

**Meat Consumption,  
Meat Processing Restructuring,  
and Rural Hispanic Population Growth**

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## **Abstract: Meat Consumption, Meat Processing Restructuring, and Rural Hispanic Population Growth**

The current legislative and more public media debate over immigration reform has increased public awareness of Hispanic population growth and two important trends: the aging the non-Hispanic U.S. population, and the increasing unwillingness of native-born residents to take undesirable jobs at their current wage levels. This attention on Hispanic influence in recent years has been motivated, in part, by the appearance of rapidly growing Hispanic populations in unexpected places, particularly nonmetropolitan counties outside of the Southwest. The diversity of new rural areas of destination raises questions about forces attracting migrants to areas outside of the Southwest. While much of the public and legislative debate on immigration emphasizes the supply side of the labor market for foreign-born workers, this paper takes an alternative approach and considers some of the forces in American industry that have altered the demand side of the labor market. This paper uses a case study to illustrate how economic forces within an industrial sector can influence immigrant population growth. We examine trends in meat consumption and the resultant structural changes in the meat processing industry including consolidation, vertical integration, and concentration. We show how these trends have contributed to the increasing tendency for firms to locate plants in rural areas of the Midwest and Southeast and employ growing numbers of foreign-born workers. Our results highlight the role of industrial transformations in the meat processing industry for understanding Hispanic migration to new geographic destinations in the United States.

## **Introduction**

The current legislative and more public media debate over immigration reform has increased public awareness of Hispanic population growth and two important trends: the aging the non-Hispanic U.S. population, and the increasing unwillingness of native-born residents to take undesirable jobs at their current wage levels. This attention on Hispanic economic, political, and cultural influence in recent years has been motivated, in part, by the appearance of rapidly growing Hispanic populations in unexpected places, particularly nonmetropolitan counties outside of the Southwest. For the first time in our nation's history, half the nation's rural Hispanics live outside the traditional Southwestern states of Arizona, California, Colorado, New Mexico, and Texas (Kandel and Cromartie 2004). Moreover, Hispanic population growth in nonmetro counties now exceeds that of metro counties as well as the nonmetropolitan growth rates for all other racial and ethnic groups (Cromartie 2000; Guzmán, and Diaz McConnell 2002).

The diversity of new rural areas of destination raises questions about forces attracting migrants to areas outside of the Southwest. While much of the public and legislative debate on immigration emphasizes the supply side of the labor market for foreign-born workers, this paper takes an alternative approach and considers some of the forces in American industry that have altered the demand side of the labor market. Recent studies document growing proportions of Hispanics and immigrants in various primary and manufacturing industries over the past decade. However, given that these demographic trends became largely apparent from the appearance of Census 2000 data (much of which became available only in 2002), few quantitative analyses currently exist that link demographic and economic changes on a broader scale, particularly for rural areas (Saenz and Torres 2003).

This paper uses a case study to illustrate how economic forces within an industrial sector can influence immigrant population growth. We examine trends in meat consumption and the resultant structural changes in the meat processing industry including consolidation, vertical integration, and concentration. We show how these trends have contributed to the increasing tendency for firms to locate plants in rural areas of the Midwest and Southeast and employ growing numbers of foreign-born workers. Our results highlight the role of industrial transformations in the meat processing industry for understanding Hispanic migration to new geographic destinations in the United States.

### **Hispanic Settlement in Nontraditional Rural Destinations**

Data from Census 2000 illustrated some unexpected trends during the 1990s. First, the rate of nonmetro Hispanic population growth had exceeded that of metro counties. Second, it represented over 25 percent of all nonmetropolitan population growth, even though by 2000, Hispanics made up only 5.5 percent of the nonmetro population (Kandel and Cromartie 2004). Third, Hispanic growth was both widespread and geographically concentrated. In nonmetro counties, Hispanic population growth exceeded non-Hispanic population growth for all states except Hawaii. Yet, rural Hispanics have also concentrated geographically, with a third of their population in 2000 found in 109 or less than 5 percent of all 2,289 nonmetropolitan counties defined in 1993. Forth, while non-Hispanic Whites have increasingly settled outside of incorporated places during the last two decades, Hispanics did just the opposite, settling in larger towns within nonmetropolitan counties (Kandel and Cromartie 2004). Fifth, and perhaps most visible, Hispanics have been settling outside the Southwest, where rural Hispanics have resided

since the turn of the century, and into the Midwest and Southeast. Table 1 shows that between 1990 and 2000 the Hispanic population in the nonmetropolitan Midwest and South grew 13 and 19 percent, respectively. At the same time the percentage of Hispanics in the nonmetro Southwest declined from 66 to 53 percent. The result has been a great deal of media exposure on Hispanic population growth in a handful of towns such as Storm Lake, Iowa, and Siler City, North Carolina and a growing body of mostly qualitative studies on immigrant experiences in rural and urban communities (Engstrom 2001; Goździak and Martin 2005; Grey and Woodrick 2002; Griffith 1995; Guthey 2001; Viglucchi 2000; Zúñiga and Hernández-León 2005).

[Table 1 about here: Hispanic and non-Hispanic population change]

Several factors can explain the new and unanticipated Hispanic population growth into rural and urban areas of the Southeast and Midwest. First, the Immigration Reform and Control Act's (IRCA) legalization provisions permitted greater geographic mobility to over two million previously unauthorized residents, many of whom subsequently sought improved employment opportunities in nontraditional destinations. In addition, IRCA provided for greater border control funding which accelerated in the early 1990s and consequently increased the financial cost to migrants for crossing the border illegally. This in turn reduced significantly the amount of return migration as migrants extended their U.S. stays to recoup their border crossing costs. (Massey, Durand, and Malone 2002). Empirical research demonstrates that migrants who reside for longer periods in the U.S. are more likely to establish social ties, solidify employment arrangements, obtain legal status, and ultimately sponsor and support additional migration (Massey et al 1987; Massey 1990). Migrants who have recently settled in new receiving areas are therefore likely to provide financial and "logistical" support to other migrants from their communities of origin, thereby increasing the level of migrant settlement in these areas.

A second cause for new immigrant settlement patterns is personal preference. A number of qualitative studies suggest that migrants move to new destinations not only for employment opportunities but also for quality of life factors such as good schools, low crime, and affordable housing, particularly when compared with traditional urban immigrant destinations such as Los Angeles, Miami, Chicago, and Houston (Fennelly and Leitner, 2002; Fennelly 2005; Suro and Singer, 2002).

Third, faced with a dearth of workers, many rural-based companies have actively recruited migrants. Several studies have documented how rural industries with high-turnover rates have met their labor force requirements through active recruitment efforts and migrants' own social networks (Johnson-Webb 2002; Krissman 2000). Despite high turnover rates, the U.S. Department of Labor does not classify as temporary employment in many rural-based industries. Moreover, such employment is generally not highly skilled, forcing employers to use recruitment and other alternatives to the H2A or H2B visa programs to contract foreign workers, the majority of whom are likely to be undocumented (Carlin 1999; Katz 1996a; Katz 1996b; Smothers 1996; Taylor and Stein 1999). Corporate or other forms of recruitment have been identified in a variety of industries including meat processing, carpet manufacturing, oil refining, and forestry, leading to increasing Hispanic representation in non-traditionally rural areas of destination (Broadway 1994; Engstrom 2001; Hernández-León and Zúñiga 2000; Gouveia and Stull 1995; McDaniel and Casanova, 2003).

### **Meat Consumption, Industrial Restructuring and Changes in Labor Demand**

Underlying the increase in rural Hispanic population growth is an increased demand for labor by rural-based industries that in turn stems from changing food consumption trends. Accordingly,

grasping the processes affecting labor in rural areas requires an understanding of shifts in labor demand and the types of jobs created. For rural Latinos, this implies that transformations in local industries altered the organization of production, generating jobs especially tailored to migrant populations. The meat processing industry offers a useful illustration of the impact of industrial restructuring on population change. Stagnant real wages, high workforce turnover, and hazardous conditions have been accompanied over the past two decades by a growing presence of foreign-born workers (Stanley 1994; Stull, Broadway and Griffith 1995).

Four trends have altered the meat processing industry and fostered internal and international Hispanic migration to non-traditional rural receiving areas, and they have followed consistent paths with some variation among beef, pork, and poultry producers. First, changing American consumption patterns have increased demand for convenience, triggering a sizable expansion of the industry's unskilled labor force. This has been accompanied in the last fifty years by changes in processing technology that have lowered the relative cost of all meats and of different meat products to each other. Second, growing industrial concentration of meat production in a handful of large and highly integrated firms has significantly altered the relationship between labor and management, weakening job stability and benefits, and facilitating the recruitment of immigrant labor. Third, meat processing firms have increasingly sought to relocate plants in nonmetropolitan counties to reduce transportation costs and associated risks to livestock, and not coincidentally to decrease the likelihood of union organizing. This has reduced the attractiveness of these jobs for native workers and created a demand for labor that often cannot be met in rural areas given prevailing wages. Fourth, the physical demands and work conditions of meat processing employment relative to other employment with comparable wages, particularly in labor-short rural areas, has fostered

exceptionally high employee turnover rates that have help spawn labor recruitment practices focused on Hispanics, particularly immigrants.

### *Changes in the organization of production*

Changes in what Americans eat and how they eat it form the catalyst for the process of industrial restructuring in the meat processing industry. Throughout the 1950s, Americans, on a per capita basis, consumed three times as much beef and twice as much pork as they did poultry. Since then, technological innovations and economies of scale in poultry production, such as integration of chicken raising and slaughtering operations and increased use of specialized processing technology, reduced absolute and relative poultry prices, thereby bolstering demand (Barkema et al 2001; Bugos et al 1992; MacDonald et al 2000; Ollinger et al 2000). From 1960 to 1997, the retail price of whole chickens steadily declined in real dollars from \$1.38 to \$0.62, which bolstered demand. In contrast, the real price of beef increased from \$2.70 in 1960 to \$4.86 in 1982 before falling to \$1.74 by 1997 (Ollinger et al 2000).

[Figure 1 about here: per capita meat consumption by product, 1960-2000]

Health considerations also prompted greater chicken consumption relative to other meat products. Between 1970 and 2000 per capita annual consumption of beef declined from 80 to 65 pounds while that of chicken almost doubled from 28 to 53 pounds (Putnam and Allshouse 1997). Real beef prices did fall significantly after the mid-1980s as the sector adopted similar strategies and technologies, but two decades of shifting relative prices helped to permanently alter Americans' eating habits. Thus, by the end of the 1990s, Americans, per capita, were consuming less beef, the same quantity of pork, and twice as much chicken and turkey as in 1970. National employment figures reflect these trends. Between 1972-2001 beef and pork processing industry employment increased only modestly from 240,400 to 253,100, while

poultry processing industry employment jumped from 106,600 to 258,200 (Bureau of Labor Statistics 2003).

The growing importance of poultry within the meat industry has direct implications for Hispanic employment in rural areas. Unlike beef processing, chicken production has always been located predominantly in rural areas outside of traditional immigrant receiving areas. In 1993, for instance, the four leading poultry producing states were Arkansas, Georgia, Alabama, and North Carolina (Boyd and Watts 1994). As poultry prices dropped and competition for American consumers' protein budget heated up, other meat processing sectors that were largely located in metropolitan areas until the late 1970s began relocating processing plants in rural areas to reduce costs. Poultry industry growth and meat processing relocation to rural areas have clearly influenced low-skilled labor demand in rural areas (Stanley 1994).

[Table 2 about here: Cut-up meat products as a share of total shipments]

The demand for convenience and increasing monetary value of women's time also affected the meat processing industry. As growing numbers of women entered the labor force in the 1960s American consumers increasingly demanded fast and convenient food products. Beef, pork, and poultry firms began to supplement their slaughtering plants with production facilities that further processed meat. Table 2 illustrates how cut up meat products changed from being a relatively minor share of all meat production in the early 1960s to becoming its dominant output by the 1990s. The poultry product mix sold in American supermarkets in 1963, for example, consisted of 85 percent whole birds and 15 percent cut-up products; by 1997, that proportion had completely reversed.

In addition to cutting up meat products for different markets, many large pork and poultry plants also further process the meat by sorting, packaging, seasoning, and cooking it prior to

shipment (Ollinger et al 2000). These operations, in the context of extensive mechanization and increased plant productivity, generated significant demand for low skilled manual labor to do jobs that are generally physically tiring, repetitive, and prone to injury.

[Table 3 about here: Meat Exports]

The growing predominance of pre-cut and boxed meat allowed beef and pork producers to more conveniently ship their products overseas. Increased preferences for cut up poultry products by American consumers have effectively segmented domestic and international production, with breasts and other white meat shipped for domestic consumption, and legs and other dark meat shipped for export to China, Mexico, and Russia. Poultry exports, which for decades rarely exceeded five percent of all production, increased noticeably in the 1970s and dramatically in the late 1980s. Thus, despite declining U.S. per capita red meat consumption, a growing national population, greater public health concerns, and rising exports contributed to burgeoning demand for pork and poultry while maintaining a stable demand for beef. Accordingly, red meat processing employment has remained unchanged for thirty years, while poultry processing employment grew 150 percent over the same period and now exceeds the former (U.S. Department of Labor 1972-2001).

#### *Industrial concentration*

Meat processors responded to increased competition and changing consumption patterns by shifting production to larger plants that increased profitability through economies of scale. Poultry processing operations in particular began to integrate vertically as early as the 1950s by contracting with livestock growers for specific sizes of animals at set prices and providing growers with young livestock, feed, vitamins, and other elements necessary for raising them. Other meat processing sectors engaged similar practices over different time periods with

comparable outcomes. Thus, while increasing profitability, vertically integrated firms could also lower consumer prices, which declined in real terms between 1960 and 1997 by about 55 and 35 percent for poultry and beef, respectively. (Ollinger et al 2000).

[Table 4 about here: Measures of Consolidation and Concentration]

Plant consolidation produced an industry dominated by few firms utilizing large processing plants, while smaller producers struggled, generally unsuccessfully, to compete within an increasingly competitive sector (MacDonald et al 2000; Martinez et al 1997). Table 4 illustrates that by the end of the 1990s, large plants with 400 or more employees accounted for most meat produced in the U.S. Table 4 also shows that during this 35 year period, the ‘four-firm concentration ratio’, representing the proportion of total production controlled by the four largest firms, increased to where four firms accounted for roughly 50 percent of U.S. poultry and pork production and 80 percent of beef production by the late 1990s.

#### *Geographic relocation*

At the same time that the industry was consolidating, it adopted a strategy of relocating plants to rural areas to reduce transportation costs, ensure constant supplies of animals, and maintain constant plant utilization (Drabenstott et al 1999). Processing plants located in rural areas are also less likely to encounter union organizing (Broadway 1995; Moody 1988). Moreover, rural communities interested in jobs and local tax revenue typically offer a range of economic incentives and relatively less stringent environmental restrictions to induce firms to relocate (Broadway 1994). While chicken production remains close to its origins in the rural Southeast, beef processing gradually relocated from urban areas in the Midwest to large feedlots in Colorado, Nebraska, Kansas, Oklahoma, and Texas (Broadway 1995, MacDonald et al 2000).

Hog processing plants have also relocated to nontraditional regions outside the Midwest in rural areas of the West, Southwest, and Southeast (Drabenstott et al 1999).

[Table 5 about here: Location of meat processing employment]

Employment figures in Table 5 display the historical transition of meat processing from an urban to a rural based occupation, a sizeable portion of which occurred in just over two decades. The shift from urban to rural labor markets is striking because of the sizable increases in the numbers of persons employed in this industry. In the South, for example, the proportion of meat processing production based in nonmetro counties increased from 66 to 76 percent during a period when the number of employees in the industry almost doubled. All told, the total number of meat processing employees in rural areas doubled from 147,000 (46 percent of 319,000) to 294,000 (60 percent of 491,000) during the period. Moreover, national population growth did not ameliorate predictable labor market pressures. Many nonmetro counties in the Midwest and Great Plains have lost population throughout the past 50 years (Rathge and Highman 1998), and population growth in the nonmetro South and West occurred within the context of manufacturing, services, retirement, and recreation sector growth that placed its own demands on local labor markets.

Changing consumer preferences toward more convenient food choices, industry consolidation and concentration, and relocation to rural areas have therefore contributed to a growing demand for an alternative supply of low-skilled workers willing to accept relatively unattractive work. Moreover, vertical integration, large plant development, and the effective deskilling of previously skilled butchering into unskilled, dull, repetitive, and yet hazardous meat processing have all exacerbated employee turnover rates, facilitating immigrant recruitment.

### *Work conditions*

These related transformations, particularly de-unionization and de-skilling, have altered work conditions in the meat processing industry in ways that have implications for its racial/ethnic composition. Historically, meat-processing employment and especially meat packing offered relatively stable and well-paid employment for those with little education. However, faced with mounting competition in the late 1970s, meat-processing firms with unionized beef and pork-processing plants in the Midwest began demanding that workers accept wages comparable to those of non-union plants. Following an extended series of strikes and work stoppages throughout the 1980s, hourly wages and rates of unionization declined significantly (Bjerklie 1995). In contrast, poultry processing firms traditionally based in the Southeast had rarely faced significant union organizing, and real wages in that industry have remained unchanged for roughly three decades (Ollinger et al 2000).

At the same time, meat processing as an occupation has become almost entirely de-skilled. Conventional labor economics theory posits that greater technological innovation by firms would lead to increased skill requirements for their workers, but this has not been the case for the meat processing industry. What was an urban, unionized, and semi-skilled workforce employed in production plants, supermarkets, and butcher shops in the 1950s, transformed into one with rural, mostly non-union, and unskilled workers concentrated at the manufacturing end of the meat production chain by the end of the 1980s (Skaggs 1986; Stanley 1994; Stull et al 1995). Employment that previously required butchering skills and some degree of craftsmanship became routinized and repetitive, as once relatively small plants processing many types of livestock were replaced by much larger plants often specializing in specific livestock breeds. A recent analysis of nine broad industrial sectors (e.g. other agricultural processing, nondurable

manufacturing, mining) between 1972-1992 found that meat processing was the only industry that actually experienced a decline in its ratio of skilled to unskilled workers (Lee and Schluter 1999; Schluter and Lee 2002).

Although meat processing wages remain high compared to low-skilled employment in other industrial sectors, they require relatively unattractive working conditions. Injury rates for full-time workers from the Bureau of Labor Statistics supports findings from ethnographic studies and popular accounts of meat processing as a hazardous occupation (Bjerklie 1995; Fink 1998; Striffler 2002; Stull 1994; Sun and Escobar 1999). Meat processing reap efficiencies by locating in rural areas near livestock production, but employees in these plants have greater challenges finding convenient housing, public services, and retail, and often face longer, more expensive, and sometimes more hazardous commutes. Not surprisingly, large rural based processing plants have difficulty filling employment slots. Estimates of employee turnover in the meat processing industry range from 60 to 140 percent (Grey 1999; Macguire 1993) or in some cases significantly higher (NIOSH 1989). Hence, although meat processing is situated within a declining manufacturing sector (Griffith 1995), changes in the organization of production, industrial concentration, plant relocation, and relatively unattractive working conditions have increased demand for low-skilled, often foreign-born Hispanic workers.

Table 6 presents several key socioeconomic indicators for the meat processing labor force by race and ethnicity for 1980-2000. During these two decades, the non-Hispanic White proportion of its workforce declined from 74 to under 50 percent, and its Hispanic proportion both increased from under 10 percent to almost 30 percent and also became overwhelmingly foreign-born, 82 percent, by 2000.<sup>1</sup> A similar pattern is evident for the small proportion of

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<sup>1</sup> These data are for all meat processing workers in both metro and nonmetro counties. Data from the Current Population Survey not shown here indicate that the Hispanic proportion of the nonmetro meat processing labor force

mostly Asians in the ‘Other’ category, highlighting the importance of an immigrant labor force for the industry.

[Table 6 about here: SE characteristics of the meat processing labor force]

Moreover, while the educational background of non-Hispanic Whites and Blacks improved markedly between 1980 and 2000, the proportion of Hispanics with less than high-school education remained unchanged at about 60 percent. These differences in human capital characteristics by race and ethnicity also correspond to annual income differences, with those of Hispanics dropping more precipitously between 1980 and 1990 and not subsequently recovering between 1990 and 2000 as is the case with all other groups. Together, these changes highlight both a dilution over time of native Hispanic education gains by the considerable influx of less educated foreign-born Hispanics and its negative impact on wages, underscoring increased demand for low-skilled Hispanic workers in the industry.

[Table 7 about here: SE characteristics of the foreign-born meat processing labor force]

Further examination of the characteristics of the foreign-born population in the meat processing industry shows that at almost any time during this period, roughly half of all foreign-born Hispanic workers had arrived to the United States within the previous ten years. Moreover, the percentage lacking a high school diploma – more than twice that of foreign-born non-Hispanic Whites and Blacks – deviates only modestly from the percentage for all Hispanics shown in Table 6. Together, these data suggest that among all Hispanics, meat processing employment is increasingly taken by the foreign-born with little education and U.S. experience.

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increased even more, from 27 to 64 percent during this period. Moreover, because the CPS tends to undercount Hispanics, particularly those lacking legal status, these proportions are actually conservative.

## **Discussion**

Several factors have fostered extraordinary Hispanic population growth in the past two decades, particularly in nonmetropolitan counties outside of traditional migrant receiving areas. These include changes in border enforcement policies, unfavorable employment and living conditions in traditional and urban migrant destinations, and active recruitment by firms seeking to replenish a continuously depleted supply of low-skilled labor. Although just a tenth of all Hispanics live in nonmetro counties, their rapid growth, which exceeded 100 percent in about half of all U.S. states over the past decade, has profound implications for rural areas. Numerous studies of Hispanic settlement patterns indicate that initial high growth rates continue at length, and in some cases exponentially. Under such conditions, upper limits to Hispanic population growth in rural areas may be determined in large part by characteristics of local labor markets.

In this study, we elaborated on an explanation of increasing Hispanic representation in rural areas that emphasized the role of industrial restructuring, especially in the meat processing industry. Changes in U.S. meat consumption combined with new technological innovations in processing altered relative prices among meat products and elevated competition between producers. In response, the industry became increasingly concentrated among several large producers whose use of technology, growing processing plant sizes, and more rural locations yielded greater economies of scale. Yet, in spite of the rapid adoption of labor saving mechanization by the industry, demand for value-added production from a growing U.S. population, fast food marketing, and considerable export expansion all contributed to increased demands for labor.

A key outcome of this industrial transformation has been the growing Hispanic presence in the meat processing labor force. Immigrant labor in food processing follows a pattern found in

crop agricultural and other nondurable and durable goods manufacturing sectors. As educational attainment for the general population rises, and other employment options reduce the relative attraction of manufacturing sector employment, U.S. firms that do not or cannot locate production overseas may adopt strategies to create similar fiscal conditions in the U.S. through cost-cutting measures. A central strategy is the use of low-cost labor.

As a result, Hispanic population growth appears to be responsive to the process of industrial transformation affecting rural counties. This is especially clear in the case of beef and poultry industries that, through concentration, consolidation, and relocation, have remained labor-intensive enterprises. The new manufacturing jobs created by these sectors offer relatively higher wages than other sectors employing low-skilled labor, but poor work conditions and isolated locations limit their attraction to domestic workers. In certain areas of the country, it is clear that growing Hispanic representation in this industry results from, and high Hispanic population growth corresponds to, high meat processing output (Kandel and Parrado 2004).

Our findings generate two sets of policy implications. First, industrial transformation as described in this paper implies employment in industries with relatively limited prospects for occupational mobility. In light of rapid Hispanic population growth generally and particularly among U.S. children, such trends portend powerful long-term impacts for increases in social and economic inequality. Second, on a more immediate time-horizon, industrial transformation may signal the growth of local and regional pockets of Hispanic enclaves in rural counties that may be unprepared to address their social service needs.

These findings also have implications for the debate on the impact of immigration on native workers' employment. Contemporary concerns over native worker unemployment and the "jobless recovery" currently under way have been exacerbated by the fact that many new jobs

added to the U.S. economy in recent years have been taken by immigrants. These trends have been noted by social scientists and by the public at large, fueling indignation and resentment towards immigrant workers. Our findings contribute to a vast literature that suggests that immigrants are not substitutes for native workers. Instead, they appear to be taking unstable, unpleasant, and often low-paying jobs in declining sectors of the economy that increasingly educated native residents find unattractive. Rather than focusing on the ethnic and foreign-born composition of recently created jobs, closer attention needs to be paid to the types of jobs that the U.S. economy is creating and how they might influence the demand for immigrant labor.

## References

- Barboza, D. 2001. "Meatpackers' Profits Hinge on Pool of Immigrant Labor." New York Times, December 21.
- Barkema, A., M. Drabenstott, and N. Novack. 2001. "The New U.S. Meat Industry." Economic Review, Federal Reserve Bank of Kansas City, Second Quarter: 33-56.
- Belous, R. S. 1989. The Contingent Economy: The Growth of the Temporary, Part-time and Subcontracted Workforce. Washington DC: National Planning Association.
- Bernhardt, A., M. Morris, M. S. Handcock, and M. A. Scott. 2001. Divergent Paths: Economic Mobility in the New American Labor Market. New York: Russell Sage Foundation.
- Bjerklie, S. 1995. "On the Horns of a Dilemma: the U.S. Meat and Poultry Industry." In Any Way You Cut It: Meat Processing and Small-Town America, eds. D. D. Stull, M. J. Broadway, and D. Griffith, 41-60. Lawrence: University Press of Kansas.
- Bluestone, B., and B. Harrison. 1982. The Deindustrialization of America. New York: Basic Books
- Borjas, G. J., R. B. Freeman, and L. F. Katz. 1997. "How Much do Immigration and Trade Affect Labor Market Outcomes?" Brookings Papers on Economic Activity 1: 1-67.
- Boyd, W. and M. Watts. 1994. "Agro-Industrial Just-In-Time: The chicken industry and postwar American capitalism," in Philip McMichael (ed.) The Global Restructuring of Agro-food Systems. Ithaca, NY: Cornell University Press.
- Broadway, M. J. 1994. "Hogtowns and Rural Development." Rural Development Perspectives 9:40-46.
- \_\_\_\_\_. 1995. "From City to Countryside" In Any Way You Cut It: Meat Processing and Small-Town America, eds. D. D. Stull, M. J. Broadway, and D. Griffith, pp.17-40. Lawrence: University Press of Kansas.
- Bugos, G.E. 1992. "Intellectual Property Protection in the American Chicken-Breeding Industry," Business History Review 66: 127-68.
- Bureau of Labor Statistics. 2003. Occupational Employment Statistics, 1972-2001, accessed from <http://www.bls.gov/oes/home.htm>, in March, 2003.
- Carlin, M. 1999. "Even tougher on farm labor?" Raleigh News and Observer, July 28.
- Cromartie, J. 2000. "Outward and Upward: Rural Population Change in the 1990's." Paper presented at the WEP/CP Conference, San Diego, California, July.

Danzinger, S., and P. Gottschalk (eds.) 1993. Uneven Tides: Rising Inequality in America. New York: Russell Sage Foundation.

Drabenstott, M., M. Henry, and K. Mitchell. 1999. "Where Have All the Packing Plants Gone? The New Meat Geography in Rural America." Economic Review, Federal Reserve Bank of Kansas City (3<sup>rd</sup> Quarter): 65-82.

Engstrom, J. 2001. "Industry and Immigration in Dalton, Georgia." In Murphey, A., C. Blanchard and J. A. Hill (eds.) Latino Workers in the Contemporary South. Athens: University of Georgia Press.

Fennelly, K. 2005. "Latinos, Asians, Africans in the Northstar State: New Immigrant Communities in Minnesota", in E. M. Gozdzik and S. F. Martin (Eds.), Beyond the Gateway: Immigrants in a Changing America. Lanham, MD: Lexington Books.

Fennelly, K., and H. Leitner. 2002. "How the Food Processing Industry is Diversifying Rural Minnesota." Working Paper 59, The Julien Samora Research Institute, Michigan State University.

Fink, D. 1998. Cutting into the Meatpacking Line: Workers and Change in the Rural Midwest. Chapel Hill, NC: University of North Carolina Press.

Freeman, R. B. (ed.) 1994. Working Under Different Rules. New York: Russell Sage Foundation.

Fuchs, V. A. 1981. "Economic Growth and the Rise of Service Employment." in H. Giersch, ed., Towards an Explanation of Economic Growth. Tubingen: J. C. B. Mohr.

Gouveia, L. and D. D. Stull. 1995. "Dances with Cows: Beefpacking's Impact on Graden City, Kansas, and Lexington, Nebraska." In Stull, D. D., M. J. Broadway, and D. Griffith (eds.) 1995. Any Way You Cut It: Meat Processing and Small-Town America. Lawrence: University Press of Kansas.

Goździak, E. M. and S. F. Martin (Eds.) 2005. Beyond the Gateway: Immigrants in a Changing America. Lanham, MD: Lexington Books.

Grey, M. 1999. "Immigrants, Migration, and Worker Turnover at the Hog Pride Pork Packing Plant." Human Organization 58: 16-27.

Grey, M. and A. Woodrick. 2002. "Unofficial Sister Cities: Meatpacking labor migration between Villachuato, Mexico and Marshalltown, Iowa." Human Organization 61(4): 364-76.

Griffith, D. 1995. "Hay Trabajo: Poultry Processing, Rural Industrialization, and the Latinization of Low-Wage Labor." In Stull, D. D., M. J. Broadway, and D. Griffith (eds.) 1995. Any Way You Cut It: Meat Processing and Small-Town America. Lawrence: University Press of Kansas.

Guthey, G. 2001. "Mexican Places in Southern Spaces: Globalization, Work and Daily Life in and around the North Georgia Poultry Industry." In Murphey, A., C. Blanchard and J. A. Hill (eds.) Latino Workers in the Contemporary South. Athens: University of Georgia Press.

Guzmán, Betsy and Eileen Diaz McConnell. 2002. "The Hispanic population: 1990-2000 growth and change." Population Research and Policy Review 21:109-28.

Harrison, B. and B. Bluestone. 1990. The Great U-turn: Corporate Restructuring and the Polarizing of America. New York: Basic Books.

Hernández-León, R. and V. Zúñiga. 2000. "'Making Carpet by the Mile': The Emergence of a Mexican Immigrant Community in an Industrial Region of the U.S. Historic South." Social Science Quarterly 81:49-66.

\_\_\_\_\_. 2003. "Mexican Immigrant Communities in the South and Social Capital: the Case of Dalton, Georgia." Southern Rural Sociology 19(1): 20-45.

Johnson-Webb, K. D. 2002. "Employer Recruitment and Hispanic Labor Migration: North Carolina Urban Areas at the End of the Millennium." Professional Geographer 54(3): 406-421.

Jones Putnam, J., and J.E. Allshouse. 1997. Food Consumption, Prices, and Expenditures, 1970-95. Statistical Bulletin 939. Washington, DC: Economic Research Service, U.S. Department of Agriculture.

Kandel, W., and J. Cromartie. 2004. New Patterns of Hispanic Settlement in Rural America. Rural Development and Research Report 99. Washington, DC: Economic Research Service, U.S. Department of Agriculture.

Kandel, W., and E. Parrado. 2004. "Industrial Transformation and Hispanic Migration to the American South: The case of the Poultry Industry," in D. Arreola (ed.) Hispanic Spaces, Latino Places: A Geography of Regional and Cultural Diversity. Austin, TX: University of Texas Press.

\_\_\_\_\_. Forthcoming. "Hispanic Population Growth, Age Composition Shifts, and Public Policy Impacts in Nonmetro Counties." in W. Kandel and D. Brown (eds.) Population Change and Rural Society. Berlin: Springer.

Katz, J. 1996a. "Poultry Industry Imports Labor to do its Dirty Work." Los Angeles Times, December 8.

\_\_\_\_\_. 1996b. "The Chicken Trail." (three articles) Los Angeles Times, November 10-12.

Krissman, F. 2000. "Immigrant Labor Recruitment: U.S. Agribusiness and Undocumented Migration from Mexico." In N. Foner, R. Rumbaut, and S. Gold (eds.), Immigration Research for a New Century. New York, NY: Russell Sage.

- Lee, C. and Schluter, G. 1999. "The Effect of Trade, Technology, and Labor Productivity on the Demand for Skilled vs Unskilled Workers." Economic Systems Research 11(1): 49-65.
- McDaniel, J.M. and V. Casanova. 2003. "Pines in Lines: Tree Planting, H2B Guest Workers, and Rural Poverty in Alabama." Southern Rural Sociology 19(1): 73-96.
- McGranahan, D. A. 1999. "Natural Amenities Drive Rural Population Change." Agricultural Economic Report 781. Washington, DC: Economic Research Service, U.S. Department of Agriculture.
- MacDonald, J., M. Ollinger, K. Nelson, and C. Handy. 2000. "Consolidation in U.S. Meatpacking." Agricultural Economic Report 785. Washington, D.C.: Economic Research Service, USDA.
- Macguire, S. R. 1993. Worker Tenure in 1991. Occupational Outlook Quarterly, Spring: 25-37.
- Martinez, S. W., K. Smith, and K. Zering. 1997. "Vertical Coordination and Consumer Welfare: The Case of the Pork Industry." Agricultural Economic Report 753. Washington, D.C.: Economic Research Service, USDA.
- Massey, D. S. 1990. "Social Structure, Household Strategies, and the Cumulative Causation of Migration." Population Index 56(1):3-26.
- Massey, D. S, J. Durand, and N. Malone. 2002. Beyond Smoke and Mirrors: Mexican Immigration in an Era of Economic Integration. New York: Russell Sage.
- Massey, D. S., R. Alarcón, J. Durand, and H. González. 1987. Return To Aztlan. Berkeley, CA: University of California.
- Moody, K. 1988. An Injury to All: The Decline of American Unionism. New York: Verso.
- NIOSH (National Institute for Occupational Safety and Health). 1989. "Health Hazard Evaluation Report: John Morrell & Co., Sioux Falls, South Dakota." HETA 88-180-1958. Washington, D.C.: U.S. Government Printing Office.
- Ollinger, M., J. MacDonald, and M. Madison. 2000. Structural Change in U.S. Chicken and Turkey Slaughter. Agricultural Economic Report 787. Washington, D.C.: Economic Research Service, USDA.
- Piore, M. J. 1979. Birds of Passage: Migrant Labor and Industrial Societies. Cambridge: Cambridge University Press.
- Putnam, J. J. and J. E. Allshouse. 1997. Food Consumption, Prices, and Expenditures, 1970-95. Statistical Bulletin 939. Washington, D.C.: Economic Research Service, USDA.

- Rathge, R. and P. Highman. 1998. "Population Change in the Great Plains: A History of Prolonged Decline." Rural Development Perspectives 13(1): 19-25.
- Saenz, Rogelio, and Cruz C. Torres. 2003. "Latinos in Rural America." In D. Brown and L. Swanson (eds.) Challenges for Rural America in the Twenty-First Century. University Park, PA: Penn State University Press.
- Schluter, G. and C. Lee. 2002. "Can Rural Employment Benefit from Changing Labor Skills in U.S. Processed Food Trade?" Rural America 17(4): 38-43.
- Skaggs, J. 1986. Prime Cut: Livestock Raising and Meatpacking in the United States, 1607-1983. College Station, TX: Texas A&M University Press.
- Smith, V. 2001. Crossing the Great Divide: Worker Risk and Opportunity in the New Economy. Ithaca: Cornell University Press.
- Smothers, R. 1996. "Unions Head South to Woo Poultry Workers," New York Times, January 30.
- Stanley, K. 1994. "Industrial and Labor Market Transformation in the U.S. Meatpacking Industry" in P. McMichael (ed.) The Global Restructuring of Agro-food Systems. Ithaca, NY: Cornell University Press.
- Striffler, S. 2002. "Inside a Poultry Processing Plant: An Ethnographic Portrait." Labor History 43(3): 305-13.
- Studstill, J. D., and L. Nieto-Studstill. 2001. "Hospitality and Hostility: Latin Immigrants in Southern Georgia." In Murphey, A., C. Blanchard and J. A. Hill (eds.) Latino Workers in the Contemporary South. Athens: University of Georgia Press.
- Stull, D. D. 1994. "Knock 'em Dead: Work on the Killfloor of a Modern Beefpacking Plant." In L. Lamphere, A. Stepick, and G. Grenier (eds.) Newcomers in the Workplace: Immigrants and the Restructuring of the U.S. Economy. Philadelphia: Temple University Press.
- Stull, D. D., M. J. Broadway, and D. Griffith (eds.) 1995. Any Way You Cut It: Meat Processing and Small-Town America. Lawrence: University Press of Kansas.
- Sun, L. H. and G. Escobar. 1999. "On Chicken's Front Line." Washington Post. November 28-December 1.
- Suro, R., and A. Singer. 2002. "Latino Growth in Metropolitan America: Changing Patterns, New Locations." Washington, DC: Center on Urban and Metropolitan Policy, The Brookings Institution and The Pew Hispanic Center.
- Taylor, M., and S. Stein. 1999. "Network Helps Recruit Immigrants for U.S. Job Market." The Fort Worth Star-Telegram, July 4.

U.S. Department of Labor (USDOL). 1972-2001. Occupational Employment Statistics. Washington, DC: U.S. Department of Labor.

Viglucci, A. 2000. "Hispanic wave forever alters small town in N.C." The Chatham News, Feb. 3, pp. A2-3.

Whitener, L. A., and D. A. McGranahan. 2003. "Rural America: Opportunities and Challenges." Amber Waves 1(1): 14-21.

Zúñiga, V. and R. Hernández-León (Eds.) 2005. New Destinations: Mexican Immigration in the United States. New York: Russell Sage Foundation.

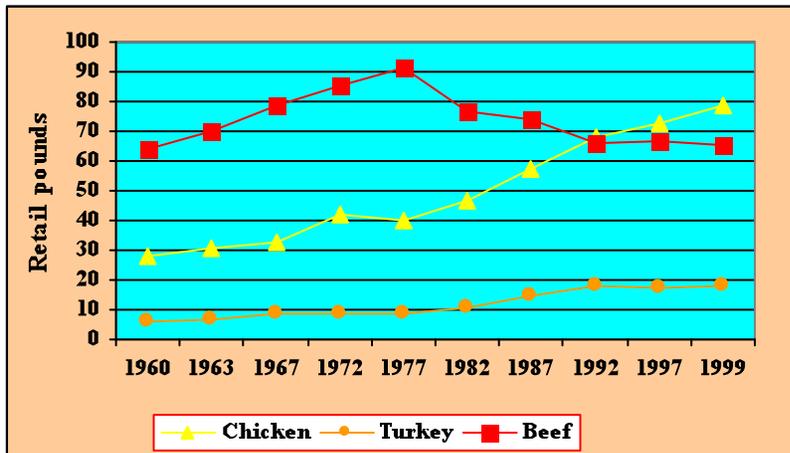
**Table 1: Hispanic and non-Hispanic population change by metropolitan status and region, 1980-2000**

|                      |      | Total population | Percent change over decade | Percent distribution among U.S. regions |         |       |       |           |
|----------------------|------|------------------|----------------------------|---|---------|-------|-------|-----------|
|                      |      |                  |                            | Northeast                               | Midwest | South | West  | Southwest |
| <b>HISPANICS</b>     |      |                  |                            |   |         |       |       |           |
| Nonmetro             | 1980 | 1,497,624        |                            | 2.3%                                    | 10.2%   | 13.3% | 8.7%  | 65.6%     |
|                      | 1990 | 1,902,418        | 27.0%                      | 3.1%                                    | 10.1%   | 10.6% | 10.6% | 65.5%     |
|                      | 2000 | 3,175,953        | 66.9%                      | 3.2%                                    | 12.9%   | 19.3% | 11.5% | 53.1%     |
| Metro                | 1980 | 13,111,049       |                            | 19.6%                                   | 8.6%    | 9.8%  | 2.5%  | 59.5%     |
|                      | 1990 | 20,451,641       | 56.0%                      | 18.1%                                   | 7.5%    | 10.9% | 2.6%  | 61.0%     |
|                      | 2000 | 32,129,865       | 57.1%                      | 16.0%                                   | 8.5%    | 13.4% | 3.8%  | 58.3%     |
| <b>NON-HISPANICS</b> |      |                  |                            |   |         |       |       |           |
| Nonmetro             | 1980 | 48,038,159       |                            | 10.4%                                   | 33.6%   | 39.2% | 8.3%  | 8.5%      |
|                      | 1990 | 48,995,484       | 2.0%                       | 10.6%                                   | 32.2%   | 39.5% | 8.8%  | 8.9%      |
|                      | 2000 | 52,983,373       | 8.1%                       | 10.2%                                   | 31.1%   | 40.0% | 9.5%  | 9.3%      |
| Metro                | 1980 | 163,898,973      |                            | 25.4%                                   | 25.3%   | 24.9% | 5.0%  | 19.5%     |
|                      | 1990 | 177,360,330      | 8.2%                       | 23.6%                                   | 23.8%   | 26.3% | 5.4%  | 20.9%     |
|                      | 2000 | 193,132,715      | 8.9%                       | 22.2%                                   | 23.2%   | 27.6% | 5.9%  | 21.0%     |

SOURCE: U.S. Decennial Censuses, SF1 files, 1980-2000

NOTE: Regions are census regions, except for the Southwest which borrows from the West and the South and consists of Arizona, California, Colorado, New Mexico, and Texas.

**Figure 1: Per capita meat consumption by product, 1960-2000**



SOURCE: Ollinger, MacDonald & Madison 2000

**Table 2: Cut-up meat products as a share of total shipments for meat processing plants, 1963-1997**

| Year | Beef | Pork | Chicken | Turkey |
|------|------|------|---------|--------|
| 1963 | 9.3  | 27.5 | 15.2    | 3.4    |
| 1972 | 15.5 | 33.2 | 29.6    | 16.7   |
| 1982 | 39.5 | 34.9 | 48.1    | 29.9   |
| 1992 | 56.2 | 52.4 | 78.2    | 55.1   |
| 1997 | n/a  | n/a  | 86.9    | n/a    |

SOURCE: Tables 4.1, 4.2 of MacDonald et al (2000), and Table 2.2 of Ollinger et al (2000).

**Table 3: U.S. Meat Exports, 1970-2000**

(millions of pounds)

| Year | Beef  | Pork  | Chicken |
|------|-------|-------|---------|
| 1970 | 40    | 83    | 94      |
| 1980 | 175   | 252   | 567     |
| 1990 | 1,006 | 243   | 1,143   |
| 2000 | 2,328 | 1,167 | 5,548   |

SOURCE: Putnam and Allshouse (1997)

**Table 4: Measures of Consolidation and Concentration in Meat Processing, 1963-1997**

| Year | Percent of Total U.S. Shipment Value Produced in Plants<br>with More than 400 Employees |      |         |        | Percent of Total U.S. Shipment Value Produced by the<br>Largest Four U.S. Firms |      |         |        |
|------|---|------|---------|--------|---|------|---------|--------|
|      | Beef  | Pork | Chicken | Turkey | Beef  | Pork | Chicken | Turkey |
| 1963 | 31  | 66   | n/a     | n/a    | 26  | 33   | 14      | 23     |
| 1967 | 29  | 63   | 29      | 16     | 26  | 30   | 23      | 28     |
| 1972 | 32  | 62   | 34      | 15     | 30  | 32   | 18      | 41     |
| 1977 | 37  | 76   | 45      | 29     | 25  | 31   | 22      | 41     |
| 1982 | 51  | 76   | 65      | 35     | 44  | 31   | 32      | 40     |
| 1987 | 58  | 72   | 76      | 64     | 58  | 30   | 42      | 38     |
| 1992 | 72  | 86   | 88      | 83     | 71  | 43   | 41      | 45     |
| 1997 | 74  | 88   | 90      | 85     | 80  | 54   | 47      | 48     |

SOURCE: Tables 3.1, 3.2, 3.4, MacDonald et al (2000)

**Table 5: Location of meat processing employment by region and metropolitan status, 1981 and 2000**

|              | 1981                                      |   | 2000                                      |   | 1981-2000   |
|--------------|---|---|---|---|---|
|              | Total number of meat processing employees | Percent of total employees working in nonmetro counties | Total number of meat processing employees | Percent of total employees working in nonmetro counties | Percent change in total number of meat processing employees |
| Northeast    | 31,882                                    | 14%   | 26,745                                    | 13%   | -16.1%  |
| Midwest      | 117,417                                   | 45%   | 162,370                                   | 58%   | 38.3%   |
| South        | 115,856                                   | 66%   | 225,026                                   | 76%   | 94.2%   |
| West         | 9,262                                     | 30%   | 12,207                                    | 51%   | 31.8%   |
| Southwest    | 44,194                                    | 27%   | 63,785                                    | 35%   | 44.3%   |
| <b>TOTAL</b> | <b>319,336</b>                            | <b>46%</b>  | <b>490,621</b>                            | <b>60%</b>  | <b>53.6%</b>  |

SOURCE: Enhanced County Business Patterns Data, 1981 and 2000.

**Table 6: Socioeconomic characteristics of the meat processing labor force by race and ethnicity, 1980-2000**

|                    | Ethnic Composition |        |        | Percent Foreign Born |       |       | Percent with less than High School Diploma |       |       | Mean Annual Wage Income (Constant dollars, 2000) |          |          |
|--------------------|--------------------|--------|--------|----------------------|-------|-------|--|-------|-------|--|----------|----------|
|                    | 1980               | 1990   | 2000   | 1980                 | 1990  | 2000  | 1980                                       | 1990  | 2000  | 1980   | 1990     | 2000     |
| Non-Hispanic White | 73.6%              | 66.4%  | 48.6%  | 4.0%                 | 2.5%  | 3.1%  | 29.8%                                      | 17.1% | 12.5% | \$30,674   | \$27,348 | \$30,286 |
| Non-Hispanic Black | 16.3%              | 16.9%  | 18.3%  | 1.4%                 | 1.0%  | 1.9%  | 42.9%                                      | 21.8% | 14.9% | \$21,151   | \$18,592 | \$20,517 |
| Other              | 1.6%               | 3.3%   | 4.5%   | 45.7%                | 59.9% | 61.8% | 40.3%                                      | 35.7% | 31.8% | \$24,600   | \$21,918 | \$24,008 |
| Hispanic           | 8.5%               | 13.4%  | 28.5%  | 49.7%                | 60.9% | 82.0% | 65.1%                                      | 60.8% | 62.7% | \$26,070   | \$20,979 | \$20,807 |
| All workers        | 100.0%             | 100.0% | 100.0% |                      |       |       |  |       |       |  |          |          |
| N                  | 16,239             | 17,139 | 22,556 |                      |       |       |  |       |       |  |          |          |

Source: Integrated Public Use Micro Sample (IPUMS) Data, 1980-2000.

**Table 7: Socioeconomic characteristics of the foreign-born meat processing labor force by race and ethnicity, 1980-2000**

|                    | Percent Recent Arrival<br>(within 10 years) |      |      | Percent with less than<br>High School Diploma |      |      |
|--------------------|---|------|------|---|------|------|
|                    | 1980  | 1990 | 2000 | 1980  | 1990 | 2000 |
| Non-Hispanic White | 26.1  | 17.3 | 43.0 | 48.4  | 31.4 | 25.1 |
| Non-Hispanic Black | 42.1  | 70.4 | 53.2 | 36.8  | 25.9 | 27.3 |
| Other              | 74.4  | 67.1 | 45.3 | 40.4  | 44.9 | 40.9 |
| Hispanic           | 49.9  | 55.0 | 55.8 | 76.8  | 71.9 | 69.4 |

Source: Integrated Public Use Micro Sample (IPUMS) Data, 1980-2000.

Labor Demand: The Meat Processing Industry Meat Processing Industry Restructuring. Changing food consumption patterns Industry concentration Vertical integration Functional consolidation within large plants Location of plants in rural areas Result: Growing demand for low-skilled workers in non-traditional rural areas outside of the Southwest Total U.S. Meat Consumption Consumption, 1971-2005 70 Billions of pounds in retail sales 60 50 40 Red meat Pork 30 Chicken Turkey Total 20 10 0. 1971 1974 1977 1980 1983 Source: Economic Research Service, USDA 1986 1989 1992 1995 1998 meat packing, sausage and prepared meats (meat processing) and poultry slaughtering and processing. Through the 1950's meat packing plants were located in larger cities close to consumers and labor. Meat and poultry processing are subindustries that have received considerable attention in the popular press as sources of employment, but growth in employment of Hispanic- and Asian-origin persons is of a much broader base than this industry. With the Immigration Act of 1986 providing much of the impetus to new immigrant flows coming into the 1990s, it will be interesting to see what the next decade holds for the. This is a list of countries by meat consumption. Meat is animal flesh that is eaten as food. The figures tabulated below do not represent per capita amounts of meat eaten by humans. Instead, they represent FAO figures for carcass mass availability (with carcass mass for poultry estimated as ready-to-cook mass), divided by population. The amount eaten by humans differs from carcass mass availability because the latter does not account for losses, which include bones, losses in retail and food service