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Conclusions and Recommenda-

Most careful observers of the U.S. Mexican border situation are well aware that the region's population and economy have expanded rapidly since the implementation of NAFTA. Nevertheless, it is clear that by disaggregating the data into different time periods, different industries, and different subregions, it is possible to better understand the changing structure and performance of this heterogeneous and complex region. Additionally, the surveys of local stakeholders provide further insight into the region's dynamics by tapping into the perceptions of those who are most familiar with the local communities.

In the initial section, a framework for summarizing and discussing the main findings of the study presented in earlier sections is presented. The framework consists of a set of drawn from mainstream economic theory that represent reasonable expectations regarding the likely impact of the increased economic integration that NAFTA has permitted. In the following section, the implications of these conclusions for local, state, and national governments and NOBE/REF as an organization of researchers are discussed.

A FRAMEWORK FOR ANALYZING THE DATA

The framework sketched out below consists of seven hypotheses, six regarding the likely demographic and economic impact of NAFTA on U.S. Mexican border communities and one hypothesis regarding the communities' need for and

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access to tools of economic analysis. The six economic hypotheses represent the likely impacts that were advanced by the proponents of NAFTA during the ratification process that took place in the early 1990s. In advancing these arguments, NAFTA proponents drew mainly from mainstream economic theory in terms of how they expected the agreement to impact the U.S. Mexican border region, a region that was given special consideration and treatment at the time, especially in the side agreements on environmental and labor issues.

New economic integration agreements like NAFTA have always been controversial and all have their proponents and their critics. The mainstream free trade position is drawn from neoclassical economic theory. It is based on certain assumptions about the nature and operation of markets and resource endowments as well as other factors. Therefore, it is subject to criticism on a variety of grounds. Nevertheless, the logic of the agreement itself was largely based on international trade and regional development theory that, in most economists view, includes the following hypotheses or statements regarding its likely impacts on the U.S. Mexican border region.²¹

1. Impact on immigration from the interior of Mexico. Given the relatively smaller size of the Mexican economy, NAFTA would have a larger and more positive impact on wages and incomes in Mexico than in the United States. Thus, Mexican jobs and incomes could be expected to rise faster than in the United States, ultimately reducing the pressures on Mexicans to migrate from the interior of the country to its northern border region and into the United States.

2. Impact on the border region's infrastructure, environment, and employment in trade-related sectors. Due to lower tariff and nontariff barriers, NAFTA would increase the volume and value of cross-border shipments of goods (exports and imports) from both the United States and Canada. This expansion, in turn, would be expected to negatively impact the border region's infrastructure and environment through increased traffic congestion and reduced air quality.²² The

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agreement would also increase employment in trade-related sectors such as transportation and public utilities, especially in those border communities located on or near the major north-south trade corridors.

3. Impact on the Mexican maquiladora industry and its linkages to the U.S. border region. Due to the rules of origin imposed by NAFTA regarding domestic content provisions required to obtain NAFTA status in terms of low or zero tariff rates for manufactured products, foreign direct investment from both NAFTA member and nonmember countries would be increased throughout Mexico, but especially at the border where the larger and most established component of the maquiladora industrial base is found. Such investment would, in turn, stimulate employment in a variety of economic sectors in the U.S. border region.²³

4. Impact on manufacturing in the border region. Due to reduced tariffs, a more favorable environment for foreign investment in Mexico, and dramatically lower wages in Mexico, manufacturing employment would decline on the U.S. side of the border and rise throughout Mexico, including the border region.

5. Impact on retail sales in the border region. Lower tariffs and liberalized investment laws in Mexico would allow U.S. goods to be sold in Mexico in U.S. style shopping malls throughout Mexico's northern states, thereby reducing Mexican retail spending in U.S. border communities.

6. Impact on poverty and prosperity in the border region. The overall effect on prosperity, as measured by real income per capita, on the U.S. Mexican border region would be positive, especially on the Mexican side. That is, the incidence of poverty would fall while prosperity would rise.

The data compiled on the actual demographic and economic situation of the U.S. Mexican border communities as well as the perceptions of local stakeholders as reported in the

surveys will be used to determine the validity of these hypotheses.

A final hypothesis advanced by NOBE/REF researchers relates to those sections of the survey that deal with the perceptions of local stakeholders, especially those associated with governmental or nongovernmental organizations, regarding the need for and access to tools of economic analysis.

7. Need for and access to tools of economic analysis. Given the rapidly changing demographic and economic situation, the surveys were expected to reveal a strong demand for the tools of economic analysis. Furthermore, smaller communities would be less likely than larger ones to actually have access to such tools and Mexican border communities would be less likely than U.S. border communities to have access to such tools.

FINDINGS AND CONCLUSIONS

What do the findings of this study indicate with respect to these hypotheses? Due to incomplete data sets, especially on the Mexican side, and the limited scope of the research, it is difficult to definitely confirm or reject these hypotheses. However, in general terms, the findings from the data compiled here on border demographic and economic variables, together with findings from other studies and the qualitative surveys, can be regarded as indicative of major trends and suggestive of where clarification through future research is needed.

In analyzing these hypotheses, it must be made clear that the conditions in the border communities are being assessed in the context of a project in process. That is, the NAFTA era has just begun, and its full impact will not be felt for years to come. First, all of the provisions of NAFTA are not yet fully phased in this will require several more years. In addition, the supposed benefits to Mexico of rising employment, wages, and income, and the reduced pressures to migrate to the United States will take years, perhaps decades, to be realized in a significant way. Meanwhile, a whole host of

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issues shaping U.S. Mexican relations and economic integration in the Americas could take unexpected turns that would alter or delay the impact of NAFTA on the region. Mexico itself has many problems ranging from the Zapatista uprising in Chiapas and the difficult path toward democracy to an economy that has come out of a crisis but has yet to resolve the problems of a weak banking sector. Finally, any scenario must also include many factors on the U.S. side, including the health of the U.S. economy, decisions regarding when and how to implement specific provisions of NAFTA, and U.S. leadership and participation in future economic integration activities in the hemisphere, just to mention a few. With these caveats, the seven hypotheses can be examined.

1. Impact on immigration from the interior of Mexico. While no data on migration were included in this study, it is possible to make some inferences on the basis of what information is available. The expectation was that NAFTA would increase employment, wages, and incomes throughout Mexico, thereby reducing the incentives for internal and international migration from the interior of Mexico.

The data indicate that this has not occurred. Employment, wages, and incomes increased in Mexican border communities, apparently attracting more migration from the interior of the country. Border population growth rates were higher in the NAFTA era (1995-2000) than in the preceding period (1990-1995), while for Mexico as a whole the rate fell substantially (see Table 5). Furthermore, it appears that the improved conditions in Mexican border communities were not enough to offset the incentives drawing people into the United States.

In the U.S. border region the population growth rate did fall during the NAFTA era by approximately 20%, compared to the nation as a whole at about 14%. However, population growth rates during both periods were about twice as high for the border region as for the United States as a whole. This does not mean, however, that international migration from Mexico declined, since there are many factors that enter into such a determination that are outside the scope of this study. The

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one clear conclusion that can be drawn here is that Mexico's weak national economy in the mid-1990s and the employment opportunities in the rapidly expanding maquiladora sector in the northern border region stimulated significant internal migration.

2. Impact on the border region's infrastructure, environment, and employment in trade-related sectors. As reported above, NAFTA provided for lower tariffs and relaxed investment laws that, in turn, stimulated expanded trade and direct foreign investment in Mexico. Thus, it was logical to expect that border infrastructure and the environment would be negatively impacted during the NAFTA era. The survey data provide some interesting perspectives on this situation.

On the U.S. side, respondents felt that there was a perceptible and strong impact on the region's infrastructure (see Figure 3), yet almost half of the respondents felt that the quality of their county's infrastructure had improved between 1994 and 1999 (see Figure 4). This was apparently due mainly to improved funding made possible by an expanding U.S. economy.

The impact of NAFTA was generally regarded as positive on a wide range of issues, from focusing national attention on border environmental problems to improving cross-border cooperation on environmental problems (see Figure 5). However, there was disagreement on whether the quality of the environment had improved or worsened during the NAFTA era (see Figure 6).

On the Mexican side, the respondents perceived a strong impact on the region's infrastructure due to NAFTA (see Figure 21), but they also felt that the quality of the local infrastructure generally had improved during the NAFTA era (see Figure 22).

As in the United States, most Mexican respondents regarded NAFTA's impact as positive on issues such as focusing national attention on border environmental problems and improving cross-border cooperation on environmental problems (see Figure 23). There was also substantial disagreement on whether the environment had improved, remained

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the same, or worsened during the 1994-1999 period (see Figure 24). When asked about specific environmental issues, such as air and water quality, there was substantial agreement that these had deteriorated (see Figure 25).

With respect to trade-related employment, a recent study examining the six largest urban subregions of the U.S. border indicates that the transportation and public utilities sector has seen not only significant employment growth since the implementation of NAFTA, but increases in its relative importance as well (Gerber and Rey 1999). Gerber and Rey's study notes that the link between NAFTA and increased employment in this sector may not be causal, but asserts that there is a logical link between increased overland trade and increased employment in this sector.

Also, another study specific to Texas shows that the state has experienced higher transportation employment rates, especially in cities like Laredo. In addition, other direct benefits from international trade have come to the state by way of the federal jobs created in the U.S. Customs Service, the Immigration and Naturalization Service, and other federal law enforcement agencies throughout the Texas-Mexico border region. These jobs are higher paying than the average jobs available in the border cities (Phillips and Manzanares 2001).

3. Impact on the Mexican maquiladora industry and its linkages in the U.S. border region. The data clearly indicate that the maquiladora industry has become an important driver of Mexico's border economy. As noted above, employment in this sector in the border region has more than doubled during the NAFTA era, due mainly to the reduction in Mexican labor costs to foreign investors as a result of the 1994 peso crisis. Another factor that could have influenced non-NAFTA country companies to invest in Mexico is the desire to obtain duty-free access to the North American market. With respect to the growth of linkages between the maquiladora industry and U.S. border urban areas, Hanson (2001) provides evidence that during the 1975-1997 period the growth of export manufacturing in Mexico can account for a substantial portion of employment growth in U.S. border cities. The specific sec-

tor where employment is created depends on the size of the U.S. city, according to Hanson:

These findings are consistent with the regional-production-network hypothesis: as U.S. firms move assembly operations to Mexico, they also move complimentary manufacturing activities, such as the production of parts and components, to large U.S. border cities. Hence, border cities appear to specialize in different tasks. Small border cities, such as Nogales and Laredo, are mainly transshipment points in North American trade, while large border cities, such as San Diego and El Paso, are major manufacturing sites (2001, 22).

Another study (Jenner et al. 1998) has similar findings to those of Hanson, but suggests that the quantitative link between Asian maquiladora production in Tijuana and the sourcing of material and service inputs in San Diego (the largest U.S. border city) may be somewhat smaller than what Hanson suggests: only 5% of their inputs are sourced in San Diego with another 8% being purchased from firms in other parts of Southern California. Nevertheless, both of these studies do support the hypothesis that there are cross-border links with the maquiladora industry and as that industry grows those links are likely to grow as well.

4. Impact on manufacturing employment in the border region. Increased cross-border integration implies that manufacturing should move from high- to low-wage areas. In general terms, this was true of U.S. manufacturing plants moving to Mexican border cities. During the 1995-1997 period, manufacturing employment in the Mexican border region grew at an annual rate of 21% compared to just over 2% in the U.S. border region. However, because suppliers are starting to locate in U.S. border cities, cities like El Paso can still claim the presence of a significant manufacturing sector, a development that can be attributed to the location of the maquiladora sec-

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tor across the border (Vargas 1998).²⁴ The high growth rate in Mexico resulted in a significant change in the structure of the labor force. In 1992, only 22.3% of the Mexican border labor force worked in manufacturing, compared to 22% in Mexico as a whole. By 1998, 34.8% of the Mexican border labor force worked in manufacturing, compared to 22.3% for Mexico as a whole.

Gerber and Rey, in their study of six U.S. urban border regions, divide the manufacturing sector into durables and non-durables and utilizing an analysis of location quotients show that the pattern for manufacturing involves a smaller durable goods sector (usually much smaller) and three regions with larger than average non-durable sector (1999, 12). Thus, during the NAFTA era, some cities suffered a loss of manufacturing jobs, while others experienced slight gains. The case of El Paso is an interesting example in terms of what has happened to different manufacturing sectors. There, losses in the apparel sector have been offset by gains by plants that supply plastic-injection molding to the maquiladoras. In spite of this, manufacturing employment has not registered positive gains because the losses in apparel, a more labor-intensive sector, are larger than the gains in plastic-injection molding, a more capital-intensive sector that requires much less labor, although the labor component is highly skilled and better compensated (Vargas 1998).

5. Impact on retail sales in the border region. Again, the logical pattern here suggests that increased integration would imply losses of retail sales on the U.S. side and gains on the Mexican side. The data, gathered from a variety of sources, tend to support this hypothesis, with some modification.

The data on border transactions indicate that Mexicans have been buying less in the United States and more in Mexico during the NAFTA era and Gerber and Rey (1999) shows that location quotients in retail trade, while significantly larger than in the national economy, have declined in importance during the same period. The shift-share analysis presented earlier indicates that retail trade grew in absolute numbers during the NAFTA era, but apparently at a slower rate, result-

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ing in a decline in the relative importance of that sector compared to previous periods. However, even though Mexicans are buying less from U.S. stores due primarily to the availability of the same goods in Mexico, Mexican purchases in the U.S. border region are still substantial. For instance, in El Paso 30 to 40% of retail sales are attributed to Mexicans. More importantly, in the El Paso downtown area, Mexicans represent up to 90% of any given store's sales.

6. Impact on poverty and prosperity in the border region. There are several indicators that can be utilized to determine what has occurred with respect to per capita income. However, data availability differs in the United States and Mexico.

On the U.S. side (see Tables 3 and 4), measures of poverty for the U.S. border region during the NAFTA era were not available. However, Peach (1997), using census data from 1969, 1979, and 1989, determined that not only was income inequality in the region greater than in the nation, but that all common measures of income distribution indicate a general trend toward greater inequality during the 1980s. Although there are many determinants of poverty, these data together with the general trend toward increased income inequality in the United States suggest that the incidence of poverty in the region, especially in the Texas border region, rose during the 1990s. Another indicator of the high degree of poverty is the low percentage of the population 25 years old or older with a high school diploma.

With respect to prosperity, the data on the average annual percent change in per capita income in Table 4 show two important trends. First, while income increased at an annual rate of 2.7% during the 1994-1997 period, the rate of increase was lower than in the previous period from 1990 to 1993. Second, during the 1990-1993 period, per capita income in the border region increased at a higher rate than the United States as a whole, while in the 1994-1997 period, the rate of increase in the border region was less than that of the United States as a whole.

This means that during the period after the implementation of NAFTA a period of vigorous expansion in the U.S. econo-

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my the border region underperformed the nation as a whole. Therefore, while income per capita rose throughout the 1990s, the income gap between the border region and the nation fell during the 1990-1993 period. During the 1994-1997 period, after the implementation of NAFTA, that gap increased.

The comparison of U.S. border performance in the 1990s with that of the overall national economy, however, is perhaps unfair and would be expected to yield skewed results showing an underperforming border region. A more appropriate comparison would be between the U.S. border and other similar subregions of the United States. For example, a study comparing the Texas border with areas having similar characteristics, such as Kentucky, West Virginia, or Mississippi, showed that the Texas border outperformed these regions in the United States in job growth as well as earnings per job during the 1990s (Phillips and Dittmar 1999). Although the poor counties along the Texas border did underperform these same regions during the 1990s in per capita income, it should be noted that Texas border counties have larger households than the rest of the United States, which tends to bias the per capita income figures downward.²⁵

On the Mexican side (see Table 5), with respect to poverty, the data for the Mexican border region are clear. The percentage of the work force in the border region earning less than the minimum wage declined during the 1990s. In Mexico as a whole, however, that percentage increased significantly, increasing from 8.5% during the 1990-1994 period to 11.2% during the 1994-1998 period.

From 1990 to 2000, per capita GDP (in constant 1993 pesos) at the border increased from \$15,350 to \$19,580 an increase of almost 28%. In Mexico as a whole, the increase was only 3%. This difference must be adjusted to account for the impact of the higher inflation rate normally experienced in the Mexican border region. Inflation along the border is generally estimated to be about 25% higher than the rest of Mexico.²⁶ However, even accounting for 25% higher inflation, real per capita GDP can be estimated to have risen by 21%, compared to 3% in Mexico overall. The border population, there-

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Table 18. U.S. Mexican Border Communities
Access to Tools of Analysis

Type of System	Importance (Very or Somewhat)	With Access	Regular Use
U.S. Border Communities			
Demographic Modeling	83%	55%	75%
Economic Modeling	79%	37%	58%
Economic Monitoring	78%	44%	75%
Environmental Monitoring	61%	27%	66%
Infrastructure Needs Forecasting	81%	37%	80%
Quality-of-Life Monitoring	76%	23%	77%
Mexican Border Communities			
Demographic	93%	29%	60%
Economic Modeling	94%	21%	49%
Economic Monitoring	97%	37%	66%
Environmental Monitoring	87%	23%	65%
Infrastructure Needs Forecasting	98%	26%	67%
Quality-of-Life Monitoring	93%	18%	67%

fore, seems to have enjoyed a significantly greater improvement in purchasing power than people in the rest of Mexico.

In light of information presented in this study, some important contrasts can be seen in the changing patterns of poverty and prosperity when comparing U.S. and Mexican border communities during the NAFTA era. First, the border areas of both countries are experiencing rapid population growth at a faster rate than in each nation as a whole and it is clear that there is a shift of population to the border region. Second, economic activity is accelerating on both sides of the border at higher rates than in the respective national economies. However, in U.S. border communities the most jobs are being created in the service sector. In contrast, it is mainly the maquiladora assembly-manufacturing sector that is driving job and income growth on the Mexican side. Third, Mexican border communities experienced a surge in economic activity not due solely to NAFTA that has produced average incomes exceeding those in the rest of Mexico. In contrast, the relatively rapid growth of employment in U.S. border communities has failed to boost prosperity at a rate commensurate with the rest of the United States.

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Fourth, in the U.S. border region, economic and population growth are taking place as growth of per capita income lags behind that of the United States as a whole.²⁷ Thus, the gap between the average income of U.S. border residents and the average income of the general U.S. population is widening. Additionally, despite significant growth in the number of jobs in U.S. border communities, unemployment remains high and wages remain low compared to the rest of the United States.²⁸ In contrast, in the Mexican border region, economic growth is taking place while growth of per capita income outstrips that of Mexico as a whole. Also, in contrast to the U.S. border, the Mexican border region has experienced lower unemployment and higher wages compared to the rest of Mexico. Of course, wages are still significantly lower than those paid on the U.S. side of the border. If Mexican border per capita income continues to rise at a more rapid rate than the rate on the U.S. side, the two wage levels would eventually converge. More research is needed to determine the exact behavior of wages in both the U.S. and Mexican border regions.

7. Need for and access to tools of economic analysis. Findings regarding the perceived need for and access to tools of analysis in both U.S. and Mexican border communities are summarized in Table 18.

The following observations based on Table 18 are relevant to the hypothesis:

- 1 In general, there is a much greater perceived need for analytical tools in the U.S. border region than in the Mexican border region, as determined by adding the responses of very important and somewhat important and by the percentage of respondents answering this section (65% in Mexico and 95% in the United States). On the U.S. side, the most important analytical tools are demographic modeling systems and systems for forecasting infrastructure needs, while the least important are systems for monitoring quality of life and the environment.
- 1 On the Mexican side, the most important analytical tools indicated by survey participants are systems for

monitoring the economy and for forecasting infrastructure needs, while the least important are systems for monitoring the environment.

- 1 The differences in terms of strength of demand and utilization rates are much higher in the United States than in Mexico. However, it is noteworthy that systems for monitoring the environment were perceived as being least needed on both sides.
- 1 Analysis of the data also revealed that larger communities on both sides of the border have much greater access to these analytical tools and that U.S. communities have much greater access than Mexican communities.

IMPLICATIONS OF THE STUDY FOR PUBLIC POLICY AND FURTHER RESEARCH

In introducing this final section, it is important to observe once again that the U.S. Mexican border region is not a homogeneous region. Variations with respect to demographic and economic size and structure as well as geographic characteristics are very large and undoubtedly contribute to the differences in economic performance that this study has identified. Of course, all of these communities are conditioned by one important and unique feature: their proximity to the international boundary brings economic, social, administrative, and ecological linkages with their cross-border neighbors. For many communities, such proximity also implies a role as an international entrepôt, a corridor for the transshipment of goods and services. It is this feature that differentiates them from other communities within their respective countries and creates a cross-border interdependence that transcends national jurisdictions. Thus, when public policy makers look at the issues facing their own communities, it is essential that they view them within an international and cross-border context.

It is also important for policy makers to view the border situation in a dynamic context. For over fifty years, population growth in the border region's urban areas has been high by

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national standards. Projections of border region population to the year 2020 reflect these historically high growth rates and exhibit considerable variation (Peach and Williams 2000). These projections imply a combined population of the 25 U.S. border counties and 38 border municipios ranging from 15.1 million to 24 million by the year 2020. The first figure assumes no new migration into the region and the last assumes that migration will continue at 1995 levels. Thus, the likely total border population in 2020 will be well over 20 million. In 1995, the base year data for these projections, the border region population was approximately 10.6 million persons (Peach and Williams 2000). Given the probability of high demographic growth, the problems of today will be magnified in 10 to 20 years in the absence of informed, collaborative, cross-border public policy.

This study has revealed and confirmed the existence of a number of issues that need to be addressed if U.S. Mexican border communities are to achieve their economic and quality-of-life potential. Perhaps the most significant implications of the study can be derived from the concluding paragraph under the sixth hypothesis, Impact on poverty and prosperity in the border region.

In the U.S. border region, economic and population growth is taking place as growth of per capita income lags behind that of the United States as a whole. Thus, with the exception of San Diego County, the gap between the average incomes of U.S. border residents and the average income of the general U.S. population is widening. Additionally, despite significant growth in the number of jobs in U.S. border communities, unemployment remains high and wages remain low compared to the rest of the United States. In contrast, in the Mexican border region economic growth is taking place as growth of per capita income outstrips that of Mexico as a whole. Also, in contrast to the U.S. border, the Mexican border region has experienced lower unemployment and higher wages compared to the rest of Mexico.

Migration, Prosperity, and Poverty Issues

This conclusion implies both good news and bad news regarding Mexican immigration into the border regions of the United States. The good news is that as this convergence of wages continues, the supply push motivating Mexican migration will likely diminish. That is, even though the convergence of wages is downward in relation to U.S. wages, the potential Mexican immigrant apparently still sees the wage differential as significant enough to move across the border. But since there is convergence, at some point the difference will narrow to the point that it is no longer a sufficient incentive and the migrant flow will normalize to levels similar to those from countries with compensation levels comparable to the United States. The bad news is that the current conditions imply that it will take decades, if not generations, to dissipate the supply pressure. More research is needed, but it certainly appears that in the period studied here the supply pressure has not abated. More work is needed to integrate the empirical and theoretical research on immigration being done at the national level with the analysis of specific demographic and economic structures and performance of the U.S. border region as represented by this study.

Another important issue related to immigration is the alleged need of U.S. agricultural firms to import workers on a temporary basis. U.S. employers are anxious to hire Mexican immigrants and immigrants from other lower-wage countries. For example, recent research on the economy of the Yuma, Arizona, area documented an intense lobbying effort by local agribusiness leaders to pass a guest worker bill in the U.S. Congress that would facilitate a much larger flow of agricultural workers from Mexico (Schmaedick 2001). This effort is not confined solely to Yuma. In fact, Yuma leaders joined the Western Growers Association in this effort in Washington, D.C. The association represents agricultural interests in all the states along the Mexican border. Recognition of the convergence of wages should be part of this debate. Since it is a vital factor in such a discussion, much more research should

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be undertaken to determine the magnitude, speed, and forces driving it.

An even larger issue is the question of the growing gap between the average income of U.S. border residents and the average income of the general U.S. population. This is a palpably negative phenomenon observable over the NAFTA era. While the alleged benefits to the nation as a whole are widely touted, the implications of the growing wage gap call out for policies to address it. The implications are very broad because in spite of significant growth in the number of jobs in U.S. border communities, unemployment remains high. As the study indicates, an analogous situation is occurring in Mexico, where the north benefits while the rest of Mexico lags behind. Both countries are faced with the challenging task of seeking policies to mobilize benefits to those who are not currently participating in the economic benefits of NAFTA, or even worse, suffering in deteriorating conditions because of economic liberalization.

While there is a strong temptation to try to analyse why these changes occurred, it is important to remember that this study was not designed to identify or quantify the effects of NAFTA or other factors on the border economy. As pointed out in the introduction, the study was designed to determine what kinds of changes occurred during the NAFTA era. Defining causality for such changes was simply beyond the scope of the present project. Recent studies on the Texas border economy, which do venture into such territory, indicate that there are many factors influencing employment growth and income levels there. These include population growth, migration, and education, as well as infrastructure policies and growth of the Mexican maquiladora industry.²⁹ It is the hope of NOBE/REF researchers that unanswered questions raised by this study can be addressed in a systematic way by future efforts.

Maquiladora Issues

There are still many important issues surrounding the role of the maquiladoras in national and regional development, even after more than 35 years of operation. Many of these issues

are raised by this study and deserve further research and attention in the policy-making arena. To what extent has the development of the maquiladora sector been responsible for the phenomenal economic growth of the Mexican border region? Proponents tend to say it has been the single most important driving force, if not the only driving force, of the border economy and that the maquiladora sector has been a major force in stimulating the Mexican economy during the 1990s. To support this position, they point to evidence that wages paid in the maquiladora sector have grown at a faster rate than the rest of Mexican industry and the maquiladora industry has been a powerful force in Mexico's regional and technological development. Opponents generally criticize the maquiladora industry by saying that it is an enclave sector with few linkages to the national or regional economy of Mexico, does not contribute to national or regional development, and deliberately suppresses wages. Given these two opposing viewpoints, it is obvious that additional research should explore these and the following issues:

- 1 What impact have the maquiladoras made on real wage levels in Mexico as a whole and specifically in the border region? What effect has the demand for labor created by the maquiladoras had on real incomes? Has the wage effect, whatever it has been, impacted only the communities immediately affected by the presence of the maquiladoras or has there been a general upward or downward pressure on wages throughout the country?
- 1 What has the maquiladora sector's net impact been on the environment and environmental policy and enforcement in Mexico? Has the liberalization of the Mexican economy and its integration into the global economy accelerated the adoption and enforcement of stricter environmental laws and regulations that cite maquiladoras as models in environmental compliance? Or, have the maquiladoras used their significant economic clout to force compromises and keep policies lax or even erode them? Everyone has an opinion, but what are the facts? This is an area where much needed

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research would provide valuable input to the policy-making process.

- 1 What have maquiladoras contributed to the evolution of Mexican industry? Has the touted phenomenon of technology transfer actually occurred and, if so, how has it benefited the development of the border region? Have benefits been isolated in the export sector with no spin-off benefits to domestic industry? Has the workforce experienced an increase in essential competencies and capabilities? Again, everyone has an opinion and there has been some good work done in this area, but there is still room for more evidence to resolve the debate.

In general, there is a need to structure the evaluation of the maquiladora sector in terms of a broader cost-benefit context that would seek to identify the net benefits or costs of this sector to the larger economy of the border communities in order to determine how this sector can more positively contribute to both the quality of life and the economic development of the region. The maquiladora sector has, after all, become the de facto focal point of the border economy and, especially since 1994, has been recognized as the major driving force of the national economy. For the border communities, it is very important to examine the linkages, both positive and negative, between the maquiladoras and the domestic nonexport sector of the economy. Such an analysis should examine whether the externalities that have benefited the maquiladora sector may have impeded or even damaged the performance of the domestic-oriented economy of the border communities. Or, if positive externalities generated by the industry such as the creation of human capital for the country through the ongoing training of its workforce benefited the larger Mexican economy.

Issues Regarding Cross-Border Transactions

The conclusions reached in this study regarding retail sales (hypothesis 5) suggest that Mexicans are buying less in the United States and more in Mexico as the impact of liberalization and NAFTA takes hold in communities along the border.

