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SELECTIVE MIGRATION AND THE EDUCATIONAL "BRAIN DRAIN" FROM THE LOWER MISSISSIPPI DELTA REGION IN 1975-1980

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ABSTRACT

Using a unique source of information about migration, this paper calculates the rates of net migration by age and educational level for the Lower Mississippi Delta region for the period of 1975-80, compares different categories of counties in the Delta, and compares delta areas with non-Delta areas of the seven Delta states. It shows substantial losses of more highly educated persons, especially the young, from all rural counties, but especially for the core rural delta counties.

INTRODUCTION

The "Brain Drain" in the Lower Mississippi Delta

The lower Mississippi river delta region received intensive scrutiny during a brief period from October, 1988 until September 1990 because of the establishment of a temporary Commission to study its problems and to identify strategies for improving the welfare of people in the Delta (Public Law 100-460). The Commission held a series of hearings, commissioned a series of conferences and research studies, and issued several reports, the major ones being a preliminary report (LMDDC, 1989) and a final report (LMDDC, 1990). One of

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the issues which permeated nearly all of the debate and discussion about the Delta was its human resource base and how it could be improved. Recommendations have ranged from explicitly stimulating out-migration so as to solve a problem of surplus labor on the one hand (Venus, 1990) to focusing upon various methods of improving and enhancing the quality of the labor force in place so as to stimulate economic development and growth (LMDDC, 1990, pp. 19-68). The Commission made recommendations ranging from "parenting skills" all the way through higher education and research, focusing primarily upon increasing the quantity and quality of educational inputs available to the children and young people of the Delta. An explicit link was made between higher education and economic develoment.

Although educational inputs are important in determining the quality of a regions human resource base, migration is a fundamental factor as well. Rural areas in general have experienced net out-migration, except during the "rural renaissance" of the 1970s. Even then, however, they tended to lose young adults, and especially the more highly educated among them (Voth, et al, 1989). The core Delta counties have been losing population for a long time, even during the 1970s, and this loss has been, as elsewhere, selective of the more highly educated and skilled young adults. Unfortunately, the LMDDC report paid virtually no attention to this "brain drain," though some of the programs implemented since the report was issued do (Involvement, 1992, p. 11).

Selective out-migration of young people from rural areas has been a matter of concern to rural community advocates for a long time. It was one of the major issues which surfaced among county leadership groups during the pilot county programs, and the Community Resource Development programs which were carried out by USDA agencies in the late 1950's and early 1960's (Miller, Voth and Danforth, 1984). Unfortunately, although the general pattern of selective out-migration from rural areas is well-known and understood, specific rates are not easy to obtain, especially with any geographic detail. Using information compiled from the Census Bureau's County-to-County Migration Flows file, we have calculated net migration rates, by county type, for all 563 counties in the seven states in which the Lower Mississippi Delta is found. Counties are first classified in terms of their position vis-a-vis the lower Mississippi

delta region. To represent the level of human capital investment across the life cycle, net migration rates by age and educational level are then compared among these county groups to examine the extent and nature of human capital loss experienced by the different parts of "the delta" compared to the surrounding non-delta areas.

DATA AND METHODS

A unique data set from the 1980 Census is employed[1] In 1980 respondents were asked where they lived in 1975, allowing the comparison of in-migrants with out-migrants and the calculation of rates on in-migration, out-migration, and net migration by specific age/educational level categories of the population.

Definition of the Delta

Defining the "delta region" is fraught with difficulty, difficulty which the Lower Mississippi Delta Development Commission (LMDDC) neither avoided nor resolved. Its final definition of the delta appears to have been quite arbitrary, including a total of 219 counties in seven states (Arkansas, Illinois, Kentucky, Louisiana, Missouri, Mississippi and Tennessee). This is an extremely heterogenous group of counties among which those which are rural and have relatively large proportions of black people, two criteria which would seem to be central to any definition of the lower Mississippi delta region, are a clear minority. Following work done by Reinschmeidt and Green (1989), we have used a smaller and somewhat different "delta," and have classified the delta counties into four distinct groups, as follows:[2]

> *Core rural[3] delta counties.* -- Forty-three counties along the Mississippi river extending from the Missouri bootheel to the southwestern corner of Mississippi.

> *Fringe rural delta counties.* -- 133 rural counties grouped around these core delta counties in all directions. This group of counties is somewhat larger in the LMDDC designation, especially in Illinois and Kentucky, where

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areas that are more properly Appalachian were added by LMDDC after the first delta definition had been made in October of 1988.

Core metropolitan delta counties. -- Five metropolitan counties found largely imbedded within the region outlined by the core rural delta counties.

Fringe metropolitan delta counties. -- 19 counties which are at the edges of the delta region but contiguous to it. Most of these, excepting 2 in Arkansas, are included in the LMDDC designation.

Rural non-delta counties. -- 377 rural counties in the seven delta states, but not in the LMDDC region.

Metropolitan non-delta counties. -- 76 metropolitan counties in the seven states, but not in the LMDDC region.

Table 1 presents the distribution of counties by state for the entire seven-state region, and by county type. Comparison of the migration experience of these six groups of counties facilitates determining patterns that may be unique to the delta rather than, for example, simply the consequence of rurality.

METHODS AND PROCEDURES

The migration stream data tapes were obtained for all seven states of the Lower Mississippi Delta region (Ark., Ill., Ky., La., Mo., Miss. and Tenn.). For each of the 653 counties (including St. Louis City) the total numbers of non-movers, in-migrants, and out-migrants involving all other origins and destinations were calculated for the respective age/educational groups. Then, overall net migration rates were calculated for the six county types defined above, as well as for the total of all 653 counties for each of the age/educational level groups. These rates are presented in Table 2 for all 30 age/educational level groups. Table 3 presents the cumulative probability of remaining for a quasi-synthetic cohort by educational level, passing through the implied life cycle of the age periods.[4]

Table 1. Classification of Counties in Seven Delta States.

Category	AR	IL	KY	LA	MO	MS	TN	Total
Delta counties								
Rural Core delta	17	0	0	9	6	11	0	43
Rural Fringe delta	21	11	11	21	23	27	19	133
Metro Core delta	2	0	0	0	0	1	2	5
Metro Fringe delta	4	0	0	12	0	3	0	19
Sub-total	44	11	11	42	29	42	21	200[5]
LMDDC counties	42[6]	16	21	45	29	45	21	219
Non-delta counties								
Rural Non-delta	27	67	97	17	73	40	56	377
Metro Non-delta	4	24	12	5	13	0	18	76
Sub-total	31	91	109	22	86	40	64	453
Total	75	102	120	64	115	82	95	653

Results

Table 2 presents the results in the form of migration rates, calculated as percentages, for each county group by age and educational level. Each frame includes a complete set of 30 rates, plus a total column and a row that represents all college graduates. The greatest losses, as expected, were in the rural core delta counties (4.5% out-migration for the total). The highest overall rates of in-migration were among the two "fringe" county groups, the metropolitan delta fringe (2.8% in-migration) and the rural delta fringe (2.1% in-migration).[7]

Table 2. Net migration rates by county type

Age ->	18-24	25-34	35-44	45-64	65+	Total
All Counties:						
Elementary	6.3%	3.7%	2.0%	0.7%	0.3%	0.9%
1-3 High School	0.6%	0.8%	0.5%	-0.1%	-1.1%	0.1%
4 High School	-0.6%	1.1%	0.8%	-0.3%	-1.6%	0.1%
1-3 College	-0.9%	0.8%	0.4%	-0.6%	-1.8%	-0.2%
4 College	-1.1%	-0.5%	-0.3%	-1.3%	-2.0%	-0.8%
5 or more College	8.8%	1.5%	0.1%	0.1%	-2.0%	0.8%
Total	0.0%	1.0%	0.7%	-0.0%	-0.9%	0.2%
All college	0.8%	0.3%	-0.1%	-0.6%	-2.0%	-0.1%
Rural Non-Delta Counties:						
Elementary	2.7%	3.1%	2.7%	2.4%	0.5%	1.7%
1-3 High School	6.4%	4.2%	3.5%	3.3%	0.6%	3.8%
4 High School	3.8%	3.6%	4.0%	3.1%	1.3%	3.4%
1-3 College	3.9%	1.6%	5.7%	4.0%	1.0%	3.2%
4 College	-20.1%	-8.2%	1.9%	2.6%	1.3%	-5.3%
5 or more College	-23.9%	-4.7%	3.0%	2.7%	1.4%	-1.2%
Total	3.0%	1.5%	3.7%	2.9%	0.7%	2.3%
All college	-20.7%	-6.9%	2.5%	2.7%	1.3%	-3.6%
Rural Core Delta Counties:						
Elementary	-4.8%	-1.9%	0.8%	0.5%	-0.4%	-0.3%
1-3 High School	-6.6%	-2.1%	-2.7%	-1.1%	-1.7%	-3.1%
4 High School	-17.2%	-4.1%	-1.8%	-0.4%	-1.1%	-6.4%
1-3 College	-27.7%	-7.6%	-2.6%	-1.4%	-2.3%	-12.5%
4 College	-23.7%	-4.6%	-6.6%	0.6%	-3.9%	-6.2%
5 or more College	-39.6%	-5.2%	1.8%	-6.5%	-1.9%	-5.3%
Total	-15.8%	-4.1%	-1.6%	-0.4%	-0.9%	-4.5%
All college	-26.7%	-4.8%	-2.9%	-2.5%	-3.2%	-5.8%
Rural Fringe Delta Counties:						
Elementary	3.9%	2.8%	3.4%	3.6%	1.0%	2.4%
1-3 High School	-1.2%	3.9%	4.1%	5.1%	1.2%	2.6%
4 High School	-3.8%	3.9%	5.5%	5.1%	1.9%	2.3%
1-3 College	10.9%	1.9%	6.2%	5.6%	2.8%	6.1%
4 College	-23.9%	-13.5%	4.0%	4.4%	1.4%	-7.1%
5 or more College	-24.5%	-9.5%	0.4%	2.1%	2.7%	-3.8%
Total	-0.8%	0.8%	4.6%	4.4%	1.3%	2.1%
All college	-24.0%	-11.9%	2.2%	3.3%	1.9%	-5.8%

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Table 2. (continued) Net migration rates by county type

Age ->	18-24	25-34	35-44	45-64	65+	Total
Metropolitan Core Delta Counties:						
Elementary	1.5%	-0.5%	0.3%	-1.1%	0.5%	-0.2%
1-3 High School	4.0%	-2.9%	-0.6%	-1.1%	-0.8%	-0.1%
4 High School	2.3%	-2.2%	-0.5%	-1.0%	-1.2%	-0.5%
1-3 College	-6.4%	-1.9%	-2.2%	-1.4%	0.3%	-3.0%
4 College	10.2%	-0.5%	4.6%	-2.1%	0.1%	1.4%
5 or more College	<u>36.0%</u>	-4.2%	2.1%	3.3%	2.6%	1.0%
Total	1.2%	-2.1%	-0.0%	-1.0%	-0.1%	-0.6%
All college	15.4%	-2.1%	3.5%	0.3%	1.0%	1.3%
Metropolitan Fringe Delta Counties:						
Elementary	0.1%	1.9%	-0.2%	-0.5%	0.0%	-0.0%
1-3 High School	-0.0%	0.8%	2.0%	-0.1%	0.5%	0.5%
4 High School	4.2%	3.9%	2.2%	1.1%	-0.0%	2.7%
1-3 College	10.2%	5.1%	2.6%	1.8%	0.0%	5.3%
4 College	16.2%	8.5%	2.7%	1.0%	-0.3%	6.1%
5 or more College	15.3%	7.7%	2.1%	2.6%	1.3%	5.0%
Total	5.5%	4.7%	2.0%	0.7%	0.1%	2.8%
All college	15.9%	8.1%	2.4%	1.8%	0.4%	5.7%
Metropolitan Non-Delta Counties:						
Elementary	14.6%	6.0%	1.6%	-1.4%	-1.4%	0.0%
1-3 High School	-2.0%	-1.7%	-2.0%	-2.6%	-3.0%	-2.3%
4 High School	-2.6%	-0.8%	-1.9%	-2.9%	-4.0%	-2.3%
1-3 College	-4.8%	0.2%	-2.2%	-3.3%	-4.5%	-2.6%
4 College	8.6%	2.6%	-1.8%	-3.5%	-4.5%	0.5%
5 or more College	<u>26.6%</u>	4.0%	-1.3%	-1.3%	-4.9%	1.4%
Total	-1.5%	0.6%	-1.6%	-2.5%	-2.7%	-1.5%
All college	12.0%	3.2%	-1.5%	-2.5%	-4.7%	0.9%

Cases of particularly high rates of either in- or out-migration are underlined in Table 2. All of these are found among the youngest age group, and most among the more highly educated, with the rural core delta counties experiencing very high rates of out-migration of all of the 18-24 year-olds from high school completion and up. The metropolitan core delta counties, on the other hand, show very high rates of in-migration of 18-24 year-olds with the highest levels of

**Table 3. Cumulative Probability for Synthetic Cohort Based on
Net Migration Rates, All Counties**

Age ->	18-24	25-34	35-44	45-64	65+
All Counties:					
Elementary	1.089	1.171	1.219	1.255	1.249
1-3 High School	1.009	1.024	1.036	1.032	1.009
4 High School	0.992	1.015	1.031	1.019	0.987
1-3 College	0.988	1.005	1.013	0.987	0.952
4 College	0.985	0.976	0.971	0.923	0.887
5 or more College	1.125	1.158	1.161	1.168	1.120
Total	1.001	1.021	1.035	1.034	1.016
All college	1.012	1.018	1.017	0.992	0.953
Rural Non-Delta Counties:					
Elementary	1.039	1.103	1.163	1.279	1.292
1-3 High School	1.091	1.185	1.269	1.443	1.462
4 High School	1.053	1.130	1.222	1.381	1.416
1-3 College	1.055	1.088	1.215	1.424	1.453
4 College	0.731	0.615	0.639	0.709	0.727
5 or more College	0.683	0.621	0.659	0.734	0.755
Total	1.042	1.073	1.155	1.296	1.315
All college	0.723	0.627	0.658	0.731	0.751
Rural Core Delta Counties:					
Elementary	0.933	0.898	0.912	0.929	0.921
1-3 High School	0.909	0.871	0.824	0.788	0.762
4 High School	0.767	0.705	0.680	0.669	0.654
1-3 College	0.635	0.543	0.515	0.487	0.465
4 College	0.685	0.624	0.544	0.558	0.515
5 or more College	0.493	0.444	0.459	0.352	0.339
Total	0.786	0.722	0.698	0.688	0.676
All college	0.648	0.587	0.554	0.500	0.469
Rural Fringe Delta Counties:					
Elementary	1.054	1.114	1.191	1.373	1.400
1-3 High School	0.983	1.060	1.149	1.399	1.432
4 High School	0.947	1.022	1.137	1.387	1.439
1-3 College	1.156	1.201	1.354	1.686	1.782
4 College	0.683	0.511	0.552	0.656	0.675
5 or more College	0.675	0.553	0.558	0.605	0.639
Total	0.989	1.004	1.098	1.306	1.340
All college	0.681	0.528	0.551	0.628	0.653

Table 3. (continued) Cumulative Probability for Synthetic Cohort Based on Net Migration Rates, All Counties

Age ->	18-24	25-34	35-44	45-64	65+
Metropolitan Core Delta Counties:					
Elementary	1.022	1.012	1.018	0.975	0.984
1-3 High School	1.056	0.997	0.985	0.941	0.926
4 High School	1.032	0.986	0.976	0.937	0.914
1-3 College	0.912	0.877	0.838	0.791	0.796
4 College	1.145	1.135	1.240	1.141	1.143
5 or more College	1.539	1.411	1.472	1.677	1.765
Total	1.016	0.973	0.973	0.936	0.934
All college	1.222	1.172	1.255	1.268	1.293
Metropolitan Fringe Delta Counties:					
Elementary	1.001	1.039	1.035	1.015	1.015
1-3 High School	1.000	1.015	1.056	1.052	1.064
4 High School	1.059	1.143	1.193	1.249	1.248
1-3 College	1.146	1.267	1.334	1.435	1.435
4 College	1.233	1.451	1.530	1.595	1.586
5 or more College	1.220	1.415	1.475	1.635	1.677
Total	1.078	1.181	1.229	1.263	1.266
All college	1.230	1.438	1.508	1.618	1.631
Metropolitan Non-Delta Counties:					
Elementary	1.211	1.361	1.404	1.327	1.290
1-3 High School	0.971	0.940	0.902	0.810	0.763
4 High School	0.964	0.948	0.912	0.811	0.748
1-3 College	0.933	0.936	0.895	0.783	0.714
4 College	1.123	1.183	1.140	0.990	0.902
5 or more College	1.391	1.504	1.466	1.392	1.259
Total	0.980	0.992	0.960	0.867	0.820
All college	1.172	1.249	1.210	1.095	0.995

education, and the rural non-delta counties seem to show a pattern similar to that of the rural core delta counties, only less pronounced. Finally, the metropolitan non-delta counties also experience high rates of in-migration of 18-24 year-olds with the highest levels of education.

There are not particularly high rates of either in- or out-migration among the older groups. However, it is interesting to note that the

Table 4. Migration rates (in percentages) of all college graduates.

Age ->	*18-24*	*25-34*	*35-44*	*45-64*	*65+*	*Total*
Total	0.8	0.3	- 0.1	- 0.6	- 2.0	- 0.1
Rural Non-Delta	- 20.7	-6.9	2.5	2.7	1.3	- 3.6
Rural Core Delta	- 26.7	-4.8	- 2.9	- 2.5	- 3.2	- 5.8
Rural Fringe Delta	- 24.0	-11.9	2.2	3.3	1.9	- 5.8
Metro Core Delta	15.4	- 2.1	3.5	0.3	1.0	1.3
Metro Fringe Delta	15.9	8.1	2.4	1.8	0.4	5.7
Metro Non-Delta	12.0	3.2	- 1.5	- 2.5	- 4.7	0.9

rural core delta counties continue disproportionately to lose the more highly educated persons, even in the 65+ age group, a pattern that is similar to metropolitan non-delta counties, but not really like any of the other delta groups.

One may view these tables of migration rates as a synthetic cohort, representing the experience of people as they pass from one age group to the next. They may then be converted to probabilities of staying, cumulated by multiplication, to estimate what proportion of a particular cohort might be expected to remain in a county group at any time during the sequence, or at the end of the sequence. In Table 3, this has been done for the respective age/education levels.[8] This captures a sense of what the delta region can expect to retain of the educational capital in which it invests.

The rural core delta counties could expect to retain, until its end, about 68% of the total cohort, but only about 47% of its most highly educated citizens, and only 34% of those who had graduate degrees. In contrast, it could expect to retain 92% of those with the lowest levels of education.

The rural fringe delta counties, in contrast, perform the best overall, retaining 134% of their original cohort, but only 65% of their most highly educated citizens. Not surprizingly, it is the metropolitan counties that retain most of their college graduates, 129% for the core

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metropolitan counties, 163% for the fringe metropolitan counties, but only 100 percent for the non-delta metropolitan counties.

Table 4 focuses upon the most highly educated, those who at least completed college, presenting their sequential migration rates. The pattern is one of major losses for all rural counties, with the rural non-delta and the rural fringe delta counties regaining a considerable portion of the human capital they lost early during the later years. The rural core delta counties are unique in showing losses at all ages, losses that are greatest among the young, and that contrast sharply with most of the rest of the county groups. Again, the county group that appears most nearly to approximate the experience of these rural core delta counties is the rural non-delta group. The rural fringe delta counties, although losing college graduates aged 18-24, subsequently experience either no net migration, or they actually make gains, gains which would appear nearly to recover the losses by the time a synthetic cohort reached old age.[9]

What these data show, in summary, is disproportionate losses in all rural counties, especially among the more highly educated. In the rural non-delta counties and, to an extent, in the rural fringe delta counties, later in-migration of highly educated persons partly compensates for these losses, but the net effect is still to lose the more highly educated persons. The rural fringe delta counties, as we expected, display migration patterns quite different from the rural core delta. They include, of course, many counties which had high rates of in-migration, especially of older retirees, during the 1970's (e. g., Baxter County in Arkansas).

Because of space limitations, state-by-state data cannot be presented here. Although the overall pattern is similar from state to state, the levels vary substantially. The rural non-delta and rural fringe delta counties of Arkansas, for example, lost highly educated young people at very high rates, but recovered highly educated persons later, starting as early as the 35-44 year group, resulting in net gains of 4.7% of college graduates for rural non-delta counties and 2.6% for rural fringe delta counties.

The larger issue that these results presents concerns human resource investment strategies for the delta. If, as seems to be the case, not more than 34% of a highly educated cohort can be expected to remain in the rural core delta, it is not surprising that local

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taxpayers in the rural core delta region would be ambivalent about paying the taxes necessary to make these investments.[10]   Although cross-sectional data such as that used here do not necessarily, by themselves, imply that increased educational attainment -- for an individual, or a group of individuals, for example -- would lead to increased probabilities of out-migration, there is substantial other data to support such a conclusion. Miller, Voth and Danforth (1984) have shown that a focus upon training, job training, and job development in the Community Resource Development (CRD) programs of the late 1950s and 1960s did lead to increased out-migration. Recent data from surveys done in seven cities and towns in southern and eastern Arkansas by the Southern Arkansas Rural Development Study (SARDS) seem to show that (1) intentions to leave the area are significantly affected by educational level, and especially by having technical training, and (2) by far the most frequent reason given for the intention to leave are job related.[11]

Thus, it seems clear that investment in the human resource base of the delta region *will increase out-migration of the very people whose educational and skill levels are being improved.* This poses, in dramatic form, the contrast between "place" and "people" rural development policies, the contrast which has frequently been made by Tweeten (1988). Some rural regions, such as a large number of the fringe delta counties, can at least expect to recoup the human resource losses as older, relatively highly educated, people begin to return. No such return is evident for the rural core delta counties during the 1975-80 period. It will be interesting to see whether it is during the 1985-90 period, when the data become available sometime later in 1993.

In a more practical vein, evidence of the extent of out-migration of educational capital suggests a need to develop methods for delta communities to retain contact with out-migrants so they may be enticed to return when opportunities for employment become available. The people of the delta region are supposed to have a strong sense of place, and a strong tie to their local communities. These ties could be used to advantage in attracting employers who need highly skilled employees and managers, simply by creating and retaining rosters of out-migrants who are ready to relocate to the delta region if and when opportunities reappear at home.

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Endnotes

[1] 1980 U.S. Census of Population, Census of Population, 1980: County to County Migration Flows (U. S. Bureau of the Census n.d.). This data set, which is available on tape on a state-by-state basis, is in the form of a matrix of all counties (or county equivalents) by all counties of the United States, with each cell containing tables with counts of the numbers of persons falling into a variety of socio-economic categories. It is based upon a 50% sample. This analysis is based upon Segment 5, Table M-17 (Sex by Years of School completed and Age). Other published reports based upon these data include Voss and Fuguitt, 1988 and 1989; Voth, Farmer, and Danforth (1990); Voth, Li, Killian and Farmer, 1992; and Voss and Fuguitt (1991). U. S. Bureau of the Census (1990) presents a discussion of the advantages and disadvantages of this data set compared with other sources.

[2] Except for the treatment of the metropolitan counties, this classification follows that of Reinschmeidt and Green. Whereas Reinschmeidt and Green called only two metropolitan counties, Crittenden and Jefferson in Arkansas, as "delta" counties, and identified another group of 24 metropolitan "delta adjacent" counties as "non-delta", we have created three categories of metropolitan counties, analogous to the rural counties. These are "metropolitan core delta counties," of which there are 5, including Crittenden and Jefferson in Arkansas, Shelby and Tipton in Tennessee, and Desoto in Mississippi; and "metropolitan fringe delta counties," of which there are 19.

[3] "Rural" is here equated with non-metropolitan.

[4] The rates of Table 4 were first converted to the implied single-year rates, which were then expanded to the number of years in the age interval, creating probabilities of remaining throughout the period. These probabilities were multiplied cumulatively to create Table 4.

[5] Reinschmeidt and Green (1989) state that they include 199 counties as delta counties (page 3). In fact, as has been done here, they list 200. LMDDC included, variously, 200, then 214, and, finally, a total of 219 as the result of a complicated political process (LMDDC, 1990, p. 167). We have used the Reinschmeidt and Green designation.

[6] Faulkner and Saline counties, part of the Little Rock/Pulaski County metropolitan area, were not included by LMDDC.

7 There is substantial variation among the states in these rates. The rural core delta counties are as follows: Arkansas shows -3.4%, Illinois and Kentucky have no rural core delta counties, Louisiana shows -5.2%, Missouri -3.9%, Mississippi -6.0%, and Tennessee also has none. Similar variation is found among rural fringe delta counties. Those in Arkansas, for example, include quite a number of Ozark mountain counties with relatively high rates of in-migration (3.1%). The other states' rates for the rural fringe delta counties were Illinois (6.0%), Kentucky (1.1%), Louisiana (2.5%), Missouri (3.6%), Mississippi (-1.2%), and Tennessee (1.1%).

8 Long and Boertlein summarize what is known about the relationship among migration measures based upon different time intervals. It is important to note that these measures display very complicated relationships to each other because of their different treatment of repeat and return migration. Shorter intervals display rates that are far higher than would be expected, compared to longer intervals. Fortunately, this is not true of net migration, which is used here. (Long and Boertlein, 1990).

9 Arkansas, which experienced substantial in-migration of retirees during the 1970-80 decade, shows this reversal pattern dramatically. Its non-delta rural counties lost the most highly educated young people, but gained back this educational capital among elderly persons, starting as early as the 45-64 year period (Voth, et al., 1989). The successive rates for Arkansas of all college graduates are -34.7%, -2.0%, 10.1%, 19.3%, 15.9%, for a total of 4.7%.

10 This assumes, of course, that such calculations enter into these decisions. In fact, much of the real estate in the delta region is in the hands of relatively affluent whites, many of whom send their children to private schools and to colleges and universities outside the region, outside the state, and even outside the country. And, incidentally, schools in the delta region -- of Arkansas, at least -- already depend more heavily upon state and federal sources of funds than any other county group.

11 These results have not yet been published. Data were collected by personal interview in Arkadelphia, Hot Springs, Camden, Forrest City, Pine Bluff, Magnolia, and Malvern. The relevant data show intentions to migrate as high as 35% among those with technical training, the highest of any group. The relationship between educational levels and intention to migrate appears to be curvilinear, peaking among those with "some college," and/or those having received technical training, and declining beyond this. This is consistent with our 1975-80 migration data for the rural core delta counties.

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