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Niles Hansen\*

# Economic Growth Patterns in the Texas Borderlands

The nature and significance of economic growth patterns in the Texas borderlands cannot be understood by treating the region as though it existed in a vacuum. Thus, in addition to describing the recent evolution of the border economy, this paper attempts to identify the major national and international development processes that will continue to influence the region's growth in the foreseeable future. In particular, it is necessary to examine manufacturing decentralization in the United States, as well as broader considerations involving the international division of labor.

## MANUFACTURING DECENTRALIZATION IN THE UNITED STATES

Between 1968 and 1978, manufacturing employment in the United States increased by fewer than 700,000 workers; during this period the share of total employment accounted for by manufacturing declined from 27 percent to 22 percent. However, the aggregate picture masks important differences among broad regions of the country. Essentially, manufacturing activity has been shifting from the Northeast and North Central regions—roughly the traditional industrial heartland—to the South and West. Manufacturing employment in the Northeast declined by almost 800,000 workers between 1968 and 1978. The North Central region registered a gain of 200,000 manufacturing jobs, but this was caused primarily by growth in the historically less industrialized states west of the Mississippi River. Meanwhile, factory employment increased by over 900,000 jobs in the South and by over 300,000 in the West. In addition, throughout the country manufacturing activities have been decentralizing from large metropolitan areas to smaller cities and rural areas.<sup>1</sup>

Manufacturing decentralization can be explained in large part in terms of the related concepts of product life cycles and spatial industrial filtering.

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\*Department of Economics, The University of Texas at Austin. Research for this paper was supported by the Andrew W. Mellon Foundation and the Mexico-United States Border Research Program of the University of Texas at Austin.

1. Rones, *Moving to the Sun: Regional Job Growth 1968 to 1978*, 103 MONTHLY LABOR REV. 12-19 (March 1980).

A product life cycle may be divided somewhat arbitrarily into three phases: early, growth, and mature. In the early phase, scientific and engineering skills are the critical human inputs. Because of the relatively short production runs associated with a changing technology, capital outlays are relatively low. Producers depend instead on external economies and subcontracting. In the growth phase, the capital-to-labor ratio is increased by the introduction of mass production techniques. Management skills are vital in this phase. Finally, in the mature phase there is little technological innovation; the product is manufactured in long, routine production runs. Cheap, low-skill labor becomes the key human input, but capital intensity may remain high because large amounts of specialized equipment often can be used. In order to remain competitive, corporations respond to changing input needs—corresponding to differing phases of the product cycle—by changing the geographic location of production. Thus, corporations increasingly manufacture multiple products in multiple branch plants in multiple locations. But the lower an area in the skill and wage hierarchy, the older an industry or product tends to be when it arrives, and the slower its national rate of growth.

One may ask how areas corresponding to the upper rungs of the hierarchy survive if they tend to lose activities that inevitably become routine. The answer is that they continue to renew themselves by creating new, relatively sophisticated activities. For example, New England, which lacks natural resources, has relied heavily upon the quality of its human resources to adapt to change and maintain economic progress. Contrary to conventional Sunbelt-Frostbelt wisdom, “one of the ironies of current public policy as viewed from a New England perspective is that allocation formulas for public funds and other federal aids for regional economic transitions are becoming more favorable and available to New England just as the worst of its own transition problems may be at an end.”<sup>2</sup> In terms of employment created, New England is the U.S. region most favored by foreign investors, who apparently give top priority in their investment decisions to proximity to relevant markets. Second comes availability of labor, with cost, quality and attitude considered important but degree of unionization admitted to be only a minor consideration.<sup>3</sup> New England is near major U.S. and Canadian markets and is relatively close to Europe. Within-industry wage rates in New England are just higher than those in the Southeast but lower than those elsewhere. In addition, high technology companies are attracted by the region’s skilled

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2. Meyer and Leone, *The New England States and Their Economic Future*, 68 AM. ECON. REV. 114 (May 1978).

3. Little, *Foreign Direct Investment in the United States: Recent Locational Choices of Foreign Manufacturers*, NEW ENGLAND ECON. REV. 16 (Nov.–Dec. 1980).

labor force, its concentrations of universities and consulting companies, and its favorable quality of life.

California is a relatively high-wage state but it nonetheless accounted for 19 percent of all new jobs created in the United States in 1978. The aerospace and electronics industries, which have given particular impetus to California's recent growth, reflect the continuing creation of new activities. Most of the manufacturing activities in California were virtually non-existent thirty years ago.<sup>4</sup>

A revolution in information technology is creating the most massive restructuring of New York City's economy since the Industrial Revolution. For over a hundred years, most New Yorkers earned their living by converting materials into products. Fewer and fewer of these activities are surviving. Between 1969 and 1976, New York City lost nearly 600,000 jobs, 70,000 of them in the garment trade alone. In their place are activities that exploit the new micro-technology of computer-linked communications to the fullest. Information has become a major form of wealth and New York City is becoming the information capital not just of the United States, but of the world.<sup>5</sup>

Meanwhile, in keeping with the product cycle and spatial-filtering paradigm, traditional manufacturing activities have been moving to the Texas borderlands.

#### MANUFACTURING GROWTH IN THE TEXAS BORDERLANDS

As the data in Table 1 indicate, average weekly manufacturing wages in the Texas borderlands are low. In 1978, the range for the four major labor market areas in the region was from \$151 to \$179. The only other major Texas labor market area with a weekly average wage below \$200 was Bexar County, which essentially is San Antonio. (A case could in fact be made for including San Antonio in the borderlands; its population is over half Mexican-American, and the definition of the San Antonio functional economic region made by the Bureau of Economic Analysis, U.S. Department of Commerce, includes five counties that border Mexico.<sup>6</sup>)

The high levels of unemployment prevailing in the Texas borderlands are another indication that the regional labor market is anything but tight. In the first quarter of 1980, the metropolitan unemployment rate in El Paso was 9.5 percent; in Laredo, 14.4 percent; in McAllen, 14.2 percent;

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4. Immel, *California and Other States in the Sun Belt Seem Likely to Weather a Recession Well*, *Wall St. J.*, Aug. 15, 1979 at 34.

5. Smith, *Info City*, NEW YORK 24-29 (Feb. 9, 1981).

6. N. HANSEN, *THE BORDER ECONOMY* 7-10, 168 (1981).

TABLE 1  
 AVERAGE WEEKLY MANUFACTURING WAGES IN SELECTED  
 TEXAS COUNTIES, 1978

<i>County</i>	<i>Major City</i>	<i>Weekly Wage</i>
<i>Borderlands</i>		
El Paso	El Paso	\$179
Webb	Laredo	155
Hidalgo	McAllen	151
Cameron	Brownsville	157
<i>Rest of Texas</i>		
Bexar	San Antonio	\$188
Dallas	Dallas	241
Harris	Houston	266
Jefferson	Port Arthur	260
Nueces	Corpus Christi	210
Orange	Beaumont	270
Tarrant	Ft. Worth	218
Travis	Austin	202

Source: Texas Employment Commission

and in Brownsville, 11.4 percent.<sup>7</sup> In the United States as a whole, the Laredo and McAllen rates were exceeded only by Anderson, Indiana (16.8 percent), whose economy is based on the troubled auto industry.

Given these conditions, it is not surprising that the borderlands area has attracted firms that must survive on very narrow profit margins. Thus, for example, while apparel manufacturing is becoming a thing of the past in New York City and other former garment-making centers, it is thriving in Texas. Over the past decade, apparel employment in Texas increased by 40 percent, to 90,000 workers. A recent investigation of this phenomenon concludes that El Paso is the cheapest and most efficient place in the world to make jeans, although the situation is similar all along the Texas borderlands.<sup>8</sup>

Between 1965 and 1979, manufacturing employment in the United States increased by only 15 percent.<sup>9</sup> The data presented in Table 2 show that from 1963 to 1979 employment in this sector more than doubled in the El Paso, Laredo, and Brownsville metropolitan areas, and more than tripled in the McAllen metropolitan area. For the four areas as a whole, manufacturing employment rose by 134 percent during this period. Yet

7. U.S. DEPT. OF LABOR, EMPLOYMENT & TRAINING ADMINIS., AREA TRENDS IN EMPLOYMENT AND UNEMPLOYMENT 39, 52-53 (1980).

8. Berman and Mack, *Renaissance on the Rio Grande*, FORBES 38-40 (Sept. 1, 1980).

9. U.S. BUREAU OF THE CENSUS, STATISTICAL ABSTRACT OF THE UNITED STATES: 1979, 408 (1979).

TABLE 2

## MANUFACTURING EMPLOYMENT IN TEXAS BORDERLANDS METROPOLITAN AREAS, 1963, 1967, 1972, AND 1979

	1963	1967	1972	1979
El Paso	14,916	18,900	26,000	31,550
Laredo	915	700	1,000	2,020
McAllen	2,652	2,400	3,100	9,730
Brownsville	4,817	5,400	6,900	11,220
Total	23,300	27,400	37,100	54,520

Source: Texas Employment Commission

as recently as 1976, the proportion of total employment accounted for by manufacturing in the 24 Texas counties then included in the Southwest Border Regional Commission was only 14 percent; the corresponding national figure was 22 percent.<sup>10</sup> Similarly, the data presented in Table 3 indicate that in 1978 manufacturing accounted for 26 percent of all labor and proprietors in the United States; however, in the four Texas borderlands metropolitan areas the corresponding value ranged from about 6 percent in Laredo to only 18 percent in Brownsville.

There are several explanations for this situation. First, although the growth of factory employment in the borderlands has proceeded at a rapid rate, the base from which it began was extremely low. Second, as pointed out in the previous section, many manufacturing activities are not attracted solely by the presence of cheap labor (usually termed a "large supply" of labor in the Texas booster literature). On balance, the borderlands area does not have the total "package" of advantages offered by other locations, especially where relatively sophisticated activities are concerned. Third, employment in furtive sweatshops that pay as little as \$1 per hour may go unrecorded, though it is not certain that the rate of growth of such employment has differed from that of officially-recorded employment. Finally, the manufacturing growth potential of the borderlands is constrained by the fact that firms in search of cheap labor can go just beyond the border into Mexico, where wages are even lower than on the U.S. side.

## THE INTERNATIONAL SETTING

In the past, third world countries tended to be regarded as sources of raw materials for Western factories as well as markets for Western-produced goods. However, a new international division of labor has been evolving. Essentially it involves a major geographic extension of loca-

10. HANSEN, *supra* note 6, at 70, 72.

TABLE 3

LABOR AND PROPRIETORS INCOME IN TEXAS BORDERLANDS METROPOLITAN AREAS AND IN THE UNITED STATES, TOTAL AND SELECTED SECTORS, 1971 AND 1978 (THOUSANDS OF DOLLARS)

	El Paso		Laredo		McAllen	
	1971	1978	1971	1978	1971	1978
Total	\$971,067	\$2,028,344	\$142,072	\$304,590	\$282,838	\$705,387
Manufacturing	157,156	323,157	6,118	17,301	20,964	73,499
Retail trade	113,250	243,550	28,737	62,080	48,689	108,944
FIRE*	42,413	96,348	5,368	13,476	9,542	23,613
Federal, civilian	81,333	142,843	12,930	13,370	14,138	30,815
Federal, military	123,559	199,281	20,733	655	1,674	2,179
			% of total	% of total	% of total	% of total
	16.2	15.9	4.3	5.7	7.4	10.4
	11.7	12.0	20.1	20.4	17.2	15.4
	4.4	4.8	3.8	4.4	3.4	3.3
	8.4	7.0	9.0	4.4	5.0	4.4
	12.7	9.8	14.5	0.2	0.6	0.3

  

	Brownsville		United States	
	1971	1978	1971	1978
Total	\$266,696	\$650,021	\$676,132,000	\$1,318,750,000
Manufacturing	29,050	119,068	178,262,000	345,771,000
Retail trade	42,311	96,056	73,461,000	131,687,000
FIRE*	12,287	33,099	37,551,000	76,207,000
Federal, civilian	12,561	18,461	30,467,000	52,685,000
Federal, military	1,912	2,473	14,961,000	19,847,000
	10.9	18.3	26.4	26.2
	15.9	14.8	10.9	10.0
	4.6	5.1	5.6	5.8
	4.7	2.8	4.5	4.0
	0.7	0.4	2.2	1.5

\*Finance, insurance, and real estate  
 Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Local Area Personal Income 1971-1976*, Vol. 7, Southwest Region (Washington, D.C.: BEA, 1978), pp. 1, 96, 116, 134, 200; U.S. Department of Commerce, Bureau of Economic Analysis, *Local Area Personal Income 1973-1978*, Vol. 7, Southwest Region (Washington, D.C.: U.S. Government Printing Office), pp. 3, 62, 72, 82, 115.

tional factors that already have been in evidence within the United States and other Western countries: the decomposition of complex production processes, better transportation technologies, improved telecommunications systems, and cheap labor. Under these conditions, U.S. corporations have established profitable manufacturing plants in such distant places as Taiwan, South Korea, and Hong Kong; and increasingly they have been expanding into Mexican border cities.

The principal vehicle for manufacturing expansion south of the border has been the *maquiladora* (assembly plant) program. Begun in the middle 1960s and formalized in the early 1970s, it allows the temporary importation into Mexico of foreign materials for local assembly, with the condition that the final products be exported. The program was specifically designed to take advantage of U.S. Tariff Items 806 and 807, which permit foreign-based subsidiaries of U.S. firms to assemble products whose components were originally made in the United States, and to export the products to the United States with duties imposed only on the value added. The advantages of the program for U.S. corporations are the low cost of Mexican labor, the fact that only labor inputs are subject to tariffs, and the proximity of Mexican border cities. In 1980, for example, the cost of labor in Ciudad Juárez was \$1.33 per hour, including all fringe benefits and taxes. Although there are lower-wage areas in other parts of the world, the difference frequently is more than offset by the presence of better-developed infrastructure and other external economies in the U.S.-Mexico borderlands, lower costs of shipping machinery and materials to foreign plants and of importing finished or nearly-finished goods, and the fact that U.S. managers can live in the United States and still work abroad.

Initially, most *maquiladoras* were small and utilized converted old buildings and little capital. However, over the past decade there has been a steadily increasing trend in favor of greater capital intensity and the use of large new plants in modern industrial parks. By 1978, Mexico was "predominant among the several countries participating in labour-intensive sub-contracting for the United States market both in terms of growth and in terms of the absolute value-added by offshore processers."<sup>11</sup> In that year, *maquiladoras* provided Mexico some 95,000 jobs and \$713 million in value-added, which represented over 70 percent of the total value-added in this type of production in all of Latin America. Only tourism and petroleum sales provide more foreign exchange to Mexico. At present, *maquiladora* employment is estimated to be over 130,000 workers. Ciudad Juárez, with its booming "Little Detroit," accounts for

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11. Newton and Balli, *Mexican In-Bond Industry*, DIRECTOR'S REPORT, UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, 21-24 (1979).



115 plants and 40,000 workers. Comparing these data with those presented in Table 2, it can be seen that *maquiladora* employment in Ciudad Juárez is about one-third greater than manufacturing employment in its sister city El Paso, which itself accounts for well over half of all such employment in Texas borderlands metropolitan areas.

From the perspective of the United States as a whole, lower production costs in the Mexican border industry mean lower prices for U.S. consumers. Nevertheless, U.S. labor unions, which oppose the *maquiladora* program on the ground that it takes jobs from domestic workers, continue to exert pressure on Congress to remove the tariff advantages enjoyed by U.S. corporations operating abroad. In fact, there is little evidence that the "runaway" plants would have been established in the United States if they had not been lured to Mexico. Some of the products now assembled in *maquiladoras* would be dropped altogether if they had to be produced with higher cost and sometimes less efficient U.S. labor.<sup>12</sup> Still other corporations would move their operations to other labor surplus countries if the advantages of locating on the border were curtailed. Moreover, the proximity of Mexico's border cities creates balance of payments and indirect employment advantages for the United States in relation to locating in distant countries. *Maquiladoras* use more U.S. materials and machinery because of the relatively low transportation costs involved, and *maquiladora* workers spend a significant part of their earnings in the United States. The growth of the *maquiladora* industry as such is not the real problem for the United States. Rather, what is at issue is the problem—common to all industrial countries—of adaptation to the evolving international division of labor. The United States is in danger of losing out in the modern growth race to the extent that it directly or indirectly protects and subsidizes domestic industries that no longer have a comparative advantage in the international marketplace. To move into new, innovative activities requires a transfer of labor and capital from old, lower-productivity activities, which may nonetheless be welcome in relatively low-wage countries. For the most part, however, U.S. policy makers have yet to recognize the need for adjustment policies designed to deal systematically with the domestic consequences of a more efficient international division of labor.

It often is argued that proximity to Mexico has placed the Texas borderlands at a distinct economic disadvantage in relation to the rest of the United States, largely because of the ubiquitous presence of Mexican workers, who enter as legal commuters or on an undocumented basis. Although employers may welcome this labor source, the Mexican presence has served to depress wages and employment opportunities for the

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12. Murray, *American Boom in Mexico*, 112 DUN'S REV. 119-27 (Oct. 1978).

majority of U.S. citizen workers in the borderlands. U.S. government policies, it is claimed, have contributed at least tacitly to this situation, yet most of the problems are concentrated along the border and among Mexican Americans (whose stake in this issue will be considered later), rather than diffused throughout the nation. The fact that undocumented Mexican workers have increasingly been going to cities in the U.S. interior still does not alter the relatively disadvantageous position of the borderlands.

In contrast, it should also be recognized that the growth of Mexico's border industry has generated significant benefits for the U.S. borderlands, especially if it is admitted that the plants locating in Mexico would not have located on the U.S. side of the border. For one thing, the work being done in *maquiladoras* usually is linked to complementary activities in plants located in the United States. In 1979, for example, "twin plants" in El Paso employed 3,200 workers; the corresponding payroll was nearly \$17 million.<sup>13</sup> However, the extent to which twin plant linkages primarily benefit the borderlands can easily be exaggerated. A 1979 survey showed that 1,077 suppliers in 36 states were furnishing raw materials, equipment, or services to the *maquiladoras* in Ciudad Juárez. Of this number, 270 were located in Illinois; Texas ranked second with 184 suppliers, but many of these were not located in the borderlands. Nevertheless, \$21 million was spent in El Paso for transportation services related to *maquiladora* production in Ciudad Juárez.<sup>14</sup>

The unique benefits accruing to the U.S. borderlands as a result of *maquiladora* growth—and indeed from the general economic expansion of Mexico's border cities—are found primarily in retail trade. A French student of the borderlands points out that:

Taken as a whole, the interdependence of the tertiary sectors is not symmetric. Nearly all of the expenditures of the North Americans remain in their country, whereas from 40 percent to 75 percent of the outlays of Mexican families are made across the border. The local market has been captured by the United States. And if the overall balance of transactions remains positive for Mexico, it is thanks to the large waves of tourists who come from the interior of the United States, and thanks to the superior purchasing power of the North Americans.<sup>15</sup>

The importance of retail trade in the local economies of the Texas borderlands metropolitan areas is shown in Table 3. In both 1971 and

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13. W. Mitchell, *Economic Impact of the Maquiladora Industry in Juarez on El Paso, Texas, and Other Sections of the United States for 1979* (unpublished paper, 1980).

14. *Id.*

15. Revel-Mouroz, *Economie frontalière et organisation de l'espace: réflexions à partir de l'exemple de la frontière Mexique-Etats-Unis*, 18 *CAHIERS DES AMERIQUES LATINES* 15 (1979).

1978, the proportion of total labor and proprietors income accounted for by the retail trade sector was higher in each area than in the United States as a whole. Laredo's share of income from retail trade is twice that for the United States. In contrast, the higher-order services represented by the finance-insurance-real estate (FIRE) sector play a relatively small role in each of the four areas.

#### THE ECONOMIC STATUS OF THE BORDERLANDS POPULATION

In an earlier study, I reported a highly significant inverse relationship between per capita income (1974) and percent of hispanic-origin population (1970) in all cities along the U.S. border with Mexico that had a population of 25,000 or more in 1975.<sup>16</sup> In each of the relevant cities in California, Arizona, and New Mexico, the hispanic group made up less than half of the total population. However, in Texas this group accounted for 58 percent of the population in El Paso; 65 percent in Del Rio; 86 percent in Laredo; 69 percent in McAllen; 64 percent in Harlingen; and 86 percent in Brownsville. The regression equation relating per capita income (Y) and proportion of the population that is hispanic (X) for these Texas cities is  $Y = a - 38X$ . The equation implies that if there were no hispanics, per capita income would be \$5530 (the Y-intercept). But for each increase of 1 percentage point in the proportion of hispanics, per capita income would be reduced by \$38. Even though there are only six pairs of observations, the  $r^2$  value of .89 is significant at the .02 level. Of course, the high degree of association found here between per capita income and proportion of hispanics does not mean that the latter variable in itself explains the former. In addressing the issue of why this association exists, such factors as education, discrimination, and degree of competition from Mexican workers would need to be investigated in detail. In addition, the cross-sectional nature of the present analysis does not take into account the dynamic factors involved in the changing social and economic status of Mexican Americans. Such recent evidence as does exist in fact suggests that in terms of educational attainment and earnings in relation to the rest of the population, the Mexican American population has been making advances.<sup>17</sup>

The data presented in Table 4 show that in 1978 per capita personal income in El Paso (\$5639) was considerably higher than in the other Texas borderlands metropolitan areas. This is probably due to the large federal government presence in El Paso. The main component in this

16. HANSEN, *supra* note 6, at 142-45. The data were taken from U.S. BUREAU OF THE CENSUS, CITY AND COUNTY DATA BOOK 1977, 600-625, 708-19, and 751-57 (1978).

17. HANSEN, *supra* note 6, at 131-42.

TABLE 4

PER CAPITA PERSONAL INCOME IN TEXAS BORDERLANDS  
METROPOLITAN AREAS AND IN THE UNITED STATES, 1971 AND  
1978

	1971	1978	% change 1971-1978
El Paso	\$3201	\$5639	76.2
Laredo	2260	4529	100.4
McAllen	2045	4323	111.4
Brownsville	2436	5024	106.2
United States	4132	7840	89.7

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Local Area Personal Income 1971-76, Vol. 7, Southwest Region 1, 96, 116, 134, 200 (1978); and U.S. Department of Commerce, Bureau of Economic Analysis, Local Area Personal Income 1973-1978, Vol. 7, Southwest Region 3, 62, 72, 82, 115 (1980).

sector is the Fort Bliss military complex, which is the headquarters of the U.S. Army Air Defense Center as well as a training center for the U.S. Army and the West German Air Force. In 1971, the combined federal, civilian, and military sectors accounted for 21 percent of total labor and proprietors income in El Paso (see Table 3). The corresponding figure for 1978 was about 17 percent; the military proportion was especially high: 9.8 percent in comparison with a national figure of 1.5 percent. In no other borderlands metropolitan area was the military proportion greater than 0.4 percent in 1978. It may be noted that the military component in Laredo fell from 14.5 percent to 0.2 percent between 1971 and 1978 due to the closing of an air base. Nevertheless, between these two years per capita personal income in Laredo grew by over 100 percent, compared with 76 percent in El Paso and about 90 percent for the nation (see Table 4). Per capita income growth during the same period was even more rapid in Brownsville (106 percent) and in McAllen (111 percent).

In general, the data in Table 4 indicate a convergence of per capita income levels among the Texas borderlands metropolitan areas, as well as a convergence between per capita income in the United States and that in each of the borderlands areas except El Paso. The absolute per capita income gap between the nation and the borderlands remains large, yet there are two ameliorating factors. One is the relatively low cost of living in the borderlands. A management consulting firm estimates that a family earning \$28,678 in El Paso can live as well as a family earning \$30,000 in the "typical" U.S. city.<sup>18</sup> And field survey results indicate that the cost of living in Laredo is 85 percent of that in Houston; in Brownsville, it

18. *Costs of Living*, Wall St. J., May 5, 1980 at 44.

TABLE 5

BIRTHS PER THOUSAND POPULATION IN TEXAS BORDERLANDS METROPOLITAN AREAS, THE STATE OF TEXAS, AND THE UNITED STATES, 1970 AND 1975

	1970	1975
El Paso	26.0	21.6
Laredo	33.1	27.2
McAllen	32.0	28.6
Brownsville	28.8	27.1
Texas	20.6	17.6
United States	18.4	14.8

Source: U.S. Bureau of the Census, *County and City Data Book, 1977* (Washington, D.C.: U.S. Government Printing Office, 1978), pp. 3, 549, 559, 569.

is only 82 percent of the Houston level.<sup>19</sup> Also, per capita income data include all persons regardless of age. Thus, places where average family size is relatively large would fare better in terms of family income comparisons with other places than they would in terms of per capita income comparisons. Birth rates in the Texas borderlands are falling as they are in the rest of the country (Table 5), yet they remain relatively high in every borderlands metropolitan area. In 1975, the birth rates in Laredo, McAllen and Brownsville were almost twice the national rate. In the United States as a whole, only one metropolitan area (Provo, Utah, 35.1) had a 1975 birth rate higher than that of McAllen. El Paso's rate of 21.6 was exceeded only by six non-borderlands metropolitan areas. The latter were characterized either by a high proportion of Mormons (Provo, Salt Lake City) or the dominance of a local military base (Clarksville, Tennessee; Fayetteville, North Carolina; Killeen, Texas; and Lawton, Oklahoma).

#### ANTICIPATING THE FUTURE

To date the forecasting record of regional econometric analysis has been disappointing. Most models are miniature versions of national forecasting models, with little attention given to the relevance of national model structures and time horizons to regional analysis. "The results of the research undertaken so far have been weakened by severe data limitations, too few observations, the reliance on static models, their recursive structure, the heavy dependence on national exogenous variables and the neglect of space."<sup>20</sup>

19. Smith and Newman, *Depressed Wages Along the U.S.-Mexico Border: An Empirical Analysis*, 15 *ECON. INQUIRY* 51-66 (Jan. 1977).

20. H. RICHARDSON, *REGIONAL ECONOMICS* 214-15 (1979).

Although it is still difficult to anticipate in detail the economic future of regions, one may nonetheless with some humility at least attempt to outline the general shape of development over the next two decades. Moreover, because there is little prospect that the Texas borderlands will be a source of major innovations during this period, it should be less difficult to discuss its future than would be the case for centers of innovation such as those discussed previously.

Agriculture or ranching has been the mainstay of many counties in the Texas borderlands. In terms of total activity, this has been especially so in the Lower Rio Grande Valley, which accounts for over three-fourths of the cash receipts for all crops grown in border counties.<sup>21</sup> Texas Employment Commission estimates indicate that agricultural employment in Cameron and Hidalgo counties remained steady throughout the 1970s, at about 12,000 workers.<sup>22</sup> However, the picture is in fact much more complex because official data do not reflect the presence of Mexicans, and migrant and seasonal farmworkers present special problems. Estimates of the total number of agricultural workers who live in the Valley at some time during the year vary widely and are unreliable; yet they invariably put this total at many times the average annual local agricultural employment level. In any event, water constraints and increasing mechanization will limit agricultural employment opportunities. The future growth of the borderlands economy will have to be based on other activities.

Manufacturing employment will probably continue to increase, though not as rapidly as in the *maquiladoras* on the Mexican side of the border. However, given the symbiotic relationships that exist between border cities, *maquiladora* growth will benefit the U.S. side because of the complementary activities and retail sales that will be generated. There may also be opportunities to upgrade the types of industries locating in the borderlands, as well as the skills and incomes of industrial workers. The South provides evidence that this can be achieved despite initial dependence on low-wage, slow-growth sectors. The industrialization of the South was initiated in large measure by the movement of textile mills from New England and other northern areas into the Piedmont region of the central Carolinas. The textile mills in turn generated other activities. For example, by 1970 there were 214 establishments in the South producing machinery for the textile industry, and 65 chemical plants were producing synthetic fibers. Most of these plants were located where textile

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21. Governors of Arizona, California, New Mexico, and Texas, Application for Designation as a Title V Regional Action Planning Commission, D22, submitted to the U.S. Dept. of Commerce July 1976.

22. LOWER RIO GRANDE DEVELOPMENT COUNCIL, OVERALL ECONOMIC DEVELOPMENT PROGRAM 69 (Nov. 1977).

production was concentrated. Similar phenomena occurred as manufacturing decentralized successively to Georgia, the Tennessee Valley, Mississippi, and Arkansas. Moreover, as general upgrading occurred, further efforts to promote industrialization no longer relied on cheap labor and subsidies as selling points.<sup>23</sup>

An editorial in the *Wall Street Journal* stated that Mexican-Americans in San Antonio have "a valid point" in insisting that San Antonio development promoters not use cheap labor in their sales talks; and it also pointed out that relocated plant managers in the Southwest are "full of praise" for the Mexican-American work force.<sup>24</sup> Given the new international division of labor, it would seem rational that even more low-wage activities be performed abroad, with a concomitant upgrading of the activities performed in this country, including the borderlands. Yet there is a difficulty here not found, for example, in the industrializing South. This is the presence of Mexicans willing to work for low wages. Mexican-American organizations generally oppose strict measures to curtail undocumented Mexican workers, partly because of a shared culture and partly because the harassment of Mexicans inevitably leads to the harassment of some Mexican-Americans. (Mexican-American labor leaders have been ambivalent in this regard, but they primarily object to the use of Mexican workers as strike breakers.) This highly complicated issue cannot be resolved here.

For the foreseeable future, federal civilian employment and earnings in the borderlands will grow relatively slowly. This assumes that the Reagan Administration's austere federal spending and employment objectives are realized in significant degree. With the possible exception of El Paso, where federal civilian income accounts for a relatively high proportion of total personal income, the effects of the federal civilian slowdown are likely to be much the same in the borderlands as in the nation as a whole. However, virtually-assured large increases in military spending will probably accelerate El Paso's growth, but have little impact in the other borderlands metropolitan areas.

Finally, the future of the U.S. borderlands depends in part on the nature and extent of economic development in Mexico's border cities. *Maquiladora* activity has already been discussed in this regard. More generally significant is the fact that the Mexican government has been initiating regional-sector planning efforts intended to promote rural development and rapid (though more decentralized) industrialization. The direct use of massive oil and gas resources, as well as revenues derived from their sale abroad, give Mexico a unique opportunity to realize its objectives.

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23. N. HANSEN, *THE FUTURE OF NONMETROPOLITAN AMERICA* 163-64 (1973).

24. *The Private Sector Social Revolution*, *Wall St. J.*, Sept. 25, 1979 at 22.

Reynosa, for example, is already an important petrochemical center, and relatively well-paid Pemex employees spend a large proportion of their income across the border. Natural gas from fields in northeastern Mexico was once piped to Texas, but in recent years it has been sent instead to Monterrey, Monclava, and Chihuahua. But Mexico could decide to complete a projected pipeline from Chiapas to Texas that would transport gas from the south to the United States, via Reynosa.<sup>25</sup> In the long run, the successful development of interior growth centers in Mexico could also reduce the number of migrants flowing to Mexican border cities as well as to the United States. In any case, it is likely that the United States and Mexico will become increasingly interdependent and that this relationship will be more balanced than in the past. In most instances one side's gain implies a mutual gain, rather than a loss to the other side. And because interdependence is greatest along the border, this part of the United States should reap relatively large gains from Mexico's economic development.

Of course, without meaningful international cooperation, issues involving water availability and the environment could prove to be exceptions to this generally positive scenario. Careful reading of plans prepared by various Texas borderlands development agencies does not reveal any great concern about water availability problems, even though most of the area is quite arid. Some portions of the Middle Rio Grande have had to shift to crops that require less frequent irrigation, but the Amistad Reservoir has produced a major recharge of underground water in its vicinity. Residential and industrial water use in the Lower Rio Grande Valley increasingly competes with agricultural uses, but there seems to be some willingness to make this trade-off in order to diversify the local economy and expand employment opportunities. Then, too, development-oriented organizations may simply be loathe to dwell on water problems, even though typical assessments find water shortages in all of the Rio Grande Basin except in the headwaters area.<sup>26</sup> Texas law acknowledges that underground water will run out eventually by granting farmers a depletion allowance, but farmers and other users are allowed to pump away, racing each other to the bottom of the aquifer. Such undisciplined behavior—whether it involves water consumption or negative environmental externalities—is even more difficult to bring under control when the parties involved are in different countries, as is the case along the Mexican-U.S. border.

Continuing rapid growth in the borderlands will involve greater de-

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25. Vanneph, *Pôle pétrolier et frontière: Reynosa (Mexique)*, 18 CAHIERS DES AMERIQUES LATINES 19-23 (1978).

26. J. Dobson and A. Sheperd, *Water Availability for Energy in 1985 and 1990*, 3-44 (Oct. 1979) (Oak Ridge Nat'l. Lab. Report).



mands on water and the environment, not only because there will be more people, but also because per capita income levels will be higher. Successful management of the problems ahead will require greater trans-boundary cooperation; but since one side does not have the authority to deal concretely with problems originating on the other, such cooperation really implies a commitment to clean up one's own act. Mexican and U.S. colleagues present here are much more expert than I concerning what this involves in detail.

## PATRONES DE CRECIMIENTO ECONOMICO EN LAS TIERRAS FRONTERIZAS TEJANAS

Las actividades tradicionales manufactureras se han cambiado a las tierras fronterizas tejanas a causa de la descentralización en los EUA y por los sueldos bajos y mano de obra abundante en Tejas. Sin embargo las manufacturas son sólo una pequeña parte del empleo total debido a la mano de obra más barata allende la frontera. En el futuro el incremento en la manufactura, así como la industrialización y el desarrollo de recursos mexicanos, pueden ayudar a toda la región.

### *Descentralización de la actividad manufacturera en los EUA*

La actividad manufacturera en los EUA se ha desplazado de las regiones noroeste y norte central al sur y al oeste. Esto puede ser mejor explicado por los ciclos de vida de los productos y la filtración espacial industrial.

El ciclo de vida de un producto tiene tres fases que requieren distintas habilidades y tipos de capital. La fase temprana de habilidades usa capital bajo, dependiendo de economías externas y su contratación. La fase de crecimiento usa técnicas de producción en masa y habilidades de dirección que incrementan la proporción entre el capital y el trabajo. Finalmente la fase madura maneja producción rudimentaria que usa trabajo barato y de poca habilidad como el insumo humano clave. Para permanecer competitivas, las compañías cambian la localización de su producción respondiendo a las necesidades cambiantes en el ciclo del producto.

Las actividades tradicionales manufactureras se han cambiado a las tierras fronterizas tejanas porque otras áreas en fase madura han creado nuevas actividades tecnológicas. Nueva Inglaterra, California y Nueva York hoy tiene atractivo para la industria moderna, incluida la inversión extranjera, gracias a los avances en aspectos aeroespaciales, electrónicos y de computadoras.

### *Crecimiento manufacturero en las tierras fronterizas tejanas*

Los bajos salarios en las tierras fronterizas tejanas y los altos niveles de desempleo han atraído a compañías que sobreviven sobre angostos márgenes de utilidad, como los que fabrican vestuario.

La manufactura, aunque se ha más que duplicado en estas áreas, constituye sólo una pequeña parte del uso total de fuerza de trabajo. Esto puede ser explicado por sus salarios bajos, empleo sin registro y la obtención de mano de obra aún más barata allende la frontera.

### *El escenario internacional*

Las plantas manufactureras que pueden tener utilidades se han cambiado a ciudades fronterizas mexicanas. El programa de maquiladoras permite la importación temporal de materiales a México bajo la condición de que el producto se envíe afuera. Nuestras leyes aduanales imponen derechos sólo sobre el valor agregado.

En la última década estos proyectos le han dado a México 95,000 empleos, excediendo en mucho los empleos en manufactura de las tierras fronterizas tejanas. Mientras que esto significa precios más bajos para los consumidores en los EUA, algunos argumentan que estamos perdiendo empleos para trabajadores nacionales. Sin embargo, no hay pruebas de que estas compañías permanecerían activas o no se irían a otro país si el programa terminara. El trabajo hecho en la industria maquiladora está generalmente ligado a actividades complementarias en los EUA aunque mucho de él sobrepasa la frontera. También el comercio local al menudeo puede beneficiarse con servicios de orden más alto.

#### *El estado económico de la población de las tierras fronterizas*

Existe una relación inversa entre el ingreso per cápita y el porcentaje de origen hispánico en todas las ciudades de la frontera. El hiato en el ingreso absoluto per cápita entre el resto del país y las tierras fronterizas sigue siendo grande pero debe tomarse en cuenta el bajo costo de vida en esta región. Los que toman decisiones en la política de los EUA deben enfrentarse a problemas de educación, discriminación y competencia con los trabajadores mexicanos pero también deben de tomar en cuenta que los logros educativos de las tierras fronterizas y sus ganancias han avanzado con mayor rapidez que los del resto de los EUA.

#### *Anticipando el futuro*

Existe poca posibilidad de que las tierras fronterizas sean testigos de grandes innovaciones en el futuro. Los límites del agua y el incremento en la mecanización limitarán las oportunidades agrícolas y ganaderas. Las manufacturas probablemente se incrementarán y el crecimiento en las maquiladoras beneficiará a las actividades complementarias y a las ventas al menudeo de los EUA. Puede haber oportunidad para elevar el nivel industrial y las capacidades y los ingresos de los trabajadores industriales. Como en el sur de los EUA, la atracción inicial de sectores de salarios bajos puede llevar a una gran expansión de industrias de apoyo haciendo que la dependencia de trabajo barato ya no sea necesaria para la promoción de la industrialización. Finalmente el empleo federal civil y los aumentos en el gasto militar probablemente acelerarán el crecimiento en El Paso.

El programa de maquiladoras, junto con el desarrollo mexicano de petróleo y gas harán a los EUA más interdependiente con México. La mayor parte de este fenómeno ocurrirá en la frontera y debe de ayudar a la región.

Mayores demandas de agua resultarán de los incrementos en la población y en los niveles de ingreso per cápita. La cooperación transfronteriza, para que tenga éxito, requerirá un compromiso de cada país de purificar su propia agua.