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Abstract

We provide a comparative analysis of county-level poverty in the two poorest regions of the United States—the Texas Borderland and the Lower Mississippi Delta—with a special focus on differences by family type. Our results reveal important regional variation in both the prevalence of poverty and the composition of the poor population across major family types. Using OLS regression models of family type-specific poverty we demonstrate three key findings: 1) There are no significant regional differences in poverty levels by family type between the Borderland and the Delta, net of important structural factors that characterize the regions; 2) with the exception of the employment rate, the structural factors associated with poverty among married couple and single female-headed families are quite different; and 3) paradoxically, areas in the Borderland with high in-migration are especially likely to suffer from high married-couple family poverty. Our results suggest the need for regionally targeted and demographically tailored anti-poverty policies.

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1. Introduction

The Texas Borderland and Lower Mississippi Delta have long been the two poorest regions in the United States. Both are predominately rural and characterized by high shares of racial/ethnic minorities, Latinos in the Borderland and blacks in the Delta. Indeed, the high and persistent poverty suffered by the residents of these regions has much to do with the unique social position of racial and ethnic minorities in the rural U.S. (Harris and Worthen 2003; Saenz and Torres 2003; Snipp 1996), populations who share the enduring legacy of living in the shadows of “the historical remnants of institutions explicitly created to conquer, oppress, and maintain their subordinate position in society...labor contractors, immigration authorities, slavery, Jim Crow, sharecropping, plantation agriculture” (Snipp 1996:127).⁷

Despite these similarities, however, the Borderland and the Delta also differ in many notable respects. One such example is the structure of families in the two regions. In 2000, for example, 73.5% of Borderland families were headed by married-couples compared to 62.2% of families in the Delta. In that same year, 21.7% of Borderland families were headed by single mothers, while this was true of 31.3% of Delta families. These differences are even more pronounced when race and ethnicity are considered. Whereas the family structure of non-Hispanic whites is very similar between the two regions,⁸ there are significant differences in the family structure of Borderland Latinos and Delta blacks. In 2000, 72.6% of Latino families in the Borderland were headed by married couples, compared to only 39.3% of black families in the Delta. And while 22.7% of Latino families in the Borderland were headed by single mothers, this family type characterized more than half (53.6%) of black families in the Delta.

Family structure is, of course, a focal point of the national dialogue on poverty in the U.S. In particular, much concern has centered on the disproportionate economic hardship faced by single female-headed families relative to those living in other family and household arrangements (Bianchi 1999; Lichter and Jayakody 2002). In 2006, for example, the poverty rate stood at 28.3% for single female-headed families compared to only 4.9% for families headed by married couples (DeNavas-Walt, Proctor, and Smith 2007). The substantial differences in family structure observed in the Borderland versus the Delta raise the prospect of important variation in the dynamics of family poverty in the two poorest regions in the U.S. Our paper addresses this issue by providing a comparative analysis of poverty by family type in the Borderland and the Delta.

⁷ The history of American Indians and the reservation system are another striking example of this reality.

⁸ In the Borderland, 79.1 percent of non-Hispanic whites lived in married couple-headed families, while 16.2% lived in families headed by single mothers. In the Delta, the comparable numbers were 78.0% and 16.0%, respectively.

While a significant body of literature has examined economic hardship in these two regions, little research to date has taken an explicitly comparative approach. Research has either focused on the experience of the Borderland (Betts and Slottje 1994; Davila and Mattila 1985; Maril 1989; Saenz and Ballejos 1993; Tan and Ryan 2001) or the experience of the Delta (Allen-Smith, Wimberley, and Morris 2000; Brown, Xu, and Toth 1998; Deseran and Singelmann 1993; Gray 1991; Hyland and Timberlake 1993; Lee and Singelmann 2006), but it has not been structured to actually compare the poverty situation in these two regions.⁹ We provide such a comparative analysis here, with the aim of parsing out similarities and differences in the patterns and aggregate mechanisms that influence poverty in the Borderland and the Delta across major family types.

2. Persistent regional poverty

Researchers are increasingly recognizing the importance of geographic space and place as key dimensions of social inequality (Gans 2002; Gieryn 2000; Lobao 2004; Lobao and Saenz 2002; Lobao, Hooks, and Tickamyer 2007; Tickamyer 2000). This is a valuable development in stratification research because the study of spatial inequality stands to provide a pivotal linkage between questions regarding differential resource allocation across social groups (i.e., class, race, gender, and other statuses) and issues of uneven regional development. The promise of this burgeoning area of research is the ability to disentangle “both the importance of where actors are located in geographic space and how geographic entities themselves are molded by and mold stratification” (Lobao, Hooks, and Tickamyer 2007:3).

Research has clearly demonstrated enduring relationships between geographic location and poverty (Lichter and Johnson 2007; Lyson and Falk 1993; Massey and Denton 1993; Rural Sociological Society Task Force on Persistent Rural Poverty 1993; Tickamyer and Duncan 1990; Wilson 1980). One example is the high and persistent poverty that characterizes particular regions of the U.S., such as Appalachia, Native American reservations, the Borderland, and the Delta. Indeed, recognition of the acute economic distress faced by these persistently poor regions is not new. During the U.S. War on Poverty in the 1960s, the President’s National Advisory Commission on Rural Poverty issued a report entitled *The People Left Behind* (1967). In it, the commission noted that not only were poverty rates generally higher in rural compared to urban areas, but that the very poorest regions of the country were in the rural South and

⁹ For an exception devoted to welfare reform, see Pickering et al. (2006). See Duncan (1999) for a comparative treatment of poverty in the Delta, Appalachia, and New England.

Southwest and, with the exception of Appalachia, were characterized by high concentrations of racial/ethnic minorities. Forty years later, these observations remain sadly accurate. The two poorest regions in the country continue to be the Borderland, characterized by a high percentage of Latinos, and the Delta, characterized by a high percentage of blacks. The acute and persistent economic distress faced by the residents of these regions make the Borderland and the Delta important case studies in the quest to understand stratification in American society.

The conditions in the Borderland are strongly linked to the legacy of the Mexican labor exploitation and the region's spatial location along the U.S.-Mexico border (Betts and Slottje 1994; Snipp 1996). U.S. agribusiness has long relied on low-wage migrant labor, the overwhelming majority of which has been supplied by workers of Mexican descent (Snipp 1996). More recently, labor-intensive manufacturing plants known as *maquiladoras*, which are located primarily on the Mexican side of the border and rely heavily on low-wage Mexican labor, have become an important part of this dynamic. While the original goal was to establish "twin plants" on the U.S. side of the border, the concentration of industrial development on the Mexican side has actually served to keep the cross-border regional reference wage low and make development on the U.S. side less economically attractive because the costs of doing businesses are lower in Mexico. Both the U.S. and Mexican governments have used a variety of policies to facilitate these relationships, including the Bracero Program (1942-1964), the Border Industrialization Program (1965-present), and most recently the North American Free Trade Agreement (1994-present). These policies and U.S. demand for goods and labor have made the Borderland an important conduit for labor and trade. But the region itself has been able to capture very little economic development in the way of value-added industries, making the economy of the Borderland "one dimensional with regard to trade, mainly transportation and warehousing, leaving little possibility for growth in other areas" (Yoskowitz, Giermanski, and Pena-Sanchez 2002:30).

One outcome of this exploitative relationship has been the formation of *colonias*. In response to the need for inexpensive housing along the Texas-Mexico border, developers have created unincorporated subdivisions comprised of small lots with little or no infrastructure. According to the Texas Secretary of State (2009), "People with low-incomes often buy the lots through a contract for deed, a property financing method whereby developers typically offer a low down payment and low monthly payments but no title to the property until the final payment is made. Houses in colonias are generally constructed in phases by their owners and may lack electricity, plumbing and other basic amenities." It is estimated that approximately 400,000 residents of the Borderland reside in colonias, and although some are immigrants, about two-thirds of all residents and 85% of those under the age of 18 were born in the U.S. (Texas Secretary of State 2009).

The conditions in the Delta are strongly linked to the legacy of slavery and the institutional mechanisms used to facilitate black labor exploitation after its abolition (Hyland and Timberlake 1993; Snipp 1996). The Delta is home to the exceptionally fertile soil of the Mississippi River floodplain—a resource accessed through considerable human effort to channel the river, drain swamps and wetlands, and control flooding—and has long been characterized by intensive plantation agriculture, cotton production in particular. Historically, landowners imported African slaves to work their plantations. After the abolition of slavery, the power elite in this region devised other forms of institutional racism and economic servitude (i.e., Jim Crow laws; sharecropping; tenant farming) to maintain rigid class and racial caste boundaries. Further, the Delta's natural ecology and the absence of rail and road systems served to isolate the region and allowed plantation owners and county governments to wield nearly absolute power. This power was used to limit local educational and economic opportunities in order to perpetuate an economically dependent agricultural workforce. As noted by Hyland and Timberlake (1993:78), "The Jim Crow South provided a potent system for keeping African Americans economically oppressed and socially separate. Coupled with effective elite opposition to industrial development in the Delta, this system assured planters that there would be continued access to cheap labor for chopping cotton in the spring and harvesting in the fall."

Out-migration from the region represented the only recourse for many Delta blacks (and poor landless whites). Fleeing the repressive social environment and forced from the land by agricultural mechanization, millions of blacks left the South between the early 1900s and the 1970s, migrating first to Northern cities and later to urban areas in the West (Lemann 1991). Today, the Delta continues to be characterized by out-migration, underdevelopment, and racial inequality.

In sum, the high and persistent poverty found in the Borderland and the Delta is rooted in the historical legacies and contemporary consequences of systematic racism, oppression, subordination, exploitation, and underdevelopment. Beyond being home to high concentrations of racial/ethnic minority populations and being the very poorest places in American society, another characteristic the regions share in common is that they are spatially and socially isolated from the American mainstream.¹⁰ On the other hand, the Borderland and the Delta are also unique in many respects. Not only are the cultural histories of these regions quite different, so are their experiences with demographic and economic change. Further, as noted in the introduction, the Borderland and the Delta are characterized by quite different family structures. Taken

¹⁰ It is important to note this isolation is in many ways a product of the relationships these regions have with the broader U.S. social system. Both the Borderland and the Delta have been characterized as part of the economic "periphery" and as "internal colonies" in U.S. society (Lyson and Falk 1993).

together, these similarities and differences help to motivate a need for comparative analysis.

3. Family structure and poverty

Much research and policy attention has been devoted to the rise of single female-headed families and the disproportionate risk of poverty faced by unmarried women and their children (Bianchi 1999; Lichter and Jayakody 2002). Bianchi (1999) outlines two key trends that have contributed to the “feminization” and “juvenilization” of poverty in the U.S. over recent decades. First, rising rates of nonmarriage and out-of-wedlock childbearing have increased the proportion of families headed by young, never-married mothers, a group whose economic disadvantages are further complicated by problems obtaining child support from nonresident fathers. This trend has served to disproportionately concentrate poverty among single mothers and their children. Second, the success of transfer programs aimed at reducing poverty among older Americans (e.g., Social Security) and the absence of a reciprocal effort to craft income support programs for children, has fueled a divergence in the economic fortunes of working-age and older adults compared to the young. In 2006, for example, the national poverty rate stood at 17.4% for those less than 18 years of age, 10.8% for those aged 18 to 64 years, and 9.4% for those aged 65 years and older (DeNavas-Walt, Proctor, and Smith 2007). Among children, the inequalities by family type are even starker. In 2006, the child poverty rate was 42.1% for those living in single female-headed families compared to 8.1% for those living in families headed by married couples (DeNavas-Walt, Proctor, and Smith 2007).

The welfare reform bill of 1996, which ended cash assistance as a means-tested entitlement and placed strict time limits on the receipt of cash benefits, has heightened concern over the economic circumstances of low-income single mothers and their children, because their fortunes are now more dependent on the vicissitudes of the labor market than was true previously (Lichter and Jayakody 2002). In recognition of the important relationship between family structure and poverty, welfare reform expressly sought to reduce poverty and welfare dependency by promoting marriage and encouraging “the formation and maintenance of two-parent families” (H.R. 3734). Research has noted the economic benefits of marriage, especially for women from disadvantaged backgrounds, but has also cautioned that marriage-promotion should be viewed as a compliment to, rather than a substitute for, programs aimed at investing in human capital and expanding economic opportunity (Lichter, Graefe, and Brown 2003). In fact, Lichter, Graefe, and Brown (2003) found that disadvantaged women who got married and later divorced are even worse off after the divorce than they had been prior

to marriage. And Lee, Singelmann, and Etuk (2006) have shown that human capital acquisition provides greater income gains for women on welfare than marriage does. Regardless, the point here is that the centrality of the issue of family structure in the poverty research and policy discourse makes understanding the different aggregate mechanisms that influence poverty across major family types an important endeavor.

4. Aggregate correlates of poverty

The literature on place-based poverty suggests the importance of a variety of aggregate-level relationships. While not an exhaustive account, the aggregate mechanisms that influence poverty can be roughly categorized along four key dimensions: employment structure, population structure, human capital, and nonmetropolitan (nonmetro) residence. We elaborate on each of these four dimensions below.

4.1 Employment structure

A large body of research has shown that place-based poverty is strongly linked to the local employment structure. For example, research has shown the percentages of total employment in the manufacturing sector (Cotter 2002; Rupasingha and Goetz 2007) and the finance, insurance, and real estate (FIRE) sector (Parisi et al. 2003; Rupasingha and Goetz 2007; Singelmann 1978) are negatively associated with aggregate poverty levels. Jobs in these sectors are generally considered to be more stable and provide employees better compensation than is true of other sectors. In addition, a strong FIRE sector helps to underwrite other forms of economic activity. Research has shown that the percentage of total employment in agriculture tends to be positively related to poverty (Albrecht, Albrecht, and Albrecht 2000; Levernier, Partridge, and Rickman 2000). This is due in part to the fact that agriculture tends to predominate in rural areas with less diversified economies, and is also characterized by particularly high rates of underemployment compared to other industries (Slack and Jensen 2004). Research has also found the percentage of the working age population that is employed (versus unemployed or not in the labor force) is negatively associated with poverty (Cotter 2002; Gunderson 2006). This stands to reason since employment tends to be the strategy by which most non-wealthy Americans earn a living. In sum, the literature makes clear that the local employment structure—both in terms of overall employment and the industrial mix—is an important consideration for understanding place-based poverty.

4.2 Population structure

The literature has also demonstrated that the population structure of places is strongly related to prevailing poverty levels. For example, positive net migration is often considered a proxy for a strong economy. Research has found that migrants are drawn to areas with stronger job opportunities (Frey and Liaw 2005), while areas people are leaving tend to be associated with higher poverty rates (Rupasingha and Goetz 2007). Age structure has also been shown to be an important correlate of poverty, with places characterized by a younger age structure tending to have higher levels of poverty (Cotter 2002; Rupasingha and Goetz 2007) due to the aforementioned economic disadvantages faced by children. Immigration is another factor that influences poverty. While immigrants themselves tend to suffer from higher rates of poverty than is true of their native counterparts (Larsen 2004), at the aggregate level the percentage of the population that is foreign-born has actually been shown to be associated with lower levels of poverty (Rupasingha and Goetz 2007), likely reflecting the “pull” of immigrants to more attractive labor markets. Lastly, places characterized by higher minority concentrations also tend to be characterized by higher poverty rates (Friedman and Lichter 1998; Rupasingha and Goetz 2007; Saenz 1997b; Voss et al. 2006) reflecting the myriad social disadvantages faced by such groups.

4.3 Human capital

A large body of literature has demonstrated significant linkages between aggregate-level human capital and poverty. Areas characterized by lower levels of educational attainment have consistently been shown to be home to higher poverty rates (Friedman and Lichter 1998; Rupasingha and Goetz 2007; Voss et al. 2006). English-language fluency has also been identified as an important determinant of poverty among immigrant populations (Crowley, Lichter, and Qian 2006; Davila and Mora 2000; Davila, Bohara, and Saenz 1993). These variables point to the labor market disadvantages faced by populations with less marketable credentials and skills, as well as to the fact that many employers demand more educated workforces and seek locales where such workers exist.

4.4 Nonmetro residence

Finally, an extensive literature has examined the higher incidence of poverty in rural compared to urban areas (see Jensen, McLaughlin, and Slack 2003; Rural Sociological

Society Task Force on Persistent Rural Poverty 1993). The economic disadvantages of rurality operate along many dimensions, including issues related to physical distance and accessibility, and the fact that many industries depend upon economies of agglomeration.

5. Current study

In this study we seek to determine how the prevalence of county-level poverty differs in the Borderland and the Delta across major family types. We also seek to disentangle differences in the mechanisms that influence county-level family poverty in these two regions. More specifically, we investigate how aggregate poverty levels differ by family type relative to four key dimensions of county-level characteristics: employment structure, population structure, human capital, and nonmetro residence.¹¹ Our methods for accomplishing these objectives are outlined below.

6. Data and methods

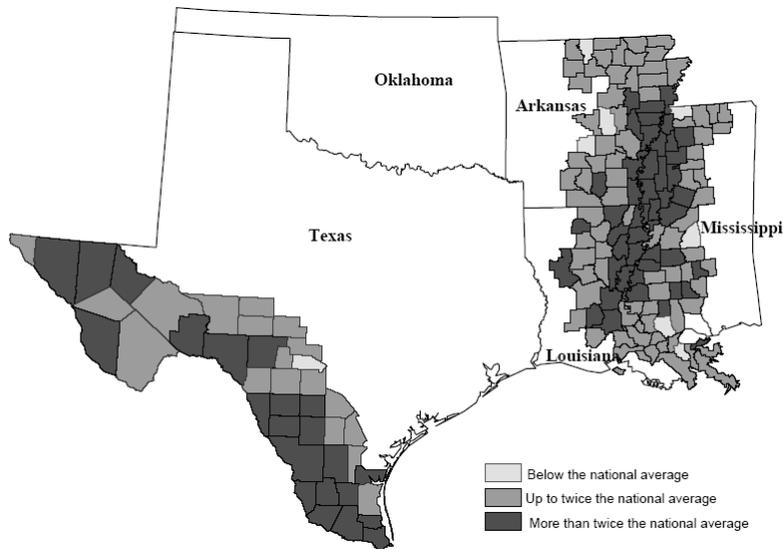
6.1 Data and regional definitions

Our research draws on county-level data from the 1990 and 2000 U.S. Census Summary Files. Following Saenz (1997a), we define the Borderland as all Texas counties whose largest city is within 100 miles of the U.S.-Mexico border. Illustrated in Figure 1, the Borderland stretches along the Rio Grande River from El Paso down to Brownsville and includes a total of 41 counties. In 2000, Latinos represented 80.2% of the total population in this region. In fact, Latinos were the numerical majority in 30 of the 41 Borderland counties, reaching levels as high as 98% of the population. Also illustrated in Figure 1, we define the Delta by starting with the geography delineated by the Lower Mississippi Delta Development Commission (established by the U.S. Congress in the 1980s, now the Delta Regional Authority), but further restrict our

¹¹ The 1990 U.S. Census, from which our independent variables are drawn, defined metro areas as central counties with one or more cities of at least 50,000 residents, or with an urbanized area of 50,000 or more and a total area population of at least 100,000. Outlying counties were also defined as metro if they were both economically tied to the central counties, as measured by daily commuting, and displayed a level of "metropolitan character" based on population density, urbanization, and population growth. All counties not qualifying as metro under these criteria were defined as nonmetro.

analysis to the core Delta counties in Arkansas, Louisiana, and Mississippi.¹² This region follows the Mississippi River from northeastern Arkansas down to New Orleans and includes a total of 133 counties. In 2000, blacks made up 35% of the total population in the Delta and represented the numerical majority in 30 of the 133 counties in the region, reaching levels as high as 86% of the population.

Figure 1: Poverty in the Borderland and Delta relative to the national average, 2000



Source: 2000 U.S. Census Summary Files

Figure 1 also demonstrates the extent to which poverty afflicts the residents of these two regions. In 2000, 40 of the 41 counties in the Borderland had poverty rates that exceeded the national average (i.e., poverty rates in excess of 12.4%); the same was true for all but 7 of the 133 counties in the Delta. Indeed, many of the counties in these regions had poverty rates more than *twice* the national average (i.e., poverty rates in

¹² The total geography defined by the Delta Regional Authority includes 240 counties in eight states: Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee. We chose to focus on the core of this region because it better conforms to social, rather than political, definitions of the “Delta” and it is also where poverty is most concentrated.

excess of 24.8%).¹³ Further, the majority of the counties in both the Borderland and the Delta are designated as “persistently poor” by the Economic Research Service of the U.S. Department of Agriculture, a designation applied to counties in which 20% or more of the residents have been living in poverty in each of the last four decennial censuses (i.e., 1970, 1980, 1990, and 2000). Clearly, these are regions plagued by high and deeply entrenched poverty, making them important cases for study in the pursuit of understanding American stratification.

6.2 Measures

Our units of analysis are counties. Our dependent variable, drawn from the 2000 U.S. Census Summary Files, is the percentage of families with related children whose total family income in the year preceding the 2000 Census fell below the official poverty thresholds.¹⁴ We further disaggregate family poverty by family type; specifically those headed by married couples, single females, and single males. We then restrict our multivariate analysis to the circumstances of married couple and single female-headed families, due to the low number of families with children headed by unmarried males.

Our independent variables are drawn from the 1990 U.S. Census Summary Files and are based on the four dimensions of aggregate-level poverty predictors outlined previously: employment structure, population structure, human capital, and nonmetro residence. More specifically, because overall employment and the industrial mix in an area have been shown to be important considerations in understanding place-based poverty, we examine the following four variables related to county-level employment structure: the percentage of the working age population that is employed, and the percentages employed in the agricultural, manufacturing, and FIRE sectors.¹⁵ Since research has also shown the population structure of places to be significantly linked to local poverty rates, we examine four variables related to county-level population structure: net migration, the percentage of the population under 15 years of age, the percentage that is foreign-born, and the percentage that are members of the predominate racial/ethnic minority group in the area (i.e., percent Latino in the Borderland and percent black in the Delta). Because aggregate human capital levels have been shown to be important predictors of county-level poverty, we assess two variables related to

¹³ These numbers reflect poverty rates for the total population. In what follows, we will focus on poverty among *families* specifically.

¹⁴ See U.S. Census Bureau (2008) for further information on the official definition of the poverty thresholds.

¹⁵ We also assessed the influence of low-wage service sector employment, but found the set of variables outlined above to hold the best explanatory power.

county-level human capital: the percentage of the population aged 25 years and older with less than a high school degree or equivalent, and the percentage that does not speak English well or at all. Last, since a large literature has revealed economic disadvantages associated with living in rural areas, we consider nonmetro residence as a predictor of county-level poverty. Descriptive statistics for each of these variables are presented in Table 1 and demonstrate similarities and differences in the structural characteristics of the two regions.

Table 1: Distribution of independent variables, 1990

Variables	Borderland				Delta			
	Mean	S.D.	Min.	Max.	Mean	S.D.	Min.	Max.
Percent employed	60.8	7.7	47.7	80.5	60.7	6.7	31.5	74.8
Percent agriculture	12.2	7.2	1.3	36.5	7.1	6.0	0.7	34.3
Percent manufacturing	6.0	4.0	0.6	17.5	21.6	8.6	4.6	47.8
Percent FIRE	3.9	1.3	1.9	7.4	4.1	1.5	0.5	9.7
Net migration	1.9	17.5	-23.3	60.8	-0.2	10.0	-20.2	39.5
Percent under age 15	28.0	3.9	19.1	34.5	25.9	3.2	17.2	33.5
Percent foreign-born	12.6	9.1	1.8	35.9	0.6	0.8	0.0	5.9
Percent minority	63.2	23.8	10.9	97.5	33.5	20.1	0.0	86.0
Percent less than h.s.	45.7	10.7	23.3	45.7	41.1	7.6	19.5	56.3
Percent no English	13.0	7.1	1.4	31.4	0.5	0.6	0.0	3.5
Nonmetro	89.0	–	–	–	81.0	–	–	–

Source: 1990 U.S. Census Summary Files.

Notes: S.D. = standard deviation. Percent minority measures the percentage of the population that is Latino in the Borderland and the percentage that is black in the Delta. Net migration is measured for the period spanning 1990-1999. Nonmetro is a dummy variable, expressed here as a percentage of the counties in a region that are nonmetro. Borderland N=38. Delta N=133.

6.3 Analytic strategy

We approach the analysis by first examining descriptive statistics to compare the contours of county-level poverty by family type in the Borderland and the Delta. We then estimate ordinary least squares (OLS) regression models using a lagged panel design to ascertain the manner in which family type-specific poverty is related to county-level employment structure, population structure, human capital, and nonmetro residence across the two regions. As stated earlier, the regression analysis is restricted to families (with related children present) headed by married couples and single mothers (single male-headed families were excluded owing to low numbers). We further restrict the analysis to counties in which there were at least 30 married couple

and single female-headed families, a cutoff that resulted in having to drop three sparsely populated counties in the Borderland (N=38).

We use a lagged panel design, a modeling technique in which independent variables are measured at an earlier point in time compared to the dependent variable. As outlined above, our independent variables are county-level measures drawn from 1990 data, while our dependent variables are based on 2000 data. Lagged panel designs are more rigorous than simple cross-sectional analysis, because they are able to address problems associated with endogeneity and simultaneity bias. Due to the small number of counties in the Borderland, the estimation of region-specific models was not statistically tenable. We therefore estimate regionally pooled models, which include a regional dummy variable (Borderland=1), in addition to the structural predictors suggested by the literature.

Before finalizing our models, we examined a series of regression diagnostics to assess statistical threats to the accuracy of our models, including multicollinearity and spatial autocorrelation. Diagnostics for multicollinearity revealed problems with the inclusion of the effects of limited English language ability in the presence of other predictors, forcing us to drop this variable from the analysis. Diagnostics for spatial autocorrelation,¹⁶ an issue that has been identified in national-level poverty studies (Rupasingha and Goetz 2007; Voss et al. 2006), did not indicate that models accounting for spatial effects were warranted.

7. Results

7.1 Prevalence of poverty by family type

We begin with a descriptive account of poverty by family type in the Borderland and the Delta with comparisons to national averages. Table 2 shows the percentage poor by family type for the two regions and the U.S. as a whole. Overall, family poverty is roughly twice the national average (13.6%) in both the Borderland and the Delta (29.4% and 25.5%, respectively). The results show that single female-headed families suffer similarly high rates of poverty in the two regions. While nationally about one third (34.4%) of all families headed by single females are poor, in both the Borderland

¹⁶ When using geographically defined units of analysis, it is often the case that variables associated with the units are not fully independent from one another. Significant levels of spatial clustering can potentially result in inaccurate statistical inferences when using standard linear regression techniques. More specifically, spatial autocorrelation can result from two key types of problems: 1) spatial error (i.e., correlation across space in the error terms), and 2) spatial lag (i.e., correlation across space in measured variables and error terms).

and the Delta over half of these families have incomes below the poverty line (55.2% and 52.2%, respectively). In comparison, poverty rates among married couple-headed families are much lower, though in both regions married-couple family poverty is still well above the national average. The poverty rate for families headed by married couples in the Delta (12.1%) is slightly less than twice the national average (6.6%), while the poverty rate for married couple-headed families in the Borderland (22.0%) is more than three times the national rate. Clearly, family poverty is much more severe in the Borderland and the Delta than it is at the national level. Single female-headed families face extremely high poverty rates—in excess of 50 percent in both regions. However, the results also show substantially higher poverty rates for married-couple families in the Borderland compared to the Delta. These results suggest that marriage provides Borderland residents less protection from poverty than is the case among their Delta counterparts. Stated another way, Borderland residents appear to reap fewer economic benefits from marriage than is true elsewhere.

Table 2: Percent poor by family type, 2000

Family Type	United States	Borderland	Delta
All families	13.6	29.4	25.5
Married couple-headed	6.6	22.0	12.1
Single female-headed	34.3	55.2	52.2
Single male-headed	17.7	33.0	28.9

Source: 2000 U.S. Census Summary Files

Notes: Analysis restricted to families with related children under age 18. Borderland N=38. Delta N=133.

7.2 Proportion of poor by family type

Table 3 shows the proportion of the poor population by family type nationally, for the Borderland, and for the Delta. These data demonstrate that the proportion of the poor population differs greatly by family type across the two regions. In the Delta, the proportion of the poor by family type largely mirrors the national numbers, though there are slight differences. The proportion of the poor population represented by families headed by single mothers is slightly higher in the Delta compared to the nation (61.6% versus 57.0%, respectively), while the proportion of married couple-headed families is slightly lower (30.7% versus 34.3%, respectively). In the Borderland, however, the distribution of the poor population by family type differs substantially from the distributions in the Delta and the nation. Among poor Borderland families, the majority (55.2%) live in families headed by married couples, with comparatively fewer living in

families headed by single females (38.6%). In terms of regional comparisons the key point is straightforward: In the Delta, poverty is more concentrated among single female-headed families, while in the Borderland it is married couple-headed families that represent the greatest share of the poor.¹⁷

Table 3: Proportion poor by family type, 2000

Family Type	United States	Borderland	Delta
All families	100.0	100.0	100.0
Married couple-headed	34.3	55.2	30.7
Single female-headed	57.0	38.6	61.6
Single male-headed	8.7	6.2	7.6

Source: 2000 U.S. Census Summary Files

Notes: Analysis restricted to families with related children under age 18. Borderland N=38. Delta N=133.

7.3 Multivariate models of poverty levels by family type

Table 4 shows standardized OLS regression coefficients from regionally pooled lagged panel models of county-level poverty by family type in 2000. Each model includes a regional dummy variable measuring whether or not a given county is part of the Borderland (1=yes) versus the Delta, as well as structural variables tapping the local employment structure, population structure, human capital, and nonmetro status. The aim of these models is to assess the aggregate mechanisms that influence poverty by family type in these regions, as well as to determine whether regional differences hold net of these factors.

The models yield a number of important results. A key finding, given the aim of our analysis, is that, net of other factors, there are no significant regional differences in the poverty levels for either of the two major family types. That is, the regional differences in family type-specific poverty that do exist are explained by the differences between the two regions in the structural variables we include in our models.

Among married couple-headed families, the percentage of the working-age population that was employed in 1990 is shown to exert significant downward pressure

¹⁷ These differences are due in part to the regional variations in family structure—and those related to the intersection of race/ethnicity and family structure in particular—outlined in the introduction. With this in mind, however, the information in Table 3 remains an important consideration. Whereas Table 2 speaks to the question of which family types suffer from the highest poverty rates, Table 3 speaks to the question of how the poor are distributed across family types. These are both important, yet qualitatively different, questions.

on poverty a decade later; where greater proportions of working-age people are employed, poverty rates will be lower. At the same time, the results also indicate an important influence of employment in particular economic sectors. Specifically, a higher percentage of agricultural employment in 1990 is shown to be associated with significantly higher married couple-family poverty in 2000. This relationship is likely indicative of the agricultural labor exploitation and systematic underdevelopment outlined earlier in the paper (Betts and Slottje 1994; Hyland and Timberlake 1993; Snipp 1996), as well as the particularly high rates of underemployment that plague agricultural workers compared to those employed in other sectors (Slack and Jensen 2004). These results also suggest that issues related to immigrant assimilation and low educational attainment are special concerns for the economic well-being of families headed by married couples. Again, these variables speak to legacies of exploitation and underdevelopment. Last, we tested two-way interactions between the Borderland dummy and each of the other independent variables to assess whether the structural effects differed by region.¹⁸ The results show that poverty among married couples is particularly high in areas of the Borderland characterized by high levels of in-migration. This finding helps to shed light on the disproportionately high poverty afflicting married couple-headed families in the Borderland and underscores a key difference between these two very poor regions. Positive net migration is typically viewed as a proxy for a strong economy and thus tends to be associated with lower levels of poverty (Rupasingha and Goetz 2007). But the unique legacy of the Borderland—the exploitation of migrant labor facilitated by U.S.-Mexico border relations—has resulted in the paradox of high in-migration and high poverty, a situation illustrated by the growth of the colonias.

Not surprisingly, higher local employment rates are also shown to be associated with lower poverty levels among single female-headed families a decade later. Notably, however, this is the only significant variable the models for married couple and single female-headed families have in common. Poverty rates among families headed by single mothers are shown to be significantly lower in areas characterized by higher rates of net migration. This suggests that areas experiencing growth provide particular opportunities for women. Poverty rates among single female-headed families are also shown to be higher where a greater proportion of the population is under 15 years of age and for nonmetro areas. The first finding points to the linkages between the “feminization” and “juvenilization” of poverty (Bianchi 1999), while the latter is suggestive of the fact that rural women receive lower labor market returns (i.e.,

¹⁸ While we tested two-way interactions between the Borderland dummy and each of the independent variables, for the sake of parsimony, our model includes only the statistically significant interaction with net migration in Table 4 (i.e., statistically insignificant interaction effects were dropped from the model).

earnings) for their human capital and occupation compared to their urban counterparts (McLaughlin and Perman 1991) and face more restricted employment opportunities. Last, we tested two-way interactions between the Borderland dummy variable and each of the other independent variables, but found no significant interaction effects associated with poverty among single female-headed families.

Table 4: OLS lagged panel regression models of county-level poverty by family type, 2000

Independent variables	Married couple-headed		Single female-headed
Borderland (yes=1)	0.039	0.032	-0.005
Percent employed	-0.151**	-0.137*	-0.245**
Percent agriculture	0.238***	0.235***	0.061
Percent manufacturing	-0.059	-0.072	-0.183
Percent FIRE	-0.005	-0.013	-0.073
Net migration	0.033	-0.005	-0.282***
Percent under age 15	0.065	0.062	0.231*
Percent foreign-born	0.416***	0.352***	-0.076
Percent minority	0.068	0.057	-0.074
Percent less than h.s.	0.273***	0.284***	0.149
Nonmetro (yes=1)	0.054	0.053	0.222**
Borderland * Net migration	—	0.105*	—
Adjusted R-square	0.805	0.810	0.554

Source: 1990 and 2000 U.S. Census Summary Files.

Notes: Cell entries are standardized OLS coefficients. Percent minority equals percent Latino in the Borderland and percent black in the Delta. N=171. * p < .05; ** p < .01; *** p < .001

8. Conclusion and implications

Using county-level data from the 1990 and 2000 U.S. Census Summary Files, we present a comparative analysis of poverty in the two poorest regions in the U.S.—the Texas Borderland and the Lower Mississippi Delta—with a special focus on differences by family type. Our goal was to examine the contours of family type-specific poverty in these regions and to ascertain the manner in which a variety of aggregate mechanisms (i.e., employment structure, population structure, human capital, and nonmetro residence) influence poverty levels for families headed by married couples versus single mothers. Our results showed that single female-headed families suffer similarly high rates of poverty in the Borderland (55.2%) and the Delta (52.2%), while married

couple-headed families are comparatively more disadvantaged in the Borderland (22.0%) than in the Delta (12.1%). Our results also demonstrated that the proportion of the poor population differs greatly by family type across the two regions. In the Borderland, the majority of the poor reside in married-couple families (55.2%), while in the Delta the majority of the poor live in families headed by single females (61.6%). Finally, our regression models demonstrated three key findings: 1) There are no significant regional differences in poverty levels by family type between the Borderland and the Delta, net of important structural factors that characterize the regions; 2) with the exception of the employment rate, the structural factors associated with poverty among married couples and single female-headed families are quite different; and 3) paradoxically, areas in the Borderland with high in-migration are especially likely to suffer from high married-couple family poverty.

The findings from this study represent an important contribution to the scholarship on stratification in American society. Both the Borderland and Delta are home to significant populations of people who have been especially marginalized from the social and economic mainstream (Betts and Slottje 1994; Hyland and Timberlake 1993; Lichter and Johnson 2007; Lyson and Falk 1993; Rural Sociological Society Task Force on Persistent Rural Poverty 1993). Indeed, people in these regions live in direct spatial proximity to the historical institutions that manufactured that reality (Snipp 1996). Our research speaks to the importance of the consideration of geographic space and place (Gans 2002; Gieryn 2000; Lobao 2004; Lobao and Saenz 2002; Lobao, Hooks, and Tickamyer 2007; Tickamyer 2000) and family type (Bianchi 1999; Lichter and Jayakody 2002; Lichter, Graefe, and Brown 2003) as key axes of inequality. While regional differences in poverty by family type certainly exist between the Borderland and the Delta, our research shows these differences are explained by differentials in the structural factors at play in these regions. Further, our research shows that the aggregate mechanisms associated with poverty in these two regions differ considerably by family type.

Our results suggest a need for regionally targeted and demographically tailored anti-poverty policies. The high and persistent poverty that characterizes both the Borderland and the Delta, and the sordid historical legacies that have contributed to that plight, make focusing on improving the economic conditions faced by the residents of these regions a just policy objective. Such policies should be crafted with recognition that facilitating different types of aggregate changes in communities will have varying impacts on the economic well-being of different types of families. Investing in job growth and employment opportunity will benefit families headed by married couples and single mothers alike. But beyond that, tending to the circumstances of different types of families calls for different policy prescriptions. These are important

considerations for U.S. welfare policy, which since 1996 has been focused squarely on questions of employment and family structure.

In sum, the Borderland and the Delta have long been the two poorest regions in the United States. It is time that research and policy attention be devoted to understanding and changing that reality. By taking a comparative approach and focusing on the critical issue of family structure, our analysis provides a step in that direction.

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References

- Albrecht, D.E., Albrecht, C.M., and Albrecht, S.L. (2000). Poverty in nonmetropolitan America: Impacts of industrial, employment, and family structure variables. *Rural Sociology* 65: 87-103.
- Allen-Smith, J.E., Wimberley, R.C., and Morris, L.V. (2000). America's forgotten people and places: Ending the legacy of poverty in the rural South. *Journal of Agricultural and Applied Economics* 32: 319-329.
- Betts, D.C. and Slottje, D.J. (1994). Crisis on the Rio Grande: Poverty, unemployment, and economic development on the Texas-Mexico Border. Boulder, CO: Westview Press.
- Bianchi, S.M. (1999). Feminization and juvenilization of poverty: Trends, relative risks, causes, and consequences. *Annual Review of Sociology* 25: 307-333. doi:10.1146/annurev.soc.25.1.307.
- Brown, R.B., Xu, X., and Toth, Jr., J.F. (1998). Lifestyle options and economic strategies: Subsistence activities in the Mississippi Delta. *Rural Sociology* 63: 599-623.
- Cotter, D. (2002). Poor people in poor places: Local opportunity structures and household poverty. *Rural Sociology* 67: 534-555.
- Crowley, M., Lichter, D.T., and Qian, Z. (2006). Beyond gateway cities: Economic restructuring and poverty among Mexican immigrant families and children. *Family Relations* 55: 345-360. doi:10.1111/j.1741-3729.2006.00407.x.
- Davila, A., Bohara, A.K., and Saenz, R. (1993). Accent penalties and the earnings of Mexican Americans. *Social Science Quarterly* 74: 902-916.
- Davila, A. and Mattila, J.P. (1985). Do workers earn less along the U.S.-Mexico border? *Social Science Quarterly* 66: 310-318.
- Davila, A. and Mora, M.T. (2000). English skills, earnings, and the occupational sorting of Mexican Americans along the U.S.-Mexico border. *International Migration Review* 34: 133-157. doi:10.2307/2676015.
- DeNavas-Walt, C., Proctor, B.D., and Smith, J. (2007). Income, poverty, and health Insurance coverage in the United States: 2006. U.S. Census Bureau, Current Population Reports P60-233. Washington, DC: U.S. Government Printing Office.

- Deseran, F.A. and Singelmann, J. (1993). Poverty and deprivation in the Mississippi Delta: Implications for social development in an industrial country. *International Journal of Contemporary Sociology* 30: 81-103.
- Duncan, C.M. (1999). *Worlds apart: Why poverty persists in rural America*. New Haven, CT: Yale University Press.
- Frey, W.H. and Liaw, K.L. (2005). Migration within the United States: Role of race-ethnicity. *Brookings-Wharton Papers on Urban Affairs* 6: 207-262. doi:10.1353/urb.2006.0004.
- Friedman, S. and Lichter, D.T. (1998). Spatial inequality and poverty among American children. *Population Research and Policy Review* 17: 91-109. doi:10.1023/A:1005740205017.
- Gans, H.J. (2002). The sociology of space: A use-centered View. *City and Community* 1: 329-339. doi:10.1111/1540-6040.00027.
- Gieryn, T.F. (2000). A space for place in sociology. *Annual Review of Sociology* 26: 463-496. doi:10.1146/annurev.soc.26.1.463.
- Gray, P.A. (1991). Economic development and African Americans in the Mississippi Delta. *Rural Sociology* 56: 238-246.
- Gunderson, C. (2006). Are the effects of the macroeconomy and social policies on poverty different in nonmetro areas in the United States? *Rural Sociology* 71: 545-572. doi:10.1526/003601106781262025.
- Harris, R.P. and Worthen, D. (2003). African Americans in rural America. In: Brown, D.L. and Swanson, L.E. (eds.). *Challenges for rural America in the twenty-first century*. University Park, PA: The Pennsylvania State University Press: 32-42.
- H.R. 3734: Personal Responsibility and Work Opportunity Reconciliation Act of 1996. (2008). Washington, DC: Library of Congress. <http://www.loc.gov/index.html>.
- Hyland, S. and Timberlake, M. (1993). The Mississippi Delta: Change or continued trouble. In: Lyson, T.A. and Falk, W.W. (eds.). *Forgotten places: Uneven development in rural America*. Lawrence, KS: University Press of Kansas: 78-101.
- Jensen, L., McLaughlin, D.K., and Slack, T. (2003). Rural poverty: The persisting challenge. In: Brown, D.L. and Swanson, L.E. (eds.). *Challenges for rural America in the twenty-first century*. University Park, PA: The Pennsylvania State University Press: 118-131.

- Larsen, L.J. (2004). The foreign-born population in the United States: 2003. *Current Population Reports*. U.S. Census Bureau, Washington DC.
- Lee, M.A. and Singelmann, J. (2006). Welfare reform amidst chronic poverty in the Mississippi Delta. In: Kandel, W.A. and Brown, D.L. (eds.). *Rural population change and rural society*. Dordrecht, The Netherlands: Springer Press: 381-403. doi:10.1007/1-4020-3902-6_18.
- Lee, M.A., Singelmann, J., and Etuk, L. (2006). *Family values and work in the Mississippi Delta: Effects of marriage and employment on the well-being of TANF participants*. Unpublished manuscript presented at the annual meeting of the Society for the Advancement of Socio-Economics, Trier, Germany.
- Lemann, N. (1991). *The promised land: The great black migration and how it changed America*. New York: Alfred A. Knopf.
- Levernier, W., Partridge, M.D., and Rickman, D.S. (2000). The causes of regional variations in U.S. poverty: A cross-county analysis. *Journal of Regional Science* 40: 473-497. doi:10.1111/0022-4146.00184.
- Lichter, D.T., Graefe, D.R., and Brown, J.B. (2003). Is marriage a panacea? Union formation among economically disadvantaged unwed mothers. *Social Problems* 50: 60-86. doi:10.1525/sp.2003.50.1.60.
- Lichter, D.T. and Jayakody, R. (2002). Welfare reform: How do we measure success? *Annual Review of Sociology* 28: 117-141. doi:10.1146/annurev.soc.28.110601.140845.
- Lichter, D.T. and Johnson, K.M. (2007). The changing spatial concentration of America's rural poor population. *Rural Sociology* 72: 331-358. doi:10.1526/003601107781799290.
- Lobao, L.M. (2004). Continuity and change in place stratification: Spatial inequality and middle-range territorial units. *Rural Sociology* 69: 1-30. doi:10.1526/003601104322919883.
- Lobao, L.M., Hooks, G., and Tickamyer, A.R. (2007). *The sociology of spatial inequality*. Albany, NY: State University of New York Press.
- Lobao, L.M. and Saenz, R. (2002). Spatial inequality and diversity as an emerging research area. *Rural Sociology* 67: 497-511.
- Lyson, T.A. and Falk, W.W. (1993). *Forgotten places: Uneven development in rural America*. Lawrence, KS: University Press of Kansas.

- Maril, R.L. (1989). *Poorest of Americans: The Mexican-Americans of the Lower Rio Grande Valley of Texas*. Notre Dame, IN: University of Notre Dame Press.
- Massey, D.S. and Denton, N.A. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge, MA: Harvard University Press. doi:10.1086/229532.
- McLaughlin, D.K. and Perman, L. (1991). Returns vs. endowments in the earnings attainment process for metropolitan and nonmetropolitan Men and Women. *Rural Sociology* 56: 339-365.
- Parisi, D., McLaughlin, D.K., Grice, S.M., Taquino, M., and Gill, D.A. (2003). TANF participation rates: Do community conditions matter? *Rural Sociology* 68: 491-512.
- Pickering, K., Harvey, M.H., Summers, G.F., and Mushinski, D. (2006). *Welfare reform in persistent rural poverty: Dreams, disenchantments, and diversity*. University Park, PA: The Pennsylvania State University Press.
- President's National Advisory Committee on Rural Poverty. (1967). *The People Left Behind*. Washington, DC: U.S. Government Printing Office.
- Rupasingha, A. and Goetz, S.J. (2007). Social and political forces as determinants of poverty: A spatial analysis. *The Journal of Socio-Economics* 36: 650-671. doi:10.1016/j.socec.2006.12.021.
- Rural Sociological Society Task Force on Persistent Rural Poverty. (1993). *Persistent poverty in rural America*. Boulder, CO: Westview Press.
- Saenz, R. (1997a). Mexican American poverty in Texas Border communities: A multivariate approach. Unpublished manuscript presented at the Borderlands Landscapes Conference, Texas A&M International University.
- Saenz, R. (1997b). Ethnic concentration and Chicano poverty: A comparative approach. *Social Science Research* 26:205-228. doi:10.1006/ssre.1997.0595.
- Saenz, R. and Ballejos, M. (1993). Industrial development and persistent poverty in the Lower Rio Grande Valley. In: Lyson, T.A. and Falk, W.W. (eds.). *Forgotten places: Uneven development in rural America*. Lawrence, KS: University Press of Kansas: 102-123.
- Saenz, R. and Torres, C.C. (2003). Latinos in rural America. In: Brown, D.L. and Swanson, L.E. (eds.). *Challenges for rural America in the twenty-first century*. University Park, PA: The Pennsylvania State University Press: 57-70.

- Singelmann, J. (1978). From agriculture to services: The transformation of industrial employment. Beverly Hills, CA: Sage Press.
- Slack, T. and Jensen, L. (2004). Employment adequacy in extractive industries: An analysis of underemployment, 1974-1998. *Society and Natural Resources* 17: 129-146. doi:10.1080/08941920490261258.
- Snipp, C.M. (1996). Understanding race and ethnicity in rural America. *Rural Sociology* 61: 125-142.
- Tan, P.P. and Ryan, E. (2001). Homeless Hispanic and non-Hispanic adults on the Texas-Mexico border. *Hispanic Journal of Behavioral Science* 23: 239-249. doi:10.1177/0739986301232008.
- Texas Secretary of State. (2009). Colonias FAQ's. <http://www.sos.state.tx.us/border/colonias/faqs.shtml>
- Tickamyer, A.R. (2000). Space matters! Spatial inequality in future sociology. *Contemporary Sociology* 29: 805-813. doi:10.2307/2654088.
- Tickamyer, A.R. and Duncan, C.M. (1990). Poverty and opportunity structure in rural America. *Annual Review of Sociology* 16: 67-86. doi:10.1146/annurev.so.16.080190.000435.
- U.S. Census Bureau. (2008). Poverty. <http://www.census.gov/hhes/www/poverty/poverty.html>
- Voss, P.R., Long, D.D., Hammer, R.B., and Friedman, S. (2006). County child poverty rates in the U.S.: A spatial regression approach. *Population Research and Policy Review* 25: 369-391. doi:10.1007/s11113-006-9007-4.
- Wilson, W.J. (1980). The declining significance of race: Blacks and changing American institutions (2nd ed.). Chicago: University of Chicago Press.
- Yoskowitz, D.W., Giermanski, J.R, and Pena-Sanchez, R. (2002). The influence of NAFTA on socio-economic variables for the US-Mexico border region. *Regional Studies* 36: 25-31. doi:10.1080/00343400120099834.