counties than just the youth exodus counties. Additionally, manufacturing is only one form of low-skill work which may be prominent in rural America.

The mean of median household incomes in youth exodus counties in 2010 was \$37,452 compared to the U.S. median of \$51,914. Household incomes in these rural counties is significantly lower. Once again, this was to be expected due to lower costs of living and lower paying jobs. Still, this finding supports the claim that rural youth may leave for higher paying jobs. The earnings differentials on the rural-urban continuum likely pulls residents to the urban

due to lower paying jobs in their home counties. This may be especially true for the young adults who are more mobile due to fewer obligations, such as children.

Voter turnout rate for the 2016 election was used as a proxy for citizen participation, which can represent commitment and involvement in the community. Significantly less eligible voters of youth exodus counties voted in 2016 than all other counties. This would suggest lower citizen participation rates in these counties, which can be inferred as lower levels of community involvement and connection. Again, this measure would have been more impactful had it measured local and municipal election turnout, but the data was not available.

The final variable was proportion of all employment in the arts, entertainment, and recreation, and accommodation and food services industry. This variable was not statistically significant, and the literature would suggest this was to be expected. Natural amenities and recreation would pull residents towards the region. The results of this analysis do not dispel the hypothesis that such amenities and attractions bring residents to the area.

Table 4. Statistical Significance of Independent Variables

Community Variables	Youth Exodus Counties	All U.S. Counties	Test Statistic	P-value
Proportion with less than high school	20.78%	17.10%	1.62	0.11
Proportion of all employment: Agriculture, forestry, fishing and hunting, and mining	9.21%	1.85%	9.05	<0.0001
Proportion of all employment: Manufacturing	12.96%	10.98%	1.05	0.29
Median household income in the past 12 months (2010 dollars)	37,452	\$51,914.00	-31.57	<0.0001
2016 Election Voter Turnout Percentage	47%	58%	-3.80	<0.0001
Proportion of all employment: Arts, entertainment, and recreation, and accommodation and food services	7.28%	8.85%	-0.92	0.36

Conclusions and Implications

The aim of this study was not to measure the extent to which the rural youth come back when they grow older and “settle down.” Instead, it was to measure the exodus of youth. Further studies would need to be conducted on community characteristics of counties which see a return of migrants. This would deepen the understanding of migration trends in rural America. Instead, this study focused on what motivates the youth to leave in the first place.

While communities and policymakers have little impact on individual perceptions of place, they do have control over some community characteristics which are likely to push or pull residents. Considering the strong relationship between migration decisions and the major employment industry of agriculture, forestry, fishing and hunting, and mining, policymakers and

municipalities should put a strong focus on diversifying their economies. This is not to encourage the debunked policy of “smokestack chasing,” which is subsidizing corporate businesses to choose a certain location (Clark & Montjoy, 1998). Instead, policymakers should consider rural entrepreneurship initiatives to grow businesses at home and strengthen the economy. Not all communities have the means to develop a recreation industry which would attract people. However, such states as Kansas and Iowa have invested in renewable energy through construction of wind turbines (U.S. Department of Energy). In this example, the land is still producing, but through a different means.

Cultural change and investment must also be undertaken. As new opportunities arise within communities, a mindset of “success found at home” must arise. Educators and residents must be continually informed and educated on the new opportunities. Fostering a sense of community and home can increase the non-monetary costs of leaving. Local leaders and residents should dedicate themselves to fostering community cohesion and pride. Some ways this can be done includes promoting citizen participation and engagement, cracking down on illegal drug activities rampant in rural areas (Dombrowski et. at, 2016), hosting region-wide festivals or events, and encouraging diversity and inclusion of minority populations.

Through economic and social reform suggested above, counties undergoing a rural youth exodus may once again become the thriving, intimate communities they once were. Addressing such a wicked problem as the graying of rural America involves the combined and organized efforts of policymakers, community leaders, educators, and residents. Such an undertaking requires diversifying and empowering the economy while building community and investing in current residents. If a community invests in its social and economy characteristics, rural youth may stay.

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Appendix A

State	County	RUCC 2013	Estimated Net Migration
			Rate in 2000s, total, ages 25-29
Alabama	Choctaw County	9	-39.7
Alabama	Clarke County	7	-33.8
Alabama	Clay County	9	-23.9
Alabama	Conecuh County	7	-32.3
Alabama	Marengo County	7	-36
Alabama	Marion County	7	-17.8
Alabama	Monroe County	7	-36.2
Alabama	Wilcox County	9	-45.9
	Wade Hampton Census		
Alaska	Area	9	-29.4
Alaska	Northwest Arctic Borough	7	-13.4
Arkansas	Bradley County	7	-24.7
Arkansas	Chicot County	7	-35.3
Arkansas	Ashley County	7	-35.3
Arkansas	Clark County	7	-46.1
Arkansas	Clay County	7	-31.8
Arkansas	Columbia County	7	-35.5
Arkansas	Lee County	7	-21.7
Arkansas	Monroe County	7	-50.2
Arkansas	Nevada County	7	-29.8
Arkansas	Newton County	9	-34.2
Arkansas	Ouachita County	7	-30.1
Arkansas	Pope County	5	-10.5
Arkansas	Randolph County	7	-24.5
Arkansas	Union County	7	-24.4
Arkansas	Woodruff County	9	-40.7
Colorado	Sedgwick County	9	-34.5
Colorado	Conejos County	9	-40.9
Colorado	Costilla County	9	-43.4
Colorado	Prowers County	7	-39.3
Colorado	Alamosa County	7	-28.1
Colorado	Kiowa County	9	-46.3
Georgia	Montgomery County	9	-13.1
Georgia	Towns County	9	-46.1
Georgia	Treutlen County	7	-17.9
Georgia	Ben Hill County	7	-14.3
Georgia	Clay County	9	-39.8
Georgia	Emanuel County	7	-19.4
Georgia	Hancock County	7	-7.2
Georgia	Irwin County	7	-36.6

Georgia	Quitman County	9	-34.2
Georgia	Stephens County	7	-15.3
Georgia	Tift County	5	-17.7
Illinois	Clay County	7	-18.8
Illinois	Hardin County	9	-38.1
Illinois	Henderson County	9	-35.4
Illinois	Pike County	7	-23.6
Illinois	Adams County	5	-19.2
Illinois	Edwards County	9	-26.9
Illinois	Coles County	5	-37.7
Illinois	Jasper County	7	-34.7
Illinois	Jefferson County	7	-9.8
Illinois	Wabash County	7	-31.4
Illinois	McDonough County	5	-44.3
Indiana	Knox County	5	-39.5
Indiana	Steuben County	7	-32.5
Indiana	Wayne County	5	-21.1
Iowa	Adams County	9	-25.8
Iowa	Appanoose County	7	-26.8
Iowa	Buena Vista County	7	-32.1
Iowa	Cerro Gordo County	5	-24.1
Iowa	Decatur County	9	-52.7
Iowa	Des Moines County	5	-18.6
Iowa	Emmet County	7	-43.3
Iowa	Mahaska County	7	-23.5
Iowa	Palo Alto County	7	-42.7
Iowa	Sac County	9	-42.2
Iowa	Poweshiek County	7	-42
Iowa	Sioux County	7	-38.4
Iowa	Taylor County	9	-32.2
Iowa	Wapello County	5	-15.7
Iowa	Webster County	5	-23.5
Iowa	Winnebago County	7	-47.8
Iowa	Winneshiek County	7	-57
Kansas	Allen County	7	-40
Kansas	Cloud County	7	-45.4
Kansas	Ellis County	5	-13.5
Kansas	Finney County	5	-25.4
Kansas	Greeley County	9	-36.9
Kansas	Kearny County	9	-37.9
Kansas	Kiowa County	9	-45.7
Kansas	Labette County	7	-31.4
Kansas	McPherson County	7	-34.4
Kansas	Mitchell County	7	-45.5

Kansas	Morton County	9	-34.5
Kansas	Neosho County	7	-36
Kansas	Pratt County	7	-34.4
Kansas	Rice County	7	-50.5
Kansas	Saline County	5	-7.3
Kansas	Seward County	5	-8.3
Kansas	Sherman County	7	-41.7
Kansas	Stanton County	9	-25.8
Kansas	Thomas County	7	-40.6
Kansas	Wichita County	9	-28.5
Kansas	Woodson County	9	-31.9
Kentucky	Adair County	7	-21.5
Kentucky	Bell County	7	-23.4
Kentucky	Breathitt County	7	-39.6
Kentucky	Boyle County	7	-23.1
Kentucky	Calloway County	7	-16.1
Kentucky	Clinton County	9	-6.2
Kentucky	Cumberland County	9	-27.2
Kentucky	Floyd County	7	-19.4
Kentucky	Fulton County	9	-23.6
Kentucky	Harlan County	7	-29.8
Kentucky	Jackson County	9	-18.8
Kentucky	Knott County	9	-37.6
Kentucky	Knox County	7	-18.8
Kentucky	Leslie County	9	-25.1
Kentucky	Magoffin County	9	-29.3
Kentucky	Menifee County	9	-48.5
Kentucky	Owsley County	9	-17.2
Kentucky	Pike County	7	-17.8
Kentucky	Rowan County	7	-33.9
Kentucky	Taylor County	7	-13.1
Kentucky	Whitley County	7	-30.4
Louisiana	Catahoula Parish	9	-9.2
Louisiana	East Carroll Parish	7	-15.5
Louisiana	Franklin Parish	7	-24
Louisiana	Madison Parish	7	-32.2
Louisiana	Tensas Parish	9	-54.2
Louisiana	West Carroll Parish	9	-32.6
Maine	Aroostook County	7	-36.1
Maine	Washington County	7	-32.3
Michigan	Ontonagon County	9	-49.1
Michigan	Delta County	5	-37.6
Michigan	Gogebic County	7	-28.7
Michigan	Huron County	7	-37.9

Michigan	Alpena County	7	-37.3
Michigan	Schoolcraft County	7	-41.1
Michigan	Chippewa County	7	-6.2
Michigan	Crawford County	7	-36.2
Michigan	Houghton County	5	-40.4
Michigan	Menominee County	7	-37.3
Michigan	Marquette County	5	-20.1
Michigan	Oscoda County	9	-44.1
Michigan	Presque Isle County	7	-48.7
Minnesota	Beltrami County	7	-19.6
Minnesota	Lyon County	7	-17.7
Minnesota	Swift County	7	-35.9
Minnesota	Stevens County	7	-56
Minnesota	Wadena County	7	-31.1
Mississippi	Bolivar County	7	-37.5
Mississippi	Calhoun County	9	-17.2
Mississippi	Carroll County	9	-29.4
Mississippi	Chickasaw County	7	-26.1
Mississippi	Choctaw County	9	-48.3
Mississippi	Clarke County	9	-28.9
Mississippi	Clay County	7	-31.4
Mississippi	Coahoma County	7	-39
Mississippi	Franklin County	9	-30.6
Mississippi	Grenada County	7	-22.3
Mississippi	Itawamba County	7	-26.1
Mississippi	Jasper County	9	-32.2
Mississippi	Kemper County	9	-35.4
Mississippi	Lauderdale County	5	-7.5
Mississippi	Leflore County	5	-28.7
Mississippi	Lowndes County	5	-10.1
Mississippi	Noxubee County	7	-32.2
Mississippi	Monroe County	7	-25.8
Mississippi	Montgomery County	7	-34.5
Mississippi	Newton County	7	-32.9
Mississippi	Oktibbeha County	5	-15
Mississippi	Prentiss County	7	-30
Mississippi	Sunflower County	7	-21.3
Mississippi	Webster County	9	-25.8
Mississippi	Walthall County	9	-22.9
Mississippi	Washington County	5	-39
Mississippi	Wayne County	7	-24.6
Mississippi	Winston County	7	-25.2
Mississippi	Yalobusha County	7	-27.7
Missouri	Adair County	7	-52.4

Missouri	Atchison County	9	-46.6
Missouri	Grundy County	7	-29.9
Missouri	Lewis County	9	-34.9
Missouri	Marion County	5	-19
Missouri	New Madrid County	7	-27.1
Missouri	Oregon County	9	-34.2
Missouri	Ozark County	9	-33.6
Missouri	Pemiscot County	7	-32.9
Missouri	Phelps County	5	-10.8
Montana	Beaverhead County	7	-41.3
Montana	Custer County	7	-25.9
Montana	Hill County	7	-26.9
Montana	Silver Bow County	5	-18.9
Nebraska	Dawes County	7	-50.6
Nebraska	Frontier County	9	-59.2
Nebraska	Keya Paha County	9	-47.3
Nebraska	Loup County	9	-48.1
Nebraska	Madison County	5	-26.5
Nebraska	Nemaha County	7	-41.6
Nebraska	Red Willow County	7	-28.4
Nebraska	Sioux County	9	-45.6
Nebraska	Wheeler County	9	-42.5
New			
Hampshire	Grafton County	5	-29.1
New Mexico	Hidalgo County	9	-49.7
New Mexico	Grant County	7	-35
New Mexico	McKinley County	5	-31.2
New Mexico	Mora County	9	-46.7
New Mexico	Quay County	7	-38.7
New Mexico	Roosevelt County	7	-19.6
New York	Allegany County	7	-51.3
New York	Clinton County	5	-15.8
New York	Otsego County	7	-48.4
North Carolina	Washington County	7	-31.2
North Carolina	Richmond County	5	-20.7
North Carolina	Watauga County	5	-40
North Dakota	Bottineau County	9	-56.3
North Dakota	Dickey County	9	-39.7
North Dakota	Stutsman County	7	-26.1
North Dakota	Stark County	7	-9.1
Ohio	Holmes County	7	-21.7
Ohio	Noble County	7	-29.7
Oklahoma	Cimarron County	9	-46.3
Oklahoma	Custer County	7	-20.7

Oklahoma	Jackson County	7	-13.5
Oklahoma	Johnston County	9	-28.7
Oklahoma	Latimer County	7	-36.4
Oklahoma	Pontotoc County	7	-5.5
Oklahoma	Texas County	7	-10.5
Oklahoma	Woods County	7	-15.3
Oregon	Klamath County	5	-17.9
Oregon	Union County	7	-23.1
Pennsylvania	Cameron County	7	-42
Pennsylvania	Elk County	7	-34.1
Pennsylvania	Snyder County	7	-30.2
South Carolina	Bamberg County	7	-47.9
South Dakota	Spink County	9	-39.9
South Dakota	Todd County	9	-14.8
South Dakota	Codington County	5	-16.6
South Dakota	Corson County	9	-24.7
South Dakota	Davison County	7	-22.3
South Dakota	Dewey County	9	-44.2
South Dakota	Brookings County	5	-13.4
South Dakota	Buffalo County	9	-34.3
South Dakota	Bennett County	9	-32.5
South Dakota	Brown County	5	-12.3
Tennessee	Pickett County	9	-29.4
Tennessee	Clay County	9	-24.9
Tennessee	Decatur County	9	-12.2
Tennessee	Obion County	7	-15.6
Tennessee	Van Buren County	9	-32.5
Tennessee	Weakley County	7	-35.2
Texas	Brewster County	7	-12.8
Texas	Brooks County	7	-38.2
Texas	Brown County	5	-34.4
Texas	Cochran County	9	-48.6
Texas	Cottle County	9	-43.4
Texas	Comanche County	7	-28.8
Texas	Culberson County	9	-55.1
Texas	Edwards County	9	-44
Texas	Duval County	7	-34.7
Texas	Foard County	9	-45.6
Texas	Hall County	9	-40.2
Texas	Hardeman County	9	-41.4
Texas	McMullen County	9	-44.4
Texas	Kenedy County	9	-27.6
Texas	Nacogdoches County	5	-26.6
Texas	Pecos County	7	-31.4

Texas	Presidio County	7	-42
Texas	Shelby County	7	-15.4
Texas	Stephens County	7	-20.2
Texas	Zavala County	7	-26.7
Utah	Carbon County	7	-28.2
Utah	San Juan County	7	-34.9
Vermont	Caledonia County	7	-31.6
Virginia	Buchanan County	9	-22.4
Virginia	Smyth County	7	-20.8
West Virginia	McDowell County	7	-37.5
West Virginia	Randolph County	7	-6.8
West Virginia	Upshur County	7	-35.1
West Virginia	Webster County	9	-31.1
Wisconsin	Iron County	9	-47.2
Wisconsin	Ashland County	7	-34.8
Wisconsin	Forest County	9	-46.1
Wyoming	Goshen County	7	-33.1
