ECONOMIC PROFILE OF THE UNITED STATES AND MÉXICO, INCLUDING AN ECONOMIC BASE STUDY OF THE BORDER AREA

VOLUME III IN THE UNITED STATES-MÉXICO SERIES OF BACKGROUND REPORTS

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Tom R. Rex, MBA
Associate Director, Center for Competitiveness and Prosperity Research

L. William Seidman Research Institute
W. P. Carey School of Business
Arizona State University
Box 874011
Tempe, Arizona 85287-4011

(480) 965-5362
FAX: (480) 965-5458
EMAIL: Tom.Rex@asu.edu
www.wpcarey.asu.edu/seid

ASU W. P. CAREY SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

INTRODUCTION

As part of Arizona State University's United States-México Initiative, the L. William Seidman Research Institute, in conjunction with ASU's McCain Institute for International Leadership Policy Analysis, has undertaken a project to analyze potential bi-national, national and regional policies in order to facilitate decision making. A web-based decision-making tool — the United States–México Policy Analysis Tool (USMexPAT) — is under development to quantify the impacts of potential policies. This tool also will be designed to operate at Arizona State University's Decision Theaters in Tempe, Arizona and Washington, D.C. For more information on this project, see the website USMexPAT.com.

A five-volume series of reports provides background information on the demography and economy of the United States and México, with a focus on the border area — the portion of each country near their international border. A summary of the five volumes also is available.

Background Reports

While numbered sequentially, the reports need not be read in order. However, most users will want to refer to the first part of Volume I in order to understand the geography of the border area. In order to fully understand Volume V, Volumes II through IV may need to be consulted.

A short description of each of the five volumes follows:

Volume I: The Geography and History of the United States and México, With a Focus on the Border Area
This introductory report presents two definitions of the U.S.-México border area — border states and border region — and also identifies urban areas along the international border. A brief history of the two nations and the border area is included.

Volume II: Demographic and Socioeconomic Profile of the United States and México, With a Focus on the Border Area
Most of this report presents the demographic and socioeconomic data collected from the 2010 decennial census of each country and from the American Community Survey. The historical and projected population of the two nations and of the geographies of the border area also are examined in this report.

Volume III: Economic Profile of the United States and México, Including an Economic Base Study of the Border Area
Economic data from a variety of sources other than the 2010 decennial census of each country and the American Community Survey are presented in this report. Economic base studies for the border states and the border region counties and municipios are reviewed in this report.

Volume IV: Trade Between the United States and México, With a Focus on the Border Area
U.S. international trade, trade between the United States and México, and the traffic crossing the international border between the two countries are examined in this report. Information is presented for various geographies: national, state, metropolitan area, customs district, and port.

Volume V: A Description of Each State, County and Municipio in the United States-México Border Area
Information from each of the prior volumes is incorporated in this report, which is organized by geographic area rather than by topic as in the other volumes. A summary of the geography, history, population, trade, and economy of each state, county and municipio in the border area is presented.

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ECONOMY OF THE BORDER AREA

Much of the economic data produced by the federal governments of México and the United States use the North American Industry Classification System (NAICS), in which 20 sectors are progressively subdivided into subsectors, industry groups, and industries. However, the amount of information available below the sectoral level varies considerably by economic series, with limited industry group and industry data produced. Two factors limit the amount of detail produced: quality of the information collected by the federal governments and disclosure restrictions designed to prevent data for a specific company from being made public.

The analysis in this section largely uses two datasets for each country: gross domestic product (GDP) and employment. Other economic data discussed in this paper include measures of inflation and the unemployment rate and measures of the economic cycle other than GDP and employment. All economies are cyclical, with periods of growth (expansions) interrupted by periods of decline (recessions). One means of tracking the economic cycle is to use coincident indexes, which consist of several economic measures.

Data Sources

United States

The federal disclosure restrictions significantly limit the availability of economic data for subnational areas. In less populous areas, much of the subsectoral data and even some sectoral estimates are not disclosed.

Gross domestic product is produced by the U.S. Department of Commerce's Bureau of Economic Analysis (BEA) for the nation, states, and metropolitan areas. Annual estimates begin in 1929 for the nation, in 1963 for states, and in 2001 for metro areas.[12] GDP estimates are produced for each NAICS sector and subsectoral estimates are generated in 13 of the 20 sectors. The sectoral and subsectoral estimates by state are available beginning in 1997. The latest total and sectoral data for states and metropolitan areas are for 2012 and the most recent subsectoral data are for 2011.

In the metro areas of the border region, GDP figures are not disclosed for some of the sectors. In most cases, the undisclosed values are rather small and reasonable estimates of the missing data can be made from figures disclosed for other years. However, in El Paso — the third-largest economy in the border region — a substantial proportion of the sectoral data are not disclosed, with the data missing in all years in some sectors. Thus, GDP estimates by sector for the metro areas as a whole, which are used as a proxy for the border region, should be interpreted as rough estimates.

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[1] A discontinuity in the GDP by state time series is present in 1997, with two sets of estimates produced that year, one based on the old Standard Industrial Classification (SIC) and the other using the new NAICS. Inflation-adjusted (real) estimates of GDP by state are available only back to 1987. The break in the real time series in 1997 not only reflects the change to the NAICS, but also a change in the base period. The 1987 through 1997 estimates are expressed in chained 1997 dollars while estimates for 1997 through 2012 are expressed in chained 2005 dollars.

[2] While national estimates are produced quarterly, with data available through 2013, these figures are not available by sector.

Several measures of employment are available. Most have significant limitations, measuring only wage and salary employment and excluding certain economic activities. The employment series most used in this paper is total employment reported by the BEA, which includes proprietors as well as wage and salary workers for all economic activities. When the total employment data were first collected for this project in mid-2013, annual estimates of total employment for the nation, states, counties, metropolitan areas, and micropolitan areas were available for 1969 through 2011. For the nation and states, employment estimates by NAICS sector and subsector were available for 1990 through 2011, though the list of subsectors for which employment is available is not exactly the same as for GDP. For substate areas, only sectoral estimates for these years were available from the BEA. Since mid-2013, the national and state data have been updated through 2012, but substate employment estimates no longer are available due to budget reductions related to the federal sequestration.

The U.S. Department of Commerce's Census Bureau is another source of employment data, particularly through its economic censuses and its annual Business Patterns program. The economic censuses are conducted every five years. The latest data available are for 2007 — too dated to be of much value, especially since this predated the long and deep 2008-09 recession.

The Business Patterns program produces annual data on the number of establishments, employment, and payroll for the full NAICS detail (sectors, subsectors, industry groups, and industries) for the nation, states, metro areas, and counties. The employment and payroll data are subject to the federal disclosure laws such that much of the industrial detail is withheld, even at the state level. However, an employment range is provided for each withheld employment figure, making it feasible to impute a reasonably accurate value. The Business Patterns data, which are available through 2011, are used in the calculation of job quality and in the economic base study, discussed later in this report, and the 2009 data are compared to the 2009 economic census of México.

While most of the employment series are produced by sector, the U.S. Bureau of Labor's Bureau of Labor Statistics (BLS) produces a series by occupation. Though produced annually, the occupational employment estimates are not intended to be used as a time series, so the focus in this report is on the latest data for May 2012. Occupational data are produced by the BLS for the nation, states, and metro areas. The data are derived from a survey of employers and are subject to sampling error. Based on the Standard Occupational Classification, the data are expressed at two levels: 22 occupational groups and 820 occupations. However, much of the subnational data by occupation are withheld due to the disclosure laws. Among the 820 occupations, the number listed for the four border states in 2012 ranged from 654 in New Mexico to 809 in California; among nine metro areas in the border region,[3] the number ranged from 196 in El Centro to 681 in San Diego. These figures understate the amount of missing data, since either employment or wages may be withheld even if an occupation is listed.

Two measures of national inflation are examined: the GDP implicit price deflator produced by the BEA and the consumer price index (CPI) produced by the BLS. Both have been available for

[3] The Sierra Vista-Douglas area was not declared a metro area until 2013. It was not included in the occupational estimates for 2012.

decades. A monthly coincident index for the United States and each individual state is produced by the Federal Reserve Bank of Philadelphia; data begin in 1979 and are available through 2013.

México

Gross domestic product (producto interno bruto: PIB) for México is produced quarterly by the Instituto Nacional de Estadística y Geografía (INEGI). The national time series in nominal and real pesos runs from 1993 through 2013; annual averages have been calculated for 1993 through 2013. Nationally, PIB consists of two components: taxes on products (impuestos a los productos) and gross value added at basic prices (valor agregado bruto a precios básicos). The tax component, which accounted for 3.3 percent of the nation's PIB in 2013, is not subdivided by sector and is not available by state. Thus the total by state, which is available annually from 2003 through 2012, consists only of the gross value added component. No substate estimates are available.

Since México also uses the NAICS, its sectoral GDP data are comparable to those for the United States, other than the definitional difference between value added in México and GDP in the United States. However, the wholesale and retail trade sectors are combined in the PIB data, resulting in 19 sectors. As in the United States, only selected subsectors are available for value added in México.

Labor force data (economically active, employed, and unemployed populations) for México are available from a national survey (Encuesta Nacional de Ocupación y Empleo: ENOE) conducted quarterly by INEGI. The quarterly data have been converted to annual averages. No information from the ENOE is produced by sector or by occupational group. The ENOE began in 2005, replacing other surveys; data are available through 2013. Data prior to 2005 generally have not been linked to the ENOE results. The time series from 2005 through 2010 utilizes population projections made by CONAPO in 2005. Once the 2010 census results became available, CONAPO revised the projections that are used by the ENOE. The 2005 through 2009 ENOE data are not consistent with the data series beginning in 2010, but the 2010 data are available on an unrevised and revised basis to provide a link.

As in the United States, an economic census is conducted every five years in México; the latest data are for 2009. The economic census has various limitations. As in the United States, some economic activities, such as government and much of agriculture, are not included. The census is limited to companies, but a substantial share of the economic activity in México is conducted by self-employed workers. Total employment counted in the 2009 economic census was not quite half of the workers counted in the 2010 census.

Though four years old and with limitations, the economic census provides the only economic data available by municipio and is the only source of sectoral and subsectoral employment data by state. For this report, sectoral data on employment and remuneration were collected by state and municipio and subsectoral data were assembled by state.

Employment data also are available from Mexico's social security agency (Instituto Mexicano del Seguro Social: IMSS), but these data only include workers participating in the social security system. Nationally, only about one-third of the economically active population is part of the

social security system. (In contrast, the percentage of workers in the United States covered by social security is much higher.)

A time series of employment by occupation is not available. INEGI produces a coincident index of economic activity for México, but not for the individual states. The series begins in 1980. Two measures of inflation are available: the GDP implicit price deflator (índice de precios implícitos) and the consumer price index (índice nacional de precios al consumidor: INPC).

Economic Cycles

INEGI dates the economic cycles in México using its coincident index. Economic cycles in the United States are officially dated by the National Bureau of Economic Research (NBER) based on a number of indicators. The timing of the economic cycles based on the coincident index produced by the Federal Reserve Bank of Philadelphia is quite close to the official dates set by the NBER. The NBER does not provide any information on the magnitude of the economic cycles. Gains and losses can be calculated based on the GDP or other measures.

As would be expected of neighboring countries that trade substantial amounts of goods and services, there is some correspondence in the timing of the economic cycles in México and the United States. For example, each country experienced a recession of similar length from late 1981 through 1982 and in 2008-09. However, considerable differences in the cyclical timing occurred in between these two contractions (see Table 1).

The United States experienced two very long economic expansions, from December 1982 through August 1990 and from May 1991 through March 2001. Each of these expansionary periods was interrupted by a recession in México. Moreover, the timing of the U.S. recession in 1990-91 was more than a year earlier than a recession in México. The 1994-95 recession in México, though the shortest of the six recessions since 1980, was the deepest. It was marked by a peso devaluation.

TABLE 1
NATIONAL ECONOMIC CYCLES IN THE UNITED STATES AND MÉXICO

	United States		México	
	Beginning and End Dates	Length in Months	Beginning and End Dates	Length in Months
Contraction	8/81 – 11/82	16	12/81 – 4/83	17
Expansion			5/83 – 4/85	24
Contraction			5/85 – 1/87	21
Expansion	12/82 – 7/90	92	2/87 – 4/92	63
Contraction	8/90 – 3/91	8	5/92 – 10/93	18
Expansion			11/93 – 8/94	10
Contraction			9/94 – 8/95	12
Expansion	4/91 – 3/01	120	9/95 – 8/00	60
Contraction	4/01 – 11/01	8	9/00 – 9/03	37
Expansion	12/01 – 12/07	73	10/03 – 4/08	55
Contraction	1/08 – 6/09	18	5/08 – 6/09	14

Source: Instituto Nacional de Estadística y Geografía (México) and National Bureau of Economic Research (United States).

The most recent recession, from 2008 to 2009, was by far the deepest in the United States since the 1930s. It also was longer than the typical U.S. recession. In contrast, the decline in México was of somewhat shorter duration than the average of the last six recessions and was of average magnitude based on the coincident index (though the GDP registered a much deeper drop).

In general, the Mexican economy is more volatile than that of the United States, consisting of shorter cycles and deeper recessions. During expansions, growth generally is faster than in the United States.

Based on the coincident index produced by the Federal Reserve Bank of Philadelphia, most U.S. states generally follow the national economic cycle, with the timing of the peaks and troughs usually similar to those nationally. However, significant differences sometimes occur in particular states, including complete avoidance of a recession or experiencing a downturn not suffered in most other states. Among the four border states, the economies in Arizona and California generally correspond closely to the national cyclical timing, though California's recession in the early 1990s, and Arizona's in the late 2000s, were longer than the national average. These states, especially Arizona, grow faster during expansions than the U.S. average, but drop as much or more than the national average during recessions.

In contrast, New Mexico and Texas have avoided some of the recessions since 1980 but experienced a recession centered in 1986 that few other states experienced. The importance of oil in Texas and New Mexico is one reason for the differences in the economic cycles of these states. Based on the coincident indexes, the economic cycles in the four border states are compared to the national cycle in Table 2.

From the trough in the U.S. coincident index in October 2009 through December 2013, the index rose 11.4 percent. Over the same period, the gain varied widely across the border states: 16.4 percent in Texas, 12.1 percent in California, 6.4 percent in Arizona, and 0.5 percent in New Mexico. The relative ranking of the states was the same as measured by the change between December 2012 and December 2013.

In the United States, the 12-month (year-over-year) increase in the coincident index became positive in May 2010, accelerated to 3 percent in March 2012, and has held near that rate since; the increase was 3.1 percent in December 2013. In México, the 12-month gain became positive in February 2010. Growth quickly accelerated to about 6 percent in late 2010 and early 2011, but has declined since then; the increase between December 2012 and December 2013 was only 0.5 percent.

Inflation

Data are available for both countries back to 1969 for the CPI and back to 1993 for the GDP deflator. In the United States, the CPI typically registers slightly-to-somewhat higher inflation than the GDP deflator, but the average difference over the last decade has been slight. In México, the GDP deflator's inflation rate ranges from higher to lower than that of the CPI, with sizable differences in some years.

TABLE 2
ECONOMIC CYCLES WITHIN THE UNITED STATES, DATED BY MONTHS

	United States			RELATIVE TO UNITED STATES											
				Arizona			California			New Mexico			Texas		
	Date	Length	% Chg	Date	Length	% Chg	Date	Length	% Chg	Date	Length	% Chg	Dates	Length	% Chg
Peak	2/80			0			none			-2			none		
Trough	7/80	5	-0.4	0	0	0.1	none			-1	1	-0.8	none		
Peak	8/81	13	2.3	0	0	1.5	0			0	1	1.6	6		
Trough	11/82	15	-1.9	-2	-2	-1.0	-1	-1	0.4	1	1	0.2	4	-2	-2.1
Peak	none			none			none			2/86			11/85		
Trough	none			none			none			9/86			1/87		
Peak	8/90	93	33.3	3	5	22.1	1	2	11.5	none			none		
Trough	4/91	8	-0.6	3	0	0.3	17	16	-0.7	none			none		
Peak	3/01	119	35.1	0	-3	33.9	0	-17	2.4	none			0		
Trough	1/02	10	-0.6	-1	-1	-0.4	-2	-2	-0.3	none			16	16	-2.0
Peak	3/08	74	12.8	-8	-7	9.4	-2	0	0.7	-1			4	-12	8.3
Trough	10/09	19	-5.1	11	19	-9.8	1	3	-2.3	22	23	-3.5	1	-3	-0.3

United States:

Date: month/year

Length: of expansion or contraction, in months

% Chg: percent change in index from peak to trough or from trough to peak

States:

Date: number of months different from nation; a date preceding the nation is shown as a negative; “none” indicates that this cycle did not occur

Length: of expansion or contraction, in months, less the national average

% Chg: percent change in index from peak to trough or from trough to peak, less the national average

Source: Federal Reserve Bank of Philadelphia, coincident indexes.

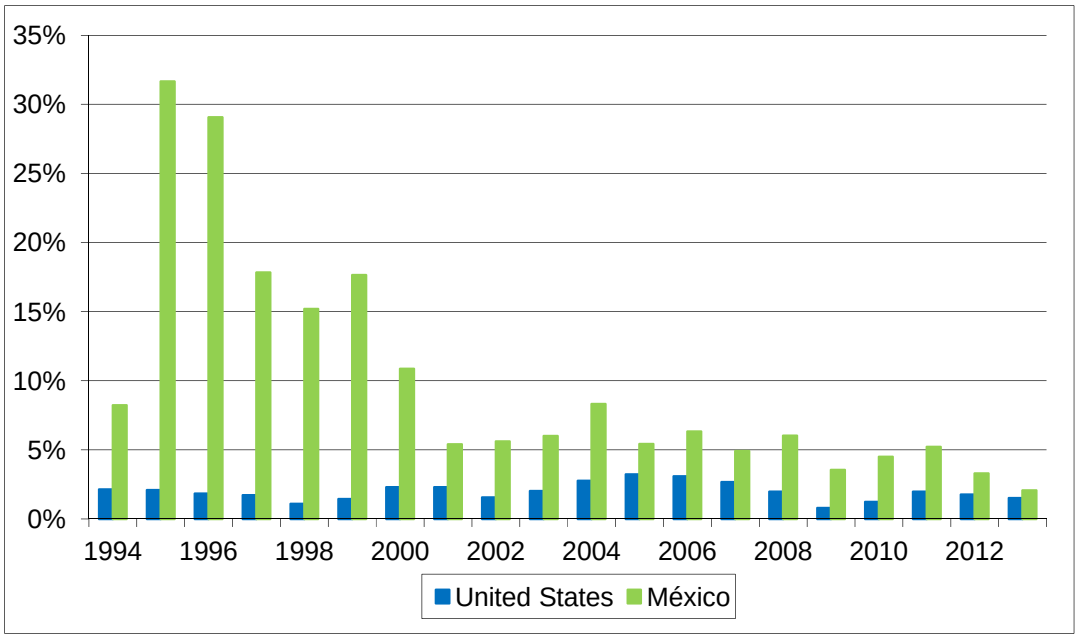
México experienced very high inflation from the 1970s through the 1990s. In all but two years from 1973 through 1999, the CPI inflation rate exceeded 10 percent. It was more than 50 percent in each year from 1982 through 1988 and exceeded 30 percent in both 1995 and 1996. In contrast, the CPI inflation rate in the United States exceeded 10 percent in only four years during this period. Inflation subsequently slowed in México; since 2002, the CPI inflation rate has been less than 5.5 percent in each year, though the rate from the GDP deflator has been higher than that in some of these years (see Chart 1).

Based on the CPI, the annual inflation rate in México has been higher than in the United States in each year since 1970, with significant differences in each year from 1973 through 2000. According to the GDP deflator, inflation in México has been higher than in the United States in each year since the start of the Mexican series. In 2013, the inflation rate from the CPI was 3.8 percent in México and 1.5 percent in the United States. The figures from the GDP deflator were 1.5 percent in the United States and 2.0 percent in México.

Gross Domestic Product

Differences in aggregate GDP growth across geographic areas do not necessarily imply differing economic performance in terms of productivity. Instead, differing rates of population and employment growth generally account for most of the geographic differences in GDP growth. To control for the overall growth rate, GDP per capita and GDP per employee are examined in later subsections.

CHART 1
INFLATION RATES BASED ON THE GROSS DOMESTIC PRODUCT IMPLICIT PRICE DEFLATOR IN THE UNITED STATES AND MÉXICO, 1994 THROUGH 2013



Sources: Instituto Nacional de Estadística y Geografía (México) and U.S. Department of Commerce, Bureau of Economic Analysis (United States).

United States
The nation's GDP totaled $16.8 trillion in 2013. The inflation-adjusted percent change in 2013 was 1.9 percent, similar to the increases of 1.8-to-2.8 percent registered in the three prior years. Based on annual data, the average annual increase in real GDP was between 2.4 percent and 3.6 percent in each of the five economic cycles between 1969 and 2007.[4] In the partial cycle from 2007 through 2013, the annual average was only 1.0 percent.

Border States. In 2012, the combined GDP of the four border states was $3.75 trillion, accounting for 24.1 percent of the national total. In 1963, the border states share was only 17.2 percent. Between 1963 and 2012, the share rose significantly in Texas, from 4.82-to-8.98 percent. In the other border states, the share increased from 11.17-to-12.87 percent in California, 0.74-to-1.71 percent in Arizona, and only from 0.50-to-0.52 percent in New Mexico. Between 2007 — the peak of the last economic cycle — and 2012, however, the share declined in Arizona, California, and New Mexico. A strong gain in the share in Texas offset these losses.

Over the entire 1987-to-2012 period for which inflation-adjusted GDP is available by state, the annual average percent change was 2.5 percent nationally, 3.1 percent in the border states, and 2.3 percent in the rest of the country. Among the border states, Arizona experienced the fastest average growth over these 25 years (4.1 percent) while California had the slowest (2.6 percent). However, relative growth rates by state have varied over time; between 2007 and 2012, Texas experienced growth well above the national average while real GDP decreased in Arizona and California.

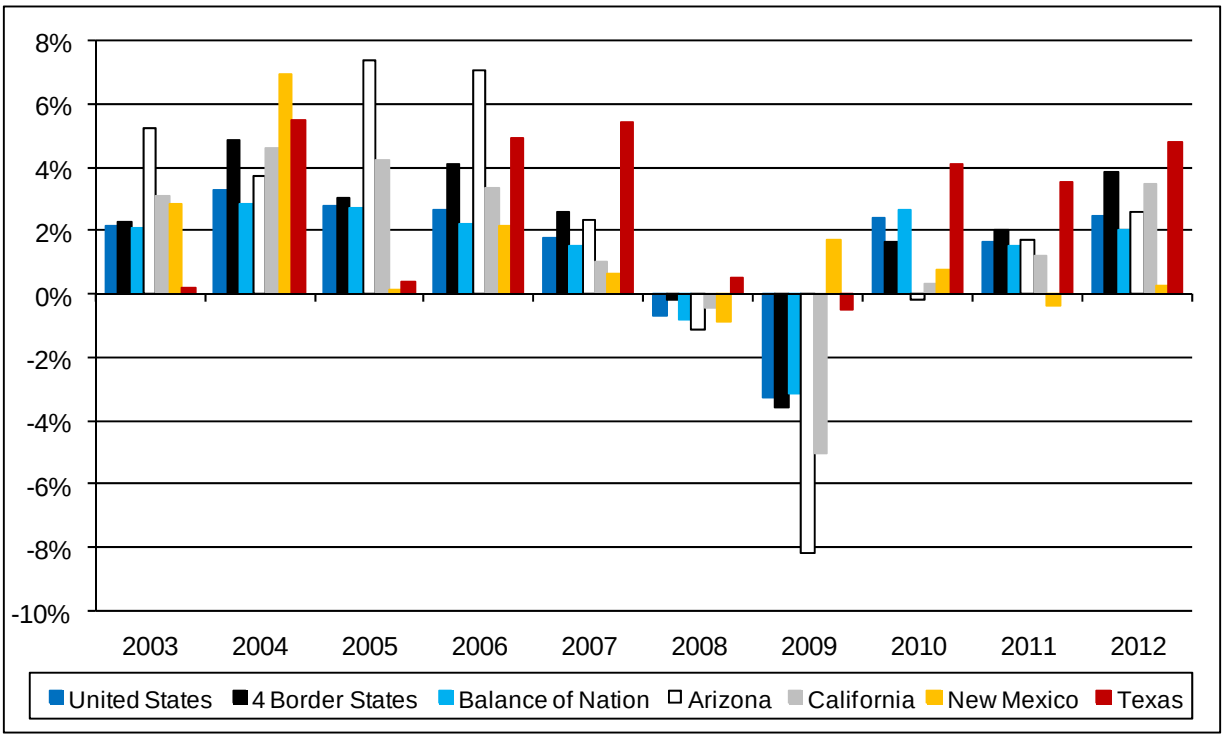
In the 1989-to-2000 and 2000-to-2007 economic cycles, the border states experienced faster growth in real GDP than the balance of the nation. However, the economy in the border states is more cyclical than in the balance of the country, growing faster during economic expansions, but frequently performing more poorly during recessions and in the recovery period following a recession. Arizona and California experienced a deeper recession in 2008 and 2009 than the national average and experienced almost no recovery in 2010. The recession was mild in New Mexico and Texas, but New Mexico's GDP has hardly grown since then. In contrast, Texas experienced strong growth from 2010 through 2012. Annual gains over the last 10 years are shown in Chart 2.

Metro Areas. Since GDP is not measured for all counties, it is not possible to analyze GDP for the border region. However, since the 10 metropolitan areas in the border region account for 93 percent of the border region's employment and 92 percent of its population, the border metros taken together are a reasonable proxy for the border region. The combined GDP of the 10 border metros of $292 billion in 2012 was responsible for only 1.9 percent of the nation's GDP and 7.8 percent of the GDP of the border states.

The metro areas in the border region nearly equaled the average growth rate in the border states of 2.0 percent between 2001 (the earliest metro data) and 2012. The average real gain between 2001 and 2012 varied across the metro areas from 1.1 percent in Tucson to 3.6 percent in Las Cruces and McAllen. Slightly faster growth in the border area metros than in the border states

[4] Economic cycles based on GDP are dated from peak to peak in this analysis. Since GDP by state and metro area is only available annually, the economic cycle timing can only be an approximation.

CHART 2
ANNUAL PERCENT CHANGE IN INFLATION-ADJUSTED GROSS DOMESTIC PRODUCT WITHIN THE UNITED STATES, 2003 THROUGH 2012



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

during the expansion from 2001 through 2007 was followed by an inferior performance in the 2007-through-2012 period. Relative to the border states, gains in the border metros have varied from higher to lower by year, with generally inferior performance in the border metros annually since 2006.

México

The PIB of México in 2013 totaled 15.68 trillion pesos. The tax component was 0.52 trillion pesos, 3.3 percent of total PIB. The value added component was 15.16 trillion pesos. Inflation-adjusted PIB rose only 0.2 percent in 2013, following three years of gains of between 3.9-and-5.1 percent. The annual percentage changes in the value added component are nearly identical to those of PIB.

The latest state data in México are for 2012 and consist of the value added component of GDP. The combined value added of the six border states was 3.32 trillion pesos in 2012, accounting for 22 percent of the nation's value added of 15.08 trillion pesos.[5] The value added in Nuevo León was 1.08 trillion pesos, while the value added in each of the other five states was between 414-and-511 billion pesos.

[5] The national value has subsequently been revised, but to be consistent with the state data, the unrevised national figures are used in this analysis.

In each year between 2003 and 2012, the years for which value added by state have been produced, the share of the national value added, as measured in nominal terms, that was produced in the border states was between 21.8-and-22.6 percent. The share rose in Nuevo León and Sonora but fell in Baja California. In contrast to the steady nominal share, the border states' share of inflation-adjusted value added rose from 21.1 percent in 2003 to 22.4 percent in 2012. The inflation rate between 2003 and 2012 as measured by the implicit price deflator was 51.1 percent in the border states as a whole and 64.9 percent in the balance of the country.

The total percent change in inflation-adjusted value added between 2003 and 2012 was 27.6 percent nationally. The border states experienced faster growth in real value added than the balance of the nation (35.7 versus 25.4 percent). Among the border states, real growth in value added between 2003 and 2012 was fastest in Nuevo León (47.6 percent) and Sonora (43.2 percent) and slowest in Baja California (23.8 percent) and Tamaulipas (25.0 percent). The border states as a whole experienced a larger decrease in inflation-adjusted value added in 2009, during the last recession, than in the rest of the country, but registered faster growth in each of the other years since 2003. Since the 2009 recession, economic growth has been especially strong in Coahuila and weakest in Tamaulipas.

Comparison of United States and México

In order to compare financial and economic values, such as GDP, of two nations that are expressed in different currencies, either the exchange rate or purchasing power parity (PPP) is used to convert one currency to another. Typically, the exchange rate is used for financial flows, while PPP is preferred for measures of well-being, such as GDP per capita. In developed countries the PPP and the exchange rate often are similar, but in developing countries the conversion of currencies based on the exchange rate may result in very different values than if the PPP is used.

The PPP considers the difference in living costs between countries as well as the exchange rate. In practice, national average prices for 1,000 closely specified products are periodically gathered by country and form the basis for that portion of the PPP. Annual PPP values, however, must be estimated, with different organizations, such as the United Nations or the World Bank, reporting different values. In addition, different PPP time series are produced to be used for different purposes. The Organisation for Economic Co-operation and Development (OECD), for example, publishes a PPP to adjust GDP, a PPP for private consumption, and a PPP for "actual individual consumption."

When adjusting an annual time series such as GDP, the nominal estimate expressed in the local currency of one country is divided by the PPP for that year, with the resulting value expressed in the currency of the other country. Typically, values are expressed in U.S. dollars. When a time series of inflation-adjusted values are adjusted by the PPP, the annual percent change in the PPP-adjusted real values is the same as the percent change calculated from the local currency.

By nation, the GDP time series examined in this subsection covers the 1993-to-2013 period, the full series available for México. The end years of this period are not precisely identical points in terms of the economic cycle, but each represents an expansionary year. By state, the analysis is limited to the 2003-to-2012 period, the full time series available by Mexican state. These years

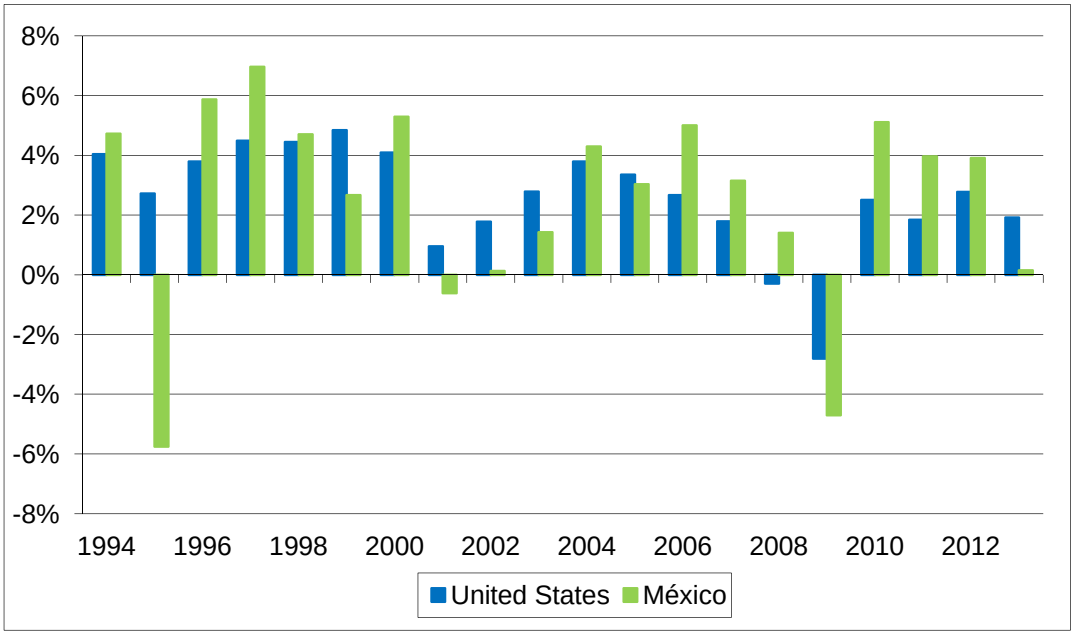
are reasonably comparable in terms of the economic cycle, two-to-three years after the official end of a recession in the United States. The conversion of currencies uses the OECD's PPP for GDP.

Nations. In 2013, the GDP was $16.8 trillion in the United States and 15.7 trillion pesos in México. Applying the annual average exchange rate of 12.772 Mexican pesos to the U.S. dollar in 2013, the value of Mexico's GDP was $1.23 trillion, just 7.3 percent of the U.S. total. However, using the purchasing price parity for GDP of 7.835 estimated by the OECD, the value of Mexico's GDP was $2.00 trillion, 11.9 percent of the U.S. total.

Between 1993 and 2013, inflation as measured by the implicit price deflator totaled 512 percent in México compared to 47 percent in the United States. This wide differential contributed to huge increases in the exchange rate (300 percent) and PPP (283 percent). While most of the very high inflation in México occurred in the 1990s, inflation still was considerably higher in México than in the United States during the 2003-to-2013 period (59 percent versus 23 percent). Thus, increases continued in the exchange rate (18 percent) and PPP (15 percent) between 2003 and 2013.

On an inflation-adjusted basis, GDP rose slightly less in México (63 percent) than in the United States (66 percent) during the 1993-to-2013 period. The gain in México during the 1993-to-2003 cycle was considerably less than in the United States, mostly due to a recession in México in 1995 (see Chart 3). The increase in México was higher than in the United States between 2003 and 2013. Other than 1995, the economic cycles have been similar in the two countries since

CHART 3
ANNUAL PERCENT CHANGE IN INFLATION-ADJUSTED GROSS DOMESTIC PRODUCT IN THE UNITED STATES AND MÉXICO, 1994 THROUGH 2013



Sources: Instituto Nacional de Estadística y Geografía (México) and U.S. Department of Commerce, Bureau of Economic Analysis (United States).

1993, but México's GDP has been more cyclical, usually rising more in expansionary periods and falling more in downturns than U.S. GDP.

Border States. In 2012, the PPP-adjusted total value added of the six Mexican border states was $425 billion, or 11.3 percent of the total U.S. border state GDP of $3,748 billion. The border states' share of the nation's GDP was similar at 22.0 percent in México and 23.1 percent in the United States. The $138.1 billion GDP in Nuevo León was greater than New Mexico's $80.6 billion, but the figure in each of the other Mexican border states (between $53-and-65 billion) was less than in each of the U.S. border states.

In the United States, the inflation rate between 2003 and 2012 was nearly identical in the border states to the rest of the country at 24 percent, but in México inflation in the border state of 51 percent was less than in the balance of the nation (65 percent). Among the border states, the U.S. inflation rate ranged from 21 percent in California to 28 percent in Texas and the Mexican rate varied from 41 percent in Baja California to 65 percent in Sonora.

The 2003-to-2012 gain in real GDP in the U.S. border states (19.7 percent) was higher than in the balance of the nation (11.9 percent). In México, the gain in value added in the border states of 35.7 percent was more than the 25.4 percent rise in the balance of the nation. The 32 percent increase in Texas was more than twice that in each of the other three U.S. border states. Nuevo León and Sonora experienced increases of more than 43 percent and the gains in Chihuahua and Coahuila were similar to the rate in Texas. Baja California and Tamaulipas had increases between 23-and-25 percent, higher than the 12-to-15 percent increases in Arizona, California, and New Mexico (see Chart 4).

The annual changes in real GDP/value added for the border states of each nation and for the balance of the two nations are shown in Chart 5. The economic cycle between 2003 and 2012 was similar in the two countries and quite similar between the border states and the balance of the nation in each country. However, the annual growth rates in the border states were larger than in the balance of the country in both the United States and México, except for 2009 in each country and in 2010 in the United States. Growth in México was higher than in the United States in both the border states and the balance of the country in each year except 2009, when México experienced a deeper recessionary decline, and in 2005 in the balance of the nation.

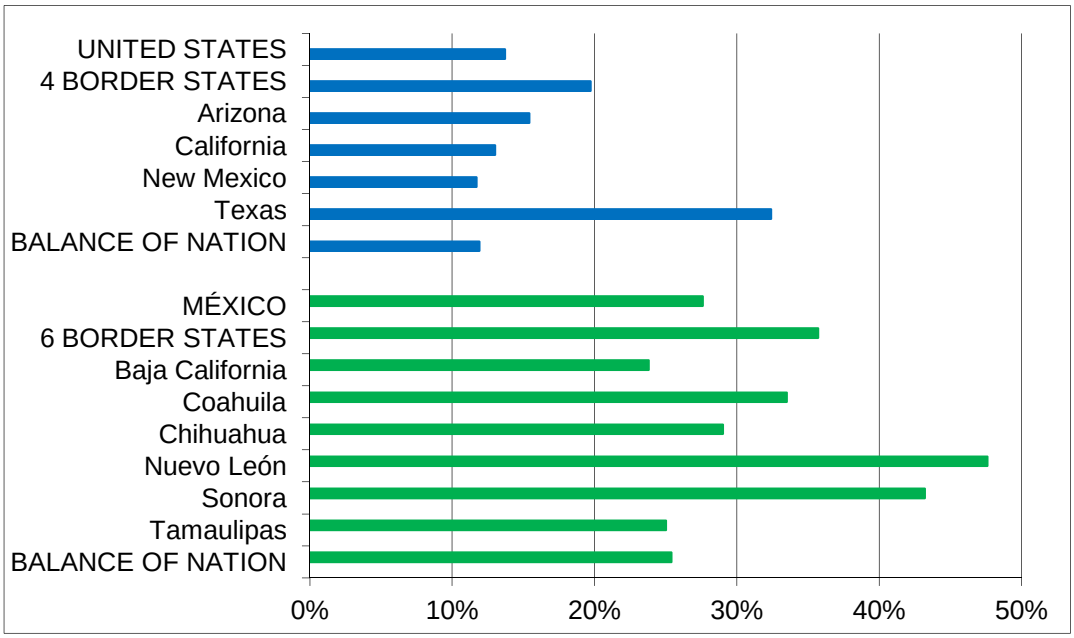
GDP by Sector and Subsector

The analysis of the composition of the economy in this subsection is focused on 2012. The only 2013 data available by sector are national data for México. In the U.S. GDP, all government employees, including school teachers, are classified in the government sector; the educational services sector consists only of private-sector enterprises.

United States

2012. Nationally, GDP varies widely by sector. In 2012, the real estate and rental sector was the largest based on nominal dollars, with its 12.4 percent share barely larger than government's 12.3 percent. Manufacturing was the other large sector, responsible for 12.0 percent of total GDP. In contrast, the agriculture; educational services; and arts, entertainment and recreation sectors contributed only about 1 percent each.

CHART 4
PERCENT CHANGE IN INFLATION-ADJUSTED GROSS DOMESTIC PRODUCT OR VALUE ADDED BETWEEN 2003 AND 2012 WITHIN THE UNITED STATES AND MÉXICO



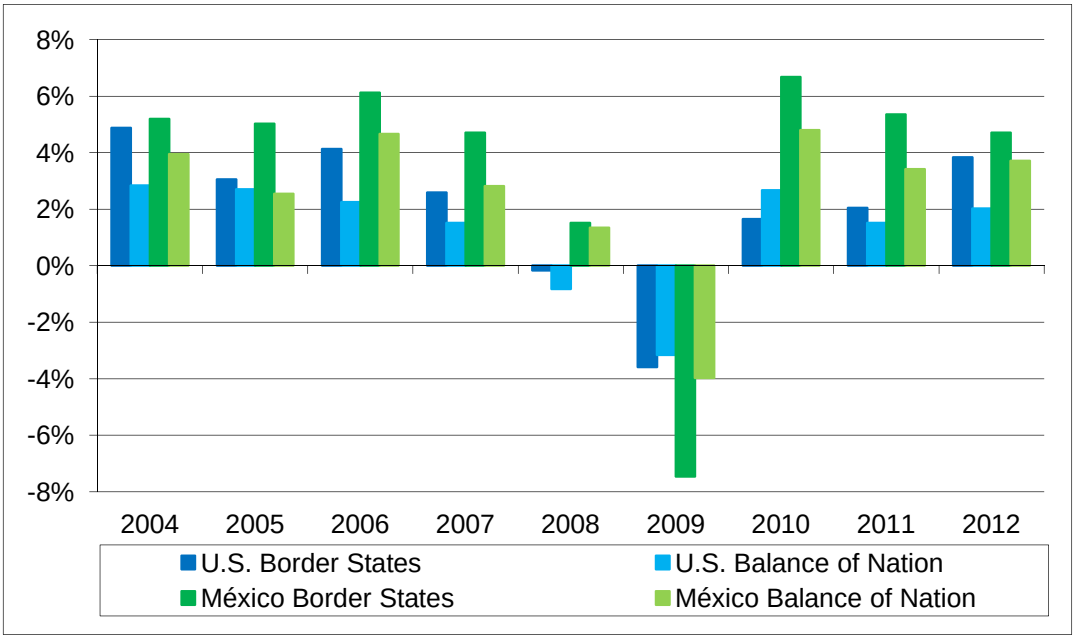
Note: The U.S. figures are for GDP while the Mexican data are for value added.

Sources: Instituto Nacional de Estadística y Geografía (México) and U.S. Department of Commerce, Bureau of Economic Analysis (United States).

As seen in Chart 6, the composition of the economy of the border states was somewhat different from that in the rest of the country at the sectoral level in 2012. The sectors in which the share in the border states is more than marginally higher than in the balance of the nation follow:

- Mining: substantially higher share, primarily in the oil and gas subsector in New Mexico and Texas. Though mining's share in the border states was above average, it was below average in California and in the border region's metro areas taken as a whole. The primary metro area exception was a very high share in Laredo.
- Information: higher share. Only California had a relatively high share, in each of the subsectors but especially in the motion picture and sound recording subsector. Shares were below average in Arizona and New Mexico. The excess activity in the border states was outside of the border region — each of the border region metros had a below-average share.
- Professional, scientific and technical services: somewhat higher share, primarily in California. The share in the border region metros as a whole was higher than average, but only San Diego had an above-average share.

CHART 5
ANNUAL PERCENT CHANGE IN INFLATION-ADJUSTED GROSS DOMESTIC PRODUCT OR VALUE ADDED WITHIN THE UNITED STATES AND MÉXICO, 2004 THROUGH 2012



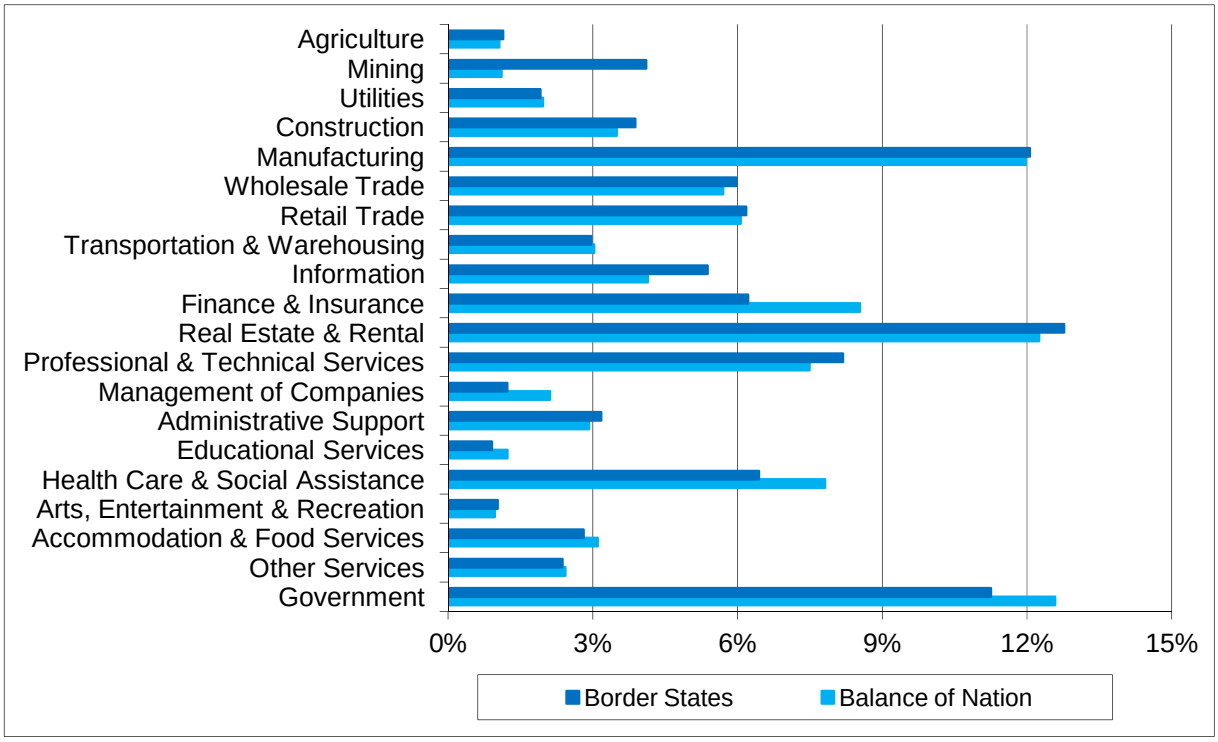
Note: The U.S. figures are for GDP while the Mexican data are for value added.

Sources: Instituto Nacional de Estadística y Geografía (México) and U.S. Department of Commerce, Bureau of Economic Analysis (United States).

The share in the border states was more than marginally lower than in the balance of the nation in some sectors:

- Finance and insurance: much lower share. The lesser activity in the border states occurred in each of the three major subsectors: credit intermediation, securities and investments, and insurance. Other than Arizona, each of the border states had a low finance and insurance share. The share in each of the border region metros was below average.
- Health care and social assistance: lower share. California and Texas had relatively low shares in this sector, but the share in Arizona was above average. The lesser activity primarily occurred in the hospitals and nursing care subsector. Among the border region metros, the share ranged from high in Tucson, Las Cruces, McAllen, and Brownsville to low in the California metros and Sierra Vista.
- Government: lower share. California and Texas had relatively low shares in government; the share in New Mexico was high. The border states as a whole had a low share in the federal civilian subsector. In each of the border region metros, however, government shares were very high, ranging from 18 percent in San Diego to 48 percent in Sierra Vista, compared to a national average of 12 percent.
- Management of companies: somewhat lower share. Each of the border states and border region metros had a below-average share, with the share very low in most of the metro areas.

CHART 6
GROSS DOMESTIC PRODUCT SECTORAL SHARES
WITHIN THE UNITED STATES, 2012



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

The high share of GDP contributed by government in the border region largely results from three activities: operation of the border crossings, border security in the form of the civilian Border Patrol, and national security in the form of military bases. Table 3 provides a list of the military bases located in the border region. Two-thirds of the 160,000 active-duty military personnel stationed at these bases in 2011 were in San Diego County; another 17 percent were based in El Paso County. A considerable number of civilian personnel also work at these military bases.

In the real estate and rental sector, which is the largest sector nationally and in the border states, the share in the border states was slightly above average. Shares were above average in California and Arizona, but below average in Texas. While the share in the border region metros as a whole was higher than average, only San Diego and El Paso had above-average shares.

In the manufacturing sector — the third-largest sector nationally and in the border states — the GDP share in the border states was about equal to the share in the balance of the country. The border states had a higher share in the computer and electronic products subsector (in all four states) and in the petroleum and coal products subsector (primarily Texas), but similar or lesser shares in the other 17 subsectors. Texas was the only border state with an above-average share in manufacturing, with particularly high shares in chemicals and in petroleum and coal products. Among the border region metros, only El Paso had an above-average share.

TABLE 3
BORDER REGION COUNTIES WITH SIGNIFICANT MILITARY EMPLOYMENT*

State and County	Military Employment	Share of Population	Major Military Bases
CALIFORNIA			
San Diego	107,893	3.44%	Camp Pendleton, Marine Corps Marine Corps Air Station Miramar Marine Corps Recruit Depot San Diego Naval Base Coronado (7 facilities) Naval Base Point Loma Naval Base San Diego
ARIZONA			
Yuma	4,321	2.15	Marine Corps Air Station Yuma Yuma Proving Ground (Army)
Pima	8,681	0.88	Davis-Monthan Air Force Base
Cochise	5,671	4.25	Fort Huachuca (Army)
NEW MEXICO			
Otero	4,819	7.33	Holloman Air Force Base White Sands Missile Range (Army)**
TEXAS			
El Paso	27,488	3.35	Fort Bliss Military Installation (Army)***
Val Verde	1,547	3.15	Laughlin Air Force Base

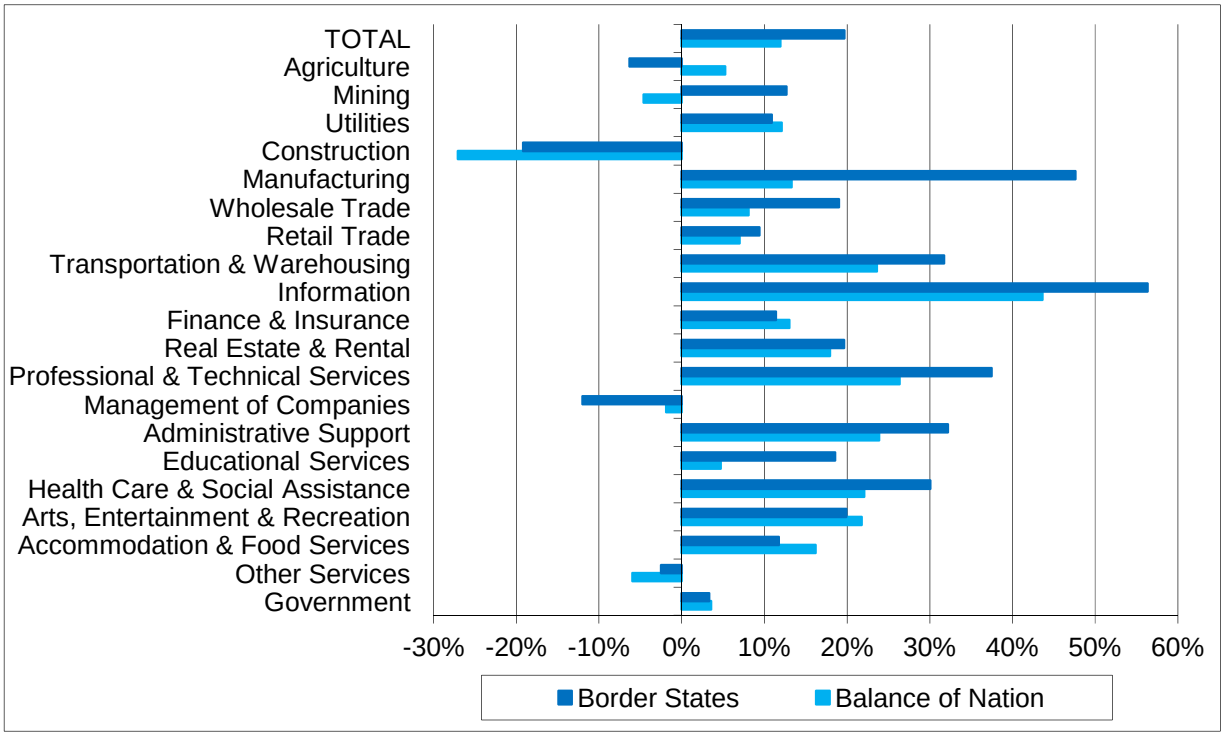
* Defined as employment of more than 0.5 percent of the population
** Extends into Doña Ana County, New Mexico
*** Extends into Otero County, New Mexico

Source: U.S. Department of Commerce, Bureau of Economic Analysis (2011 employment and population) and Wikipedia (military bases).

The border region metros as a whole had a substantially different industrial mix than the border states as a whole and compared to other metro areas. Sectoral shares in the border region metros were very much higher in government and also higher in real estate and rental, but lower in manufacturing, wholesale trade, finance and insurance, information, and management of companies. Looked at individually, each of the border states exhibited considerable differences in the sectoral mix, with very wide differences occurring across the border region metro areas. In particular, California had above-average shares in the information sector and the professional, scientific and technical services sector; Arizona had a high share in finance and insurance; New Mexico's economy was disproportionately dependent on government, mining, and agriculture; and mining and mining-related manufacturing were relatively important in Texas.

2003-to-2012 Change. Chart 7 displays the inflation-adjusted percent change in GDP by sector between 2003 and 2012 (similar years in the economic cycle). Overall, the real percent change in the border states was 20 percent, compared to 12 percent in the balance of the country. The border states experienced much more rapid growth in manufacturing and a higher growth rate in mining; wholesale trade; transportation and warehousing; information; professional, scientific and technical services; administrative support; educational services; and health care and social assistance. Only in the small sectors of agriculture and management of companies was the percent change in the border states much less than in the balance of the nation. In most sectors,

CHART 7
PERCENT CHANGE IN INFLATION-ADJUSTED GROSS DOMESTIC PRODUCT BETWEEN 2003 AND 2012 BY SECTOR WITHIN THE UNITED STATES



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

growth rates varied widely across the four border states, suggesting that economic integration is limited across the four states. In 12 of the 20 sectors, the gain was largest in Texas.

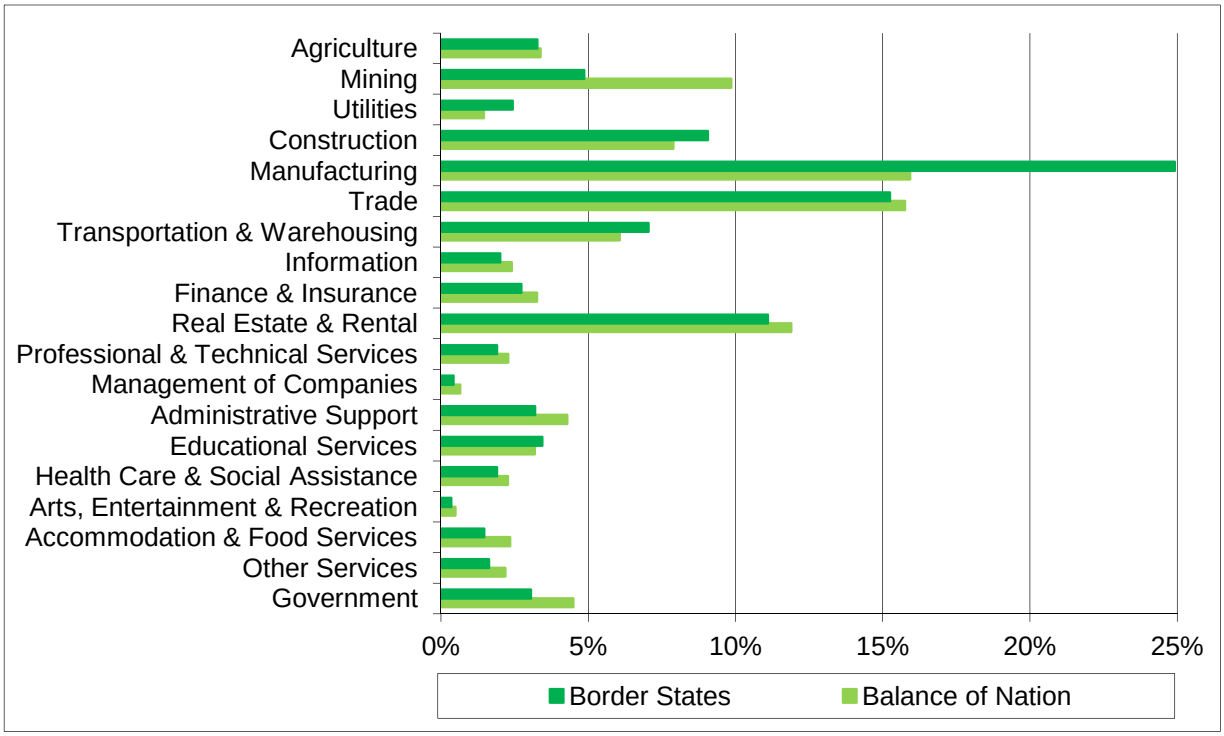
Based on nominal dollars, the change in the sectoral share between 2003 and 2012 in the border region metros as a whole did not differ too much in most sectors from the changes in the nation's other metro areas and in the border states. However, an increase in government's sectoral share in the border region metros contrasted with a decline in the border states and no change in the rest of the metro areas. Offsetting this increase in share in the border region metros were decreases in share in the information and real estate and rental sectors. Nationally, not much change in share occurred in either sector; the information sector's share rose in the border states.

México

This subsection is based on the value added component of PIB in 2012. At the sectoral level, the composition of the economy of the border states taken as a whole was different from that in the rest of the country, with higher shares in five sectors and lesser shares in 14 sectors. Chart 8 displays the 19 sectors (wholesale trade and retail trade are combined).

The sectors in which the share in the border states was more than marginally higher than in the balance of the nation follow:

CHART 8
VALUE ADDED SECTORAL SHARES WITHIN MÉXICO, 2012



Source: Instituto Nacional de Estadística y Geografía.

- Manufacturing: very substantially higher share of 24.9 percent in the border states versus 15.9 percent in the balance of the country. Of the 12 groups of subsectors for which data are available, most of the difference was in the group including machinery, computer and electronic products, electrical equipment, and transportation equipment (hereafter referred to as machinery and equipment). The share in the border states also was considerably higher in the group including primary metals and fabricated metal products. In contrast, the share in the border states was lower than in the balance of the country in the food subsector, and in the group including petroleum, chemicals, and plastics. Coahuila had a very high manufacturing share at 40.6 percent. The share ranged from 17.9-to-25.5 percent in the other border states. Coahuila had a larger share than the other border states in several of the groups, with the metals and machinery and equipment groupings accounting for most of the difference. Tamaulipas had relatively little manufacturing in these groups, but had a high percentage in the group including petroleum.
- Construction: higher share of 9.1 percent in the border states versus 7.9 percent in the balance of the country. The construction share exceeded 12 percent in Baja California, but was less than 7 percent in Chihuahua.
- Transportation and Warehousing: higher share of 7.0 percent in the border states versus 6.1 percent in the balance of the country. Baja California, Chihuahua, and Sonora had shares lower than in the balance of the country while the shares in Tamaulipas and Nuevo León exceeded 8.5 percent.

- Utilities: higher share of 2.4 percent in the border states versus 1.5 percent in the balance of the country. The share in Baja California was highest at 3.8 percent.

The share in the border states was more than marginally lower than in the balance of the nation in some sectors:

- Mining: substantially lower share of 4.9 percent in the border states versus 9.9 percent in the balance of the country. Shares were less than 3 percent in Baja California, Coahuila, and Nuevo León, but mining accounted for 15.4 percent of Sonora's total value added (none in the oil and gas group) and 9.0 percent in Tamaulipas (nearly all in the oil and gas group).
- Government: lower share of 3.1 percent in the border states versus 4.5 percent in the balance of the country. Shares ranged from 2.2 percent in Nuevo León to 4.4 percent in Baja California.
- Administrative support: lower share of 3.2 percent in the border states versus 4.3 percent in the balance of the country. Among the border states, the share ranged from 1.9 percent in Tamaulipas to 4.6 percent in Nuevo León.

The trade sector — which includes retail and wholesale — was the second largest nationally and in the border states. The share in the border states (15.2 percent) was a little less than that in the balance of the country (15.8 percent). The share in the border states varied from 10.9 percent in Coahuila to 17.2 percent in Nuevo León.

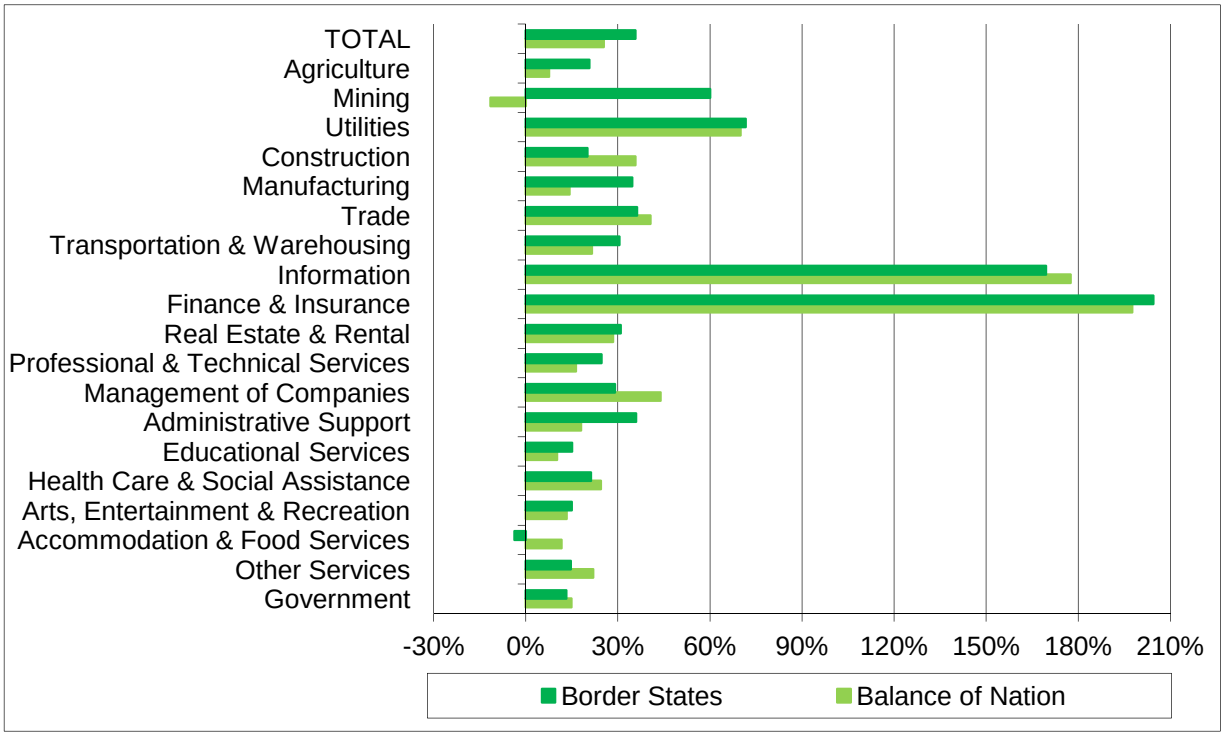
Chart 9 displays the inflation-adjusted percent change in value added by sector between 2003 and 2012. Overall, the real percent change in the border states was 36 percent, compared to 25 percent in the balance of the country. Relative to the rest of the country, the border states experienced much more rapid growth in mining and faster growth in agriculture, manufacturing, and administrative support, but smaller increases in management of companies, construction, and accommodation and food services. Within the mining sector, the border states posted a greater gain in both the oil and gas group and other activities; the GDP of oil and gas fell in the balance of the country. Within manufacturing, the border states had faster growth in several of the groups, including the large groups of metals and machinery and equipment.

Growth rates ranged widely across the six border states in many of the sectors. For example, in the large manufacturing sector, the real GDP rose 50 percent in Nuevo León but only 13 percent in Baja California between 2003 and 2012. In the large machinery and equipment group, real GDP more than doubled in Nuevo León and Sonora, but increased only 10 percent in Baja California. In the metals group, the figure rose 51 percent in Nuevo León but fell 21 percent in Baja California.

Comparison of United States and México

Significant differences existed in the sectoral mix in 2012 between the United States and México (see Chart 10). In general, the share was higher in the United States in most sectors that can be considered to be services and lower in most of the other sectors. Shares were higher in the United States in government; professional, scientific and technical services; health care and social assistance; finance and insurance; and information. Shares were higher in México in mining, manufacturing, construction, trade, transportation and warehousing, and agriculture.

CHART 9
PERCENT CHANGE IN INFLATION-ADJUSTED VALUE ADDED BETWEEN 2003 AND 2012 BY SECTOR WITHIN MÉXICO



Source: Instituto Nacional de Estadística y Geografía.

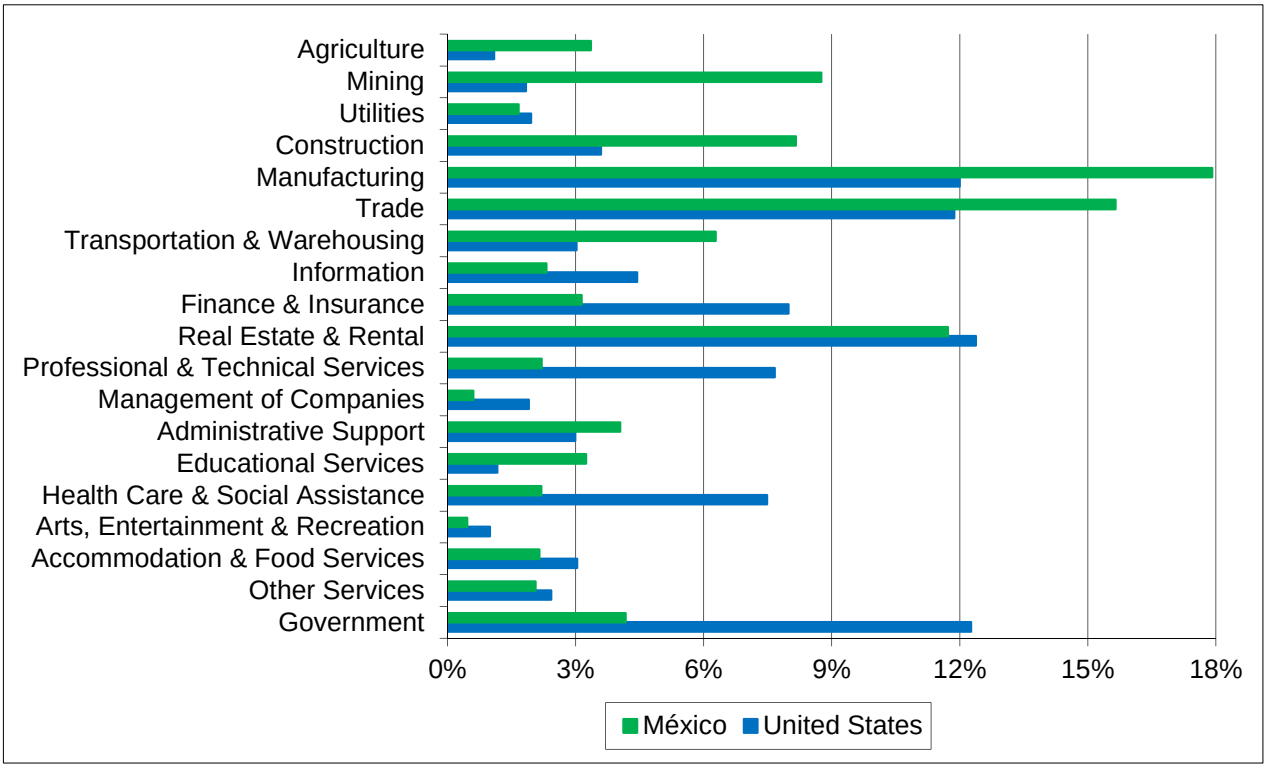
In the manufacturing sector, of the 11 subsectoral groups that can be compared between the United States and México, the share in the United States was slightly higher than in México in three.[6] However, the share in México was much higher for food, beverages and tobacco and moderately higher in the nonmetallic mineral products; primary metals and fabricated metal products; and machinery and equipment groups. In the mining sector, the share was far higher in México for oil and gas and somewhat higher for other mining activities.

The sectoral mix in México in 2012 was more similar to the sectoral mix in the United States two or more decades ago than to the mix in the United States in 2012. Over time, sectoral shares in the United States have dropped in agriculture, manufacturing, and trade — sectors for which the latest share was higher in México than the United States. In contrast, the share has increased over time in the United States in most services — sectors for which the latest share was lower in México.

The overall difference in the sectoral mix between the border states in the United States and México was just as wide as for the balance of the nations. In most sectors, the differences between the U.S. and Mexican border states (see Chart 11) were similar to those for the nations. However, the differential in manufacturing was much broader in the border states, while there

[6] Since the latest subsectoral data for the United States are for 2011, the subsectoral comparisons with México are based on 2011 data.

CHART 10
COMPARISON OF SECTORAL SHARES OF
U.S. GROSS DOMESTIC PRODUCT AND MÉXICO VALUE ADDED, 2012



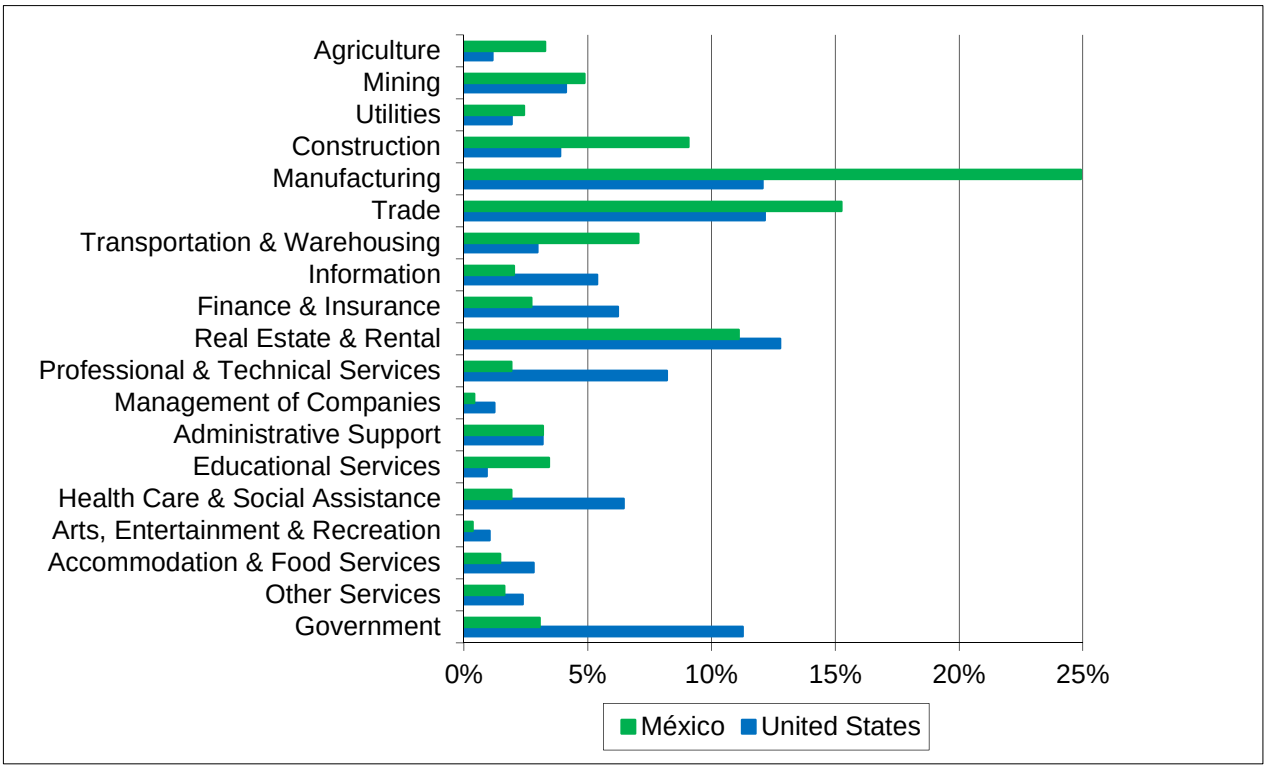
Sources: Instituto Nacional de Estadística y Geografía (México) and U.S. Department of Commerce, Bureau of Economic Analysis (United States).

was less difference in the mining share. The only manufacturing subsectoral group in the border states of México that was not larger than in the border states of the United States was petroleum, chemicals, plastics and rubber products. The Mexican share was considerably higher in the food, beverages and tobacco; primary metals and fabricated metal products; and machinery and equipment groups.

Nationally, the real percent change in value added between 2003 and 2012 was twice as high in México as in the United States. México had far higher growth rates in the information and finance and insurance sectors, and much larger gains in utilities, construction, management of companies, trade, and other services. In the other 12 sectors, gains in México relative to the United States ranged from higher in five to lower in seven (see Chart 12). The real percent change in manufacturing was similar in the two countries. Between 2003 and 2011, México had larger gains in most of the subsectoral groups, but the United States had a larger increase in the sizable machinery and equipment group. In the mining sector, the United States had a small gain in the oil and gas group compared to a loss in México.

As with the nations, the 2003-to-2012 real percent change GDP/value added in the border states was considerably higher in México than the United States. The sectoral pattern was similar in the border states to the nations.

CHART 11
COMPARISON OF SECTORAL SHARES OF GROSS DOMESTIC PRODUCT OR VALUE ADDED IN THE BORDER STATES OF THE UNITED STATES AND MÉXICO, 2012



Note: The shares are based on GDP in the United States and value added in México.

Sources: Instituto Nacional de Estadística y Geografía (México) and U.S. Department of Commerce, Bureau of Economic Analysis (United States).

Gross Domestic Product Per Capita

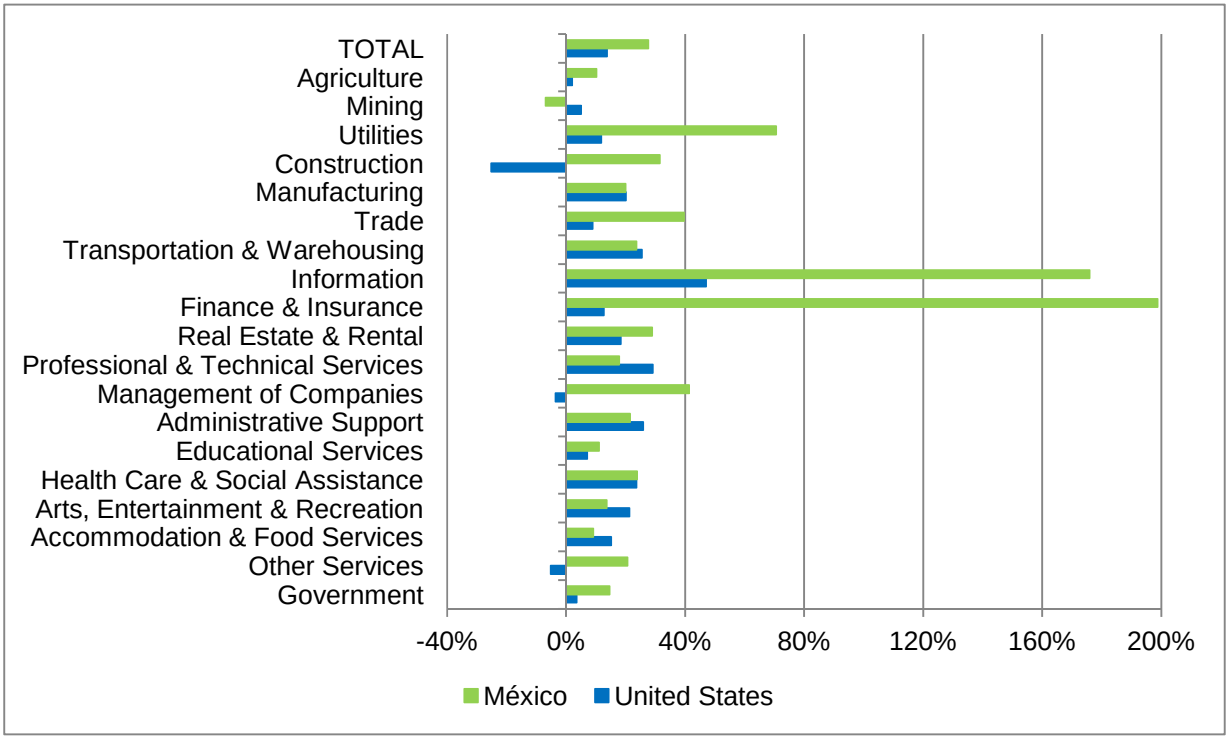
GDP per capita is frequently used as a measure of economic prosperity or standard of living. In order to compare the GDP per capita of states and metro areas, the figures adjusted for the regional cost of living are used as well as the unadjusted figures. Within the United States, a measure of the cost of living — regional price parity — is produced by the BEA for states and metropolitan areas. A comparable regional measure is not available in México. However, the figures for México and its states are adjusted by the PPP.

United States

In 2013, GDP per capita in the United States was $53,135. On an inflation-adjusted basis, the increase in 2013 was 1.1 percent, similar to the gains in the three prior years of between 1.1-and-1.7 percent.

In 2012, the figure for the U.S. border states was $51,531 — 5.2 percent higher than the figure in the balance of the country. However, after adjusting for the cost of living, GDP per capita in the border states was 0.6 percent less than in the rest of the country.

CHART 12
COMPARISON OF THE INFLATION-ADJUSTED PERCENT CHANGE IN GROSS DOMESTIC PRODUCT OR VALUE ADDED BY SECTOR BETWEEN 2003 AND 2012 IN THE UNITED STATES AND MÉXICO



Note: The shares are based on GDP in the United States and value added in México.

Sources: Instituto Nacional de Estadística y Geografía (México) and U.S. Department of Commerce, Bureau of Economic Analysis (United States).

Before adjusting for living costs, GDP per capita in California and Texas was higher than the national average, while the figures for Arizona and New Mexico were far below average. After adjusting for the cost of living, GDP per capita rises to 11 percent above the national average in Texas, falls to 4 percent below average in California, and improves a bit but remains considerably below average in Arizona (-17 percent) and New Mexico (-18 percent).

From 1969 through 2012, GDP per capita on a nominal basis increased at about the same pace in the border states as in the rest of the country. The performance across the four border states varied widely, with Arizona, California and New Mexico lagging behind the national average and Texas considerably outperforming the national average. By economic cycle within this period, the border states' performance ranged from considerably below the balance of the nation in the 1979-to-1989 cycle to well above between 1973 and 1979. A better performance in the border states in the 2000-to-2007 cycle has been offset by a worse record since 2007. The performance in each of the states has fluctuated by economic cycle, with Texas posting strong gains since 2000 while Arizona has fallen substantially relative to the national average.

On an inflation-adjusted basis (real GDP data begin in 1987), the border states have barely outperformed the balance of the nation, with slightly stronger gains in the 1989-to-2000 and 2000-to-2007 economic cycles but a worse performance since 2007. The average gain from 1987 to 2012 was not substantially different across the border states, with New Mexico having the greatest annual average gain at 2.1 percent and California the lowest at 1.3 percent.

In the border region, as measured by the sum of the metro areas, GDP per capita in 2012 was substantially below the national average and the figure for the four border states as a whole, both before and after adjusting for living costs. The unadjusted figure was 18 percent less than the national average and 21 percent less than in the border states. The adjusted figure was 20 percent less than the national average and 19 percent less than the figure for the four border states.

Even after adjusting for living costs, GDP per capita in 2012 varied widely across the border states and the border metros, as seen in Chart 13. Though slightly below the national average, the figure for San Diego was substantially higher than in the other border metros. In six of the 10 metro areas, GDP per capita was more than 40 percent below the U.S. average.

Between 2001 and 2012, the 10 border region metros experienced a slightly lesser increase in real GDP per capita than in the border states. A slightly stronger performance from 2001 to 2007 was more than offset in the 2007-to-2012 period. Most of the metro areas experienced an average annual gain of less than 1 percent between 2001 and 2012, but the increase in Las Cruces was 1.8 percent while El Centro and Tucson had small losses over this period on an inflation-adjusted basis.

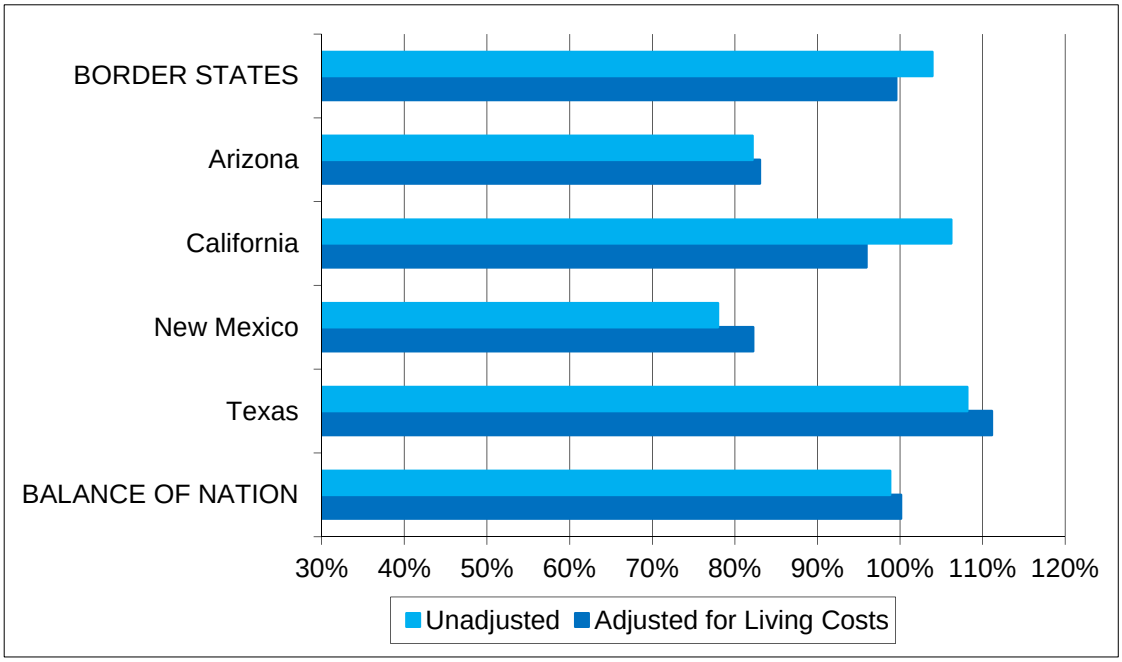
México

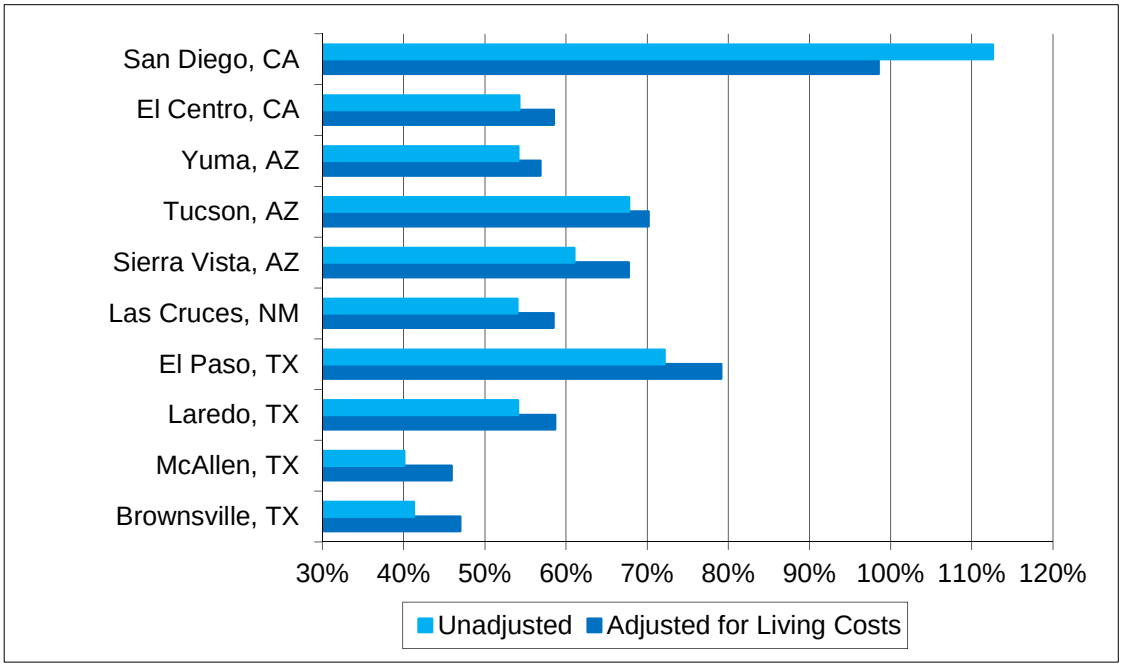
The per capita figures for the nation were calculated by dividing PIB by the population estimates and projections made by CONAPO. In 2013, PIB per capita in México was 132,468 pesos. On an inflation-adjusted basis, the per capita figure dropped 1.0 percent in 2013, following three years of gains between 2.7-and-3.8 percent. Between 1993 and 2013, real PIB per capita rose 26.4 percent. The increase between 2003 and 2013 was a little higher than that between 1993 and 2003.

In order to compare the states to the nation, value added per capita in 2012 must be used. It was 128,815 pesos in México. The figure in the border states was 158,968 pesos, 30 percent higher than the figure in the balance of the country. The figure in Nuevo León was much higher than in the other border states (see Chart 14), but the figure also was above the national average in Coahuila, Sonora, and Tamaulipas. Since cost-of-living data by region do not exist in México, it is not possible to conclude whether prosperity is higher in the border states than in the balance of the nation.

On an inflation-adjusted basis, value added per capita rose 14.2 percent in México between 2003 and 2012. The real gain in the border states was 17.1 percent compared to a gain of 13.1 percent in the balance of the nation. The real change over the nine years was substantially different across the border states, with gains in excess of 23 percent in Nuevo León and Sonora, but less than 9 percent in Baja California and Tamaulipas.

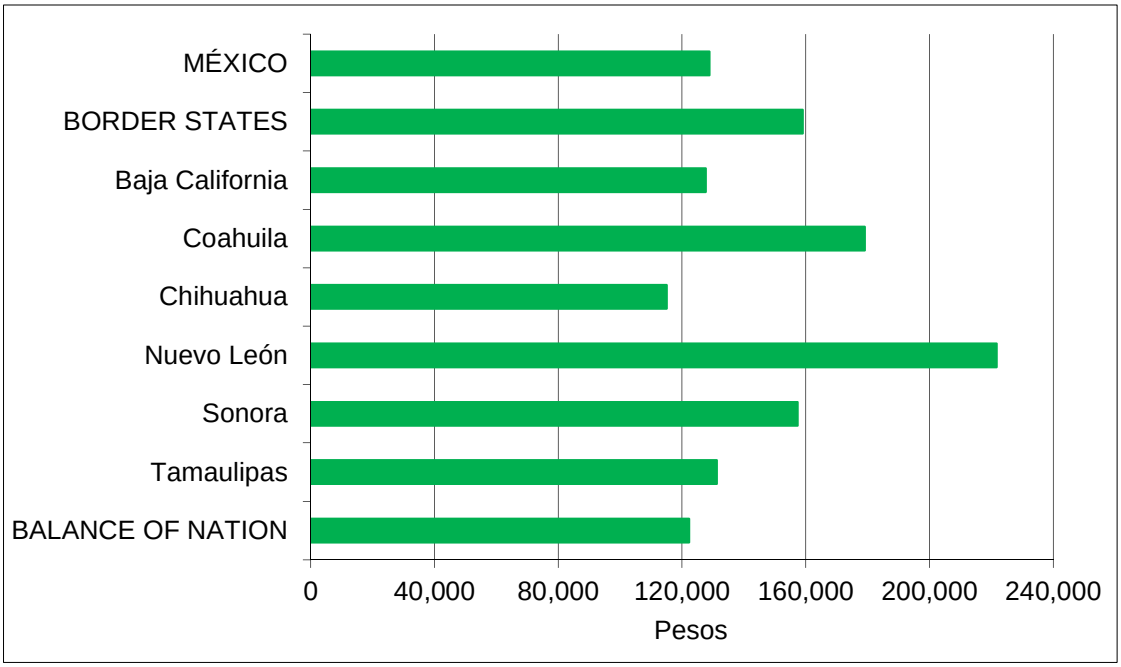
CHART 13
GROSS DOMESTIC PRODUCT PER CAPITA WITHIN THE UNITED STATES EXPRESSED AS A PERCENTAGE OF THE NATIONAL AVERAGE, 2012





Source: U.S. Department of Commerce, Bureau of Economic Analysis.

CHART 14
VALUE ADDED PER CAPITA WITHIN MÉXICO, 2012



Source: Instituto Nacional de Estadística y Geografía (value added) and Consejo Nacional de Población (population).

Expressed in PPP-adjusted U.S. dollars, PIB per capita in México in 2013 was $16,907. This was 68 percent less than the figure in the United States.

In 2012, value added per capita in México in PPP-adjusted dollars was $16,491, only 33 percent of the GDP per capita figure of the United States of $49,587.[7] The differential was not quite as wide when comparing the border states of each country, with the Mexican figure 39 percent of the U.S. figure. Even the relatively high figure in Nuevo León was only 73 percent of the figure in New Mexico, which was the lowest of the U.S. border states.

For an international perspective, the World Bank publishes a similar measure — gross national income per capita — adjusted for PPP. In 2012, the United States ranked seventh ($52,610) and México 58th ($16,450) among 176 countries. Chile ($21,310) was the only Latin American country with a higher figure than México, though the figures for Panama and Uruguay were nearly as high as for México. The figures for countries such as China ($9,040) and India ($3,910) were much lower.

[7] The comparison of per capita value added in México to per capita GDP in the United States causes the apparent differences in prosperity to be overstated. Nationally in 2012, value added was 3.1 percent less than total PIB.

Gross Domestic Product Per Employee

GDP per employee is frequently used as a proxy for economic productivity. The regional price parity is again used to compare locations within the United States and the PPP is used to compare México to the United States.

United States

In 2012, GDP per employee in the U.S. border states was $93,282 — 10.1 percent higher than the figure in the balance of the country. However, the differential was only 4.1 percent after adjusting for the cost of living.

Before adjusting for living costs, GDP per employee in California and Texas was higher than the national average, while the figures for Arizona and New Mexico were below average. After adjusting for the cost of living, GDP per employee was 10 percent above the national average in Texas, only 1 percent above average in California, and below average in Arizona (-7 percent) and New Mexico (-9 percent).

From 1969 through 2012, GDP per employee on a nominal basis increased more in the border states than in the rest of the country. However, by economic cycle within this period, the performance in the border states ranged from below to above the balance of the nation, with an unfavorable performance since 2007. Similarly, the performance across the four border states varied widely, with Arizona and New Mexico lagging far behind the national average, California at the national average, and Texas well above average. The performance in each of the states has fluctuated by economic cycle. Arizona has lost ground to the national average since 2000, while the other states have experienced faster-than-average growth in GDP per employee.

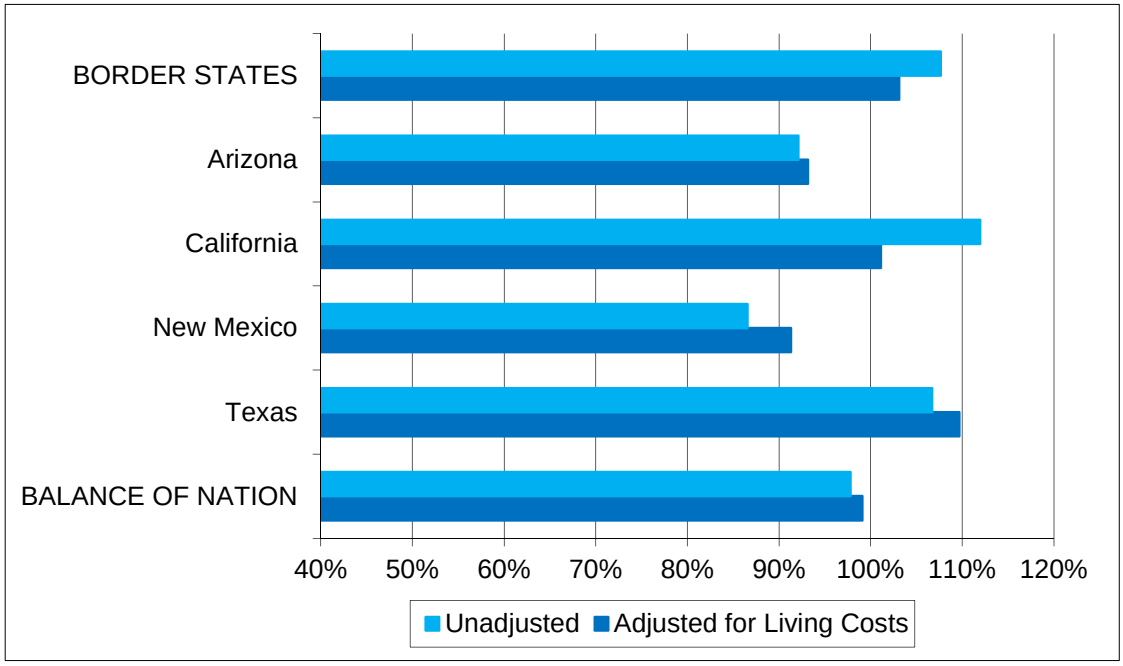
On an inflation-adjusted basis, the border states have somewhat outperformed the balance of the nation since 1987 on GDP per employee, with a somewhat stronger gain in the 1989-to-2000 and 2000-to-2007 economic cycles. The average gain from 1987 to 2012 was not substantially different across the border states, though New Mexico had the largest average increase.

In 2011, GDP per employee in the border region's 10 metro areas combined was below the national average and the figure for the four border states, both before and after adjusting for living costs. The unadjusted figure was 8 percent less than the national average and 14 percent less than in the border states. After adjustment, the differentials were 2 percentage points wider. Even after adjusting for living costs, GDP per employee varied widely across the border states and the border metros, as seen in Chart 15. Among the metro areas, the cost-of-living-adjusted figure was highest in San Diego and El Paso but still was below the national average, while the figures in McAllen and Brownsville were 34-to-36 percent below average.

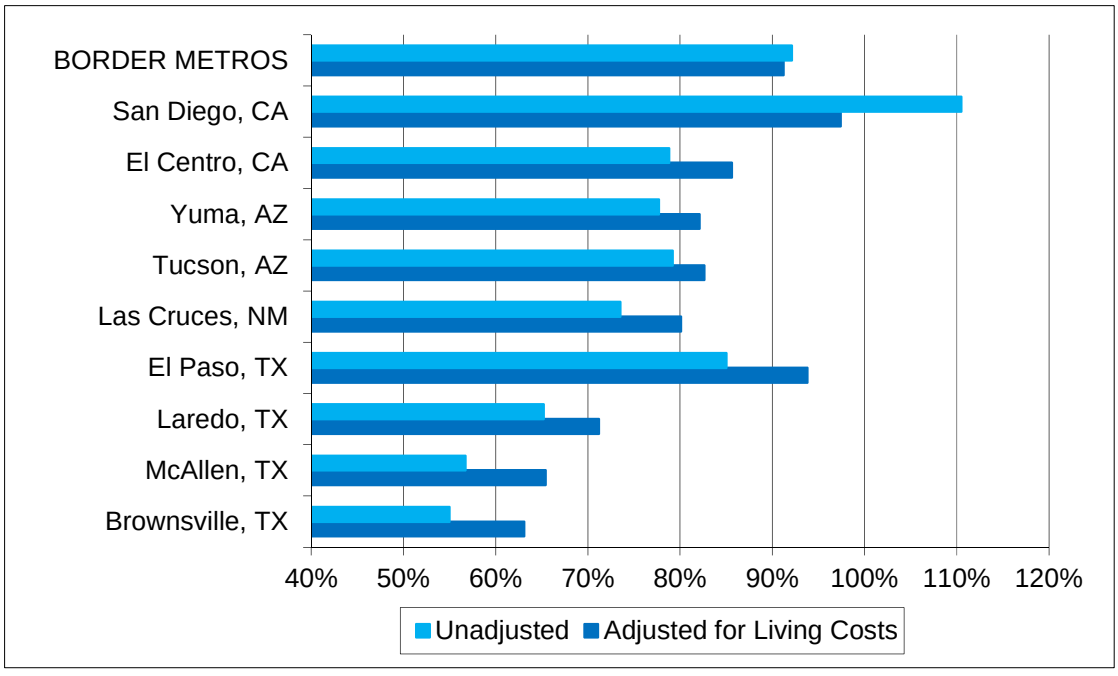
Between 2001 and 2011, the annual average real percent change was 0.9 percent in the four border states, marginally higher than the 0.8 percent gain elsewhere in the country. However, only California (1.0 percent) exceeded the increase in the balance of the country; the average gain in the other three states was between 0.5-and-0.8 percent. The 10 border region metros experienced a lesser increase in real GDP per employee than in the border states at 0.7 percent, lagging behind particularly after 2007. Las Cruces experienced a strong annual average gain of

CHART 15
GROSS DOMESTIC PRODUCT PER EMPLOYEE WITHIN THE UNITED STATES EXPRESSED AS A PERCENTAGE OF THE NATIONAL AVERAGE

2012



2011



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

2.1 percent, and San Diego and Yuma had gains of 1.2 percent between 2001 and 2011, while El Paso and Laredo had losses over this period on an inflation-adjusted basis.

The border states and the border region compared less favorably to the rest of the nation on the per capita measure than on the per employee measure. This is a result of the employment-to-population ratio (discussed in a later subsection) being lower in the border states, and especially in the border region, than in the rest of the country.

United States, by Sector and Subsector

Nationally, GDP per employee in 2012 varied hugely by sector, from $35,730 in other services to $528,969 in utilities. Other sectors with figures in excess of $100,000 included real estate and rental, mining, information, manufacturing, wholesale trade, management of companies, and finance and insurance. GDP per employee varied substantially by sector across the border states, even after adjusting for the cost of living.

After adjusting for living costs, GDP per employee in the border states was considerably higher than in the rest of the nation in the mining sector. The border states also had a relatively high figure in manufacturing, information, and retail trade. The average in the border states was considerably lower than in the balance of the country in the finance and insurance, management of companies, and real estate and rental sectors.

Nationally, the real percent change in GDP per employee varied widely by sector between 2003 and 2012. Compared to the overall gain of 8 percent, the figure for mining soared 66 percent and the real estate and rental sector had a gain of 37 percent. Increases also were sizable in most of the other services sectors. In contrast, real GDP per employee fell in six sectors, including construction, manufacturing, and agriculture. Between 2003 and 2012, the border states outperformed the balance of the country by a large margin in mining, utilities, and wholesale trade, but had a significantly inferior performance in management of companies.

México

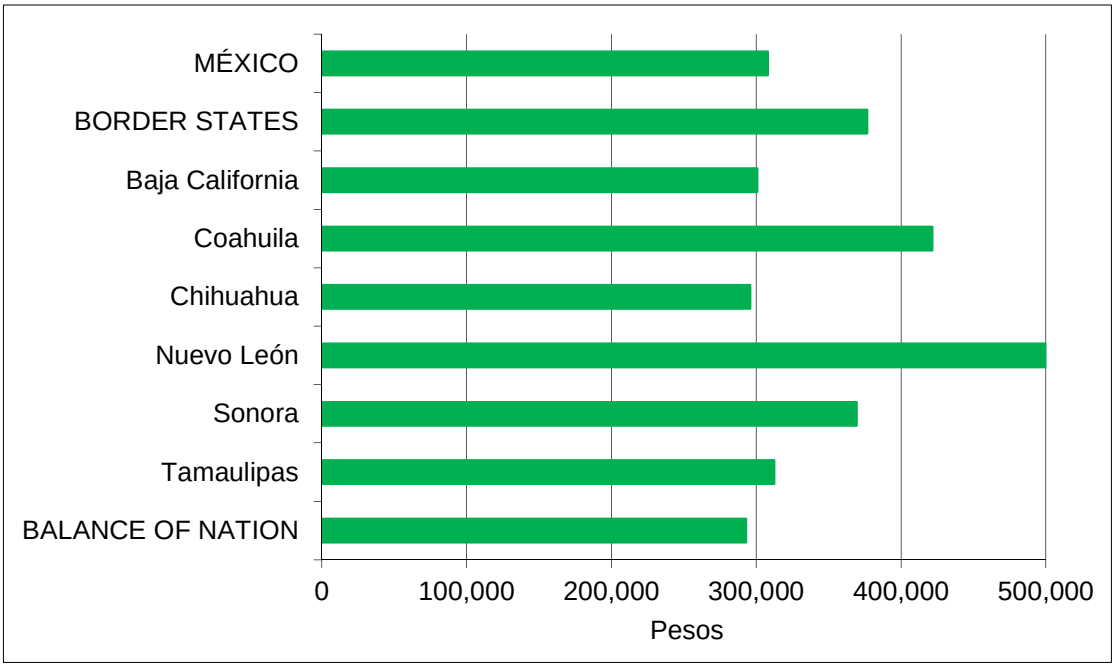
The ENOE employment figures are used to calculate the per employee values. PIB per employee in 2013 was 319,254 pesos. On an inflation-adjusted basis, the value slipped 0.2 percent in 2013, following gains of 0.6 percent in 2012 and 1.7 percent in 2011.

In 2012, the value added per worker in México was 307,863 pesos. The figure was higher in the border states at 376,396 pesos, 28.5 percent higher than the figure in the balance of the country. The figure in Nuevo León was much higher than in the other border states (see Chart 16).

On an inflation-adjusted basis, value added per employee rose 5.0 percent in México between 2005 and 2012.[8] The increase in the border states was a little higher at 6.4 percent, compared to 4.4 percent in the balance of the nation. The change from 2005 to 2012 was substantially different across the border states, with a large decline in Baja California, no change in Tamaulipas, a small increase in Coahuila, and sizable gains in Chihuahua, Nuevo León, and Sonora.

[8] Because of the discontinuity in the ENOE time series, the percent change over the 2005-to-2012 period was calculated by cumulating the annual percent changes.

CHART 16
VALUE ADDED PER EMPLOYEE WITHIN MÉXICO, 2012



Source: Instituto Nacional de Estadística y Geografía.

Expressed in PPP-adjusted U.S. dollars, value added per employee in México in 2012 of $39,414 was only 45 percent of the GDP per employee figure of $86,664 in the United States.[9] The differential was not quite as wide when comparing the border states of each country, with the Mexican figure 52 percent of the U.S. figure. The relatively high figure in Nuevo León was 85 percent of the figure in New Mexico, which was the lowest of the U.S. border states. México compares more favorably to the United States on the per employee GDP measure than on the per capita measure since the employment-to-population ratio in México has been less than in the United States.

Employment

United States

The employment data discussed in this subsection, and the employment by sector and employment by occupation data addressed in the next subsections, are considerably different in nature than the employment data from the American Community Survey (ACS) that were presented in Volume II. The ACS employment is reported by individuals responding to the survey, while the BEA and BLS employment data are reported by employers. If an individual holds more than one job, that person is counted once in the ACS but each job is counted by the BEA and BLS. Employment in the ACS is reported by the place of residence of the worker, while the BEA and BLS data are reported by place of work. For example, an individual who

[9] As with the per capita figures, comparing per employee value added in México to per employee GDP in the United States causes the differential between the two countries to be overstated.

lives on the Arizona side of the Colorado River but works in California is counted in Arizona in the ACS but in California by the BEA and BLS.

Total employment is the sum of the number of proprietors (self-employed) and wage and salary workers. In the border states, total employment was 40.2 million in 2012, accounting for 22 percent of the national total. In 2011, employment in the border region was 3.8 million, just 10 percent of the border states total and 2 percent of the national total. The 11 urban areas in the border region were responsible for 97 percent of the region's employment.

Annual percentage changes in employment are shown in Chart 17. Each of the geographic regions displays strong and similar cyclicality. Gains in the border states and especially in the border region have generally exceeded those of the balance of the country.

The annual average increase in employment between 1969 and 2012 was 1.6 percent nationally. In the border states, the annual average increase (2.3 percent) was greater than in the rest of the country (1.4 percent). The average annual growth rate between 2003 and 2012 was slower than the long-term average, but the average for the border states (1.3 percent) still outpaced the figure for the balance of the nation (0.8 percent). Between 1969 and 2011, the average annual increase in the border region (2.6 percent) outpaced that of the balance of the border states (2.2 percent).

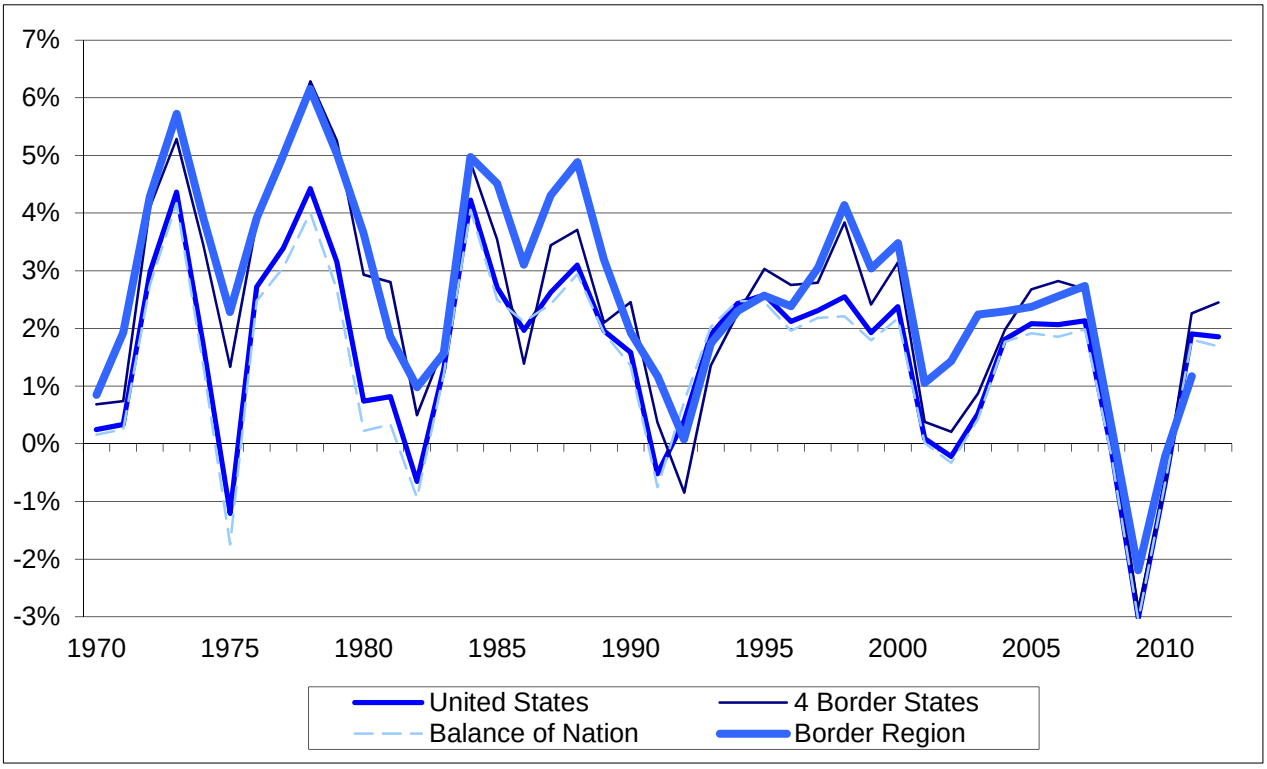
By economic cycle, employment growth rates in the border region have consistently been higher than those in the balance of the border states. The border states have consistently outperformed the balance of the nation, but the differentials have been small since 1989, as growth in the border states (primarily in California) has slowed. Except since 2007, Arizona has experienced the fastest employment growth among the border states and California has had the slowest growth. However, gains have not varied much in the border region across the four states. Between 1969 and 2011, the border region of Arizona had lesser growth than in the balance of the state while the opposite occurred in California. In most cycles, the border region's growth rate exceeded that of the rest of the state in New Mexico and Texas.

The annual average increase in employment between 1969 and 2011 in the 11 border urban areas was 2.7 percent. McAllen posted the greatest growth rate at 4.3 percent per year, followed by Eagle Pass and Laredo. The annual average increase was less than 2 percent in Calexico, Douglas, and Del Rio. Between 2001 and 2011, Eagle Pass had the fastest average growth at 4.2 percent per year, followed by McAllen. San Diego had the least gain at 0.5 percent per year, followed by Tucson at 0.9 percent.

México

Employment (as measured by the ENOE) was 8.865 million in the six border states in 2013, 18.0 percent of the national total of 49.126 million. Employment in Nuevo León (2.154 million) was considerably higher than in the other five states, which ranged from 1.196 million in Sonora to 1.442 million in Tamaulipas.

CHART 17
ANNUAL PERCENT CHANGE IN EMPLOYMENT WITHIN THE UNITED STATES, 1970 THROUGH 2012



Notes: The border region data, which are based on counties, are available only through 2011. The 2001-through-2011 figures for the nation and states were revised subsequent to the release of the 2011 county data.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Between 2005 and 2013, employment growth nationally was 13.5 percent.[10] The rate was higher in the border states (16.0 percent) than in the balance of the country (13.0 percent). The growth rate in Chihuahua (only 8.2 percent) was considerably less than in Baja California (25.1 percent) and Coahuila (22.3 percent).

Annual employment growth in México gradually fell from a 2.8 percent gain in 2006 to 0.4 percent in 2009. The growth rate gradually rose to 3.3 percent in 2012, but the 2013 increase was only 0.3 percent. The border states as a whole followed a similar cyclical pattern, but with a wider range. The gain was 4.4 percent in 2006, a loss of 1.5 percent occurred in 2009, and the increase in 2012 was 4.3 percent.

The percentage increase in employment between 2005 and 2012 was more than three times higher in México than in the United States (13.2-versus-4.1 percent). The differential in the growth rate in the border states was not quite as large as in the balance of the country (see Chart

[10] Because of the discontinuity in the ENOE time series, the percent change over the 2005-to-2012 period was calculated by cumulating the annual percent changes.

18). Despite the much faster growth in México, Texas had the fourth-highest growth rate among the 10 border states. However, the other U.S. states ranked from eighth to last.

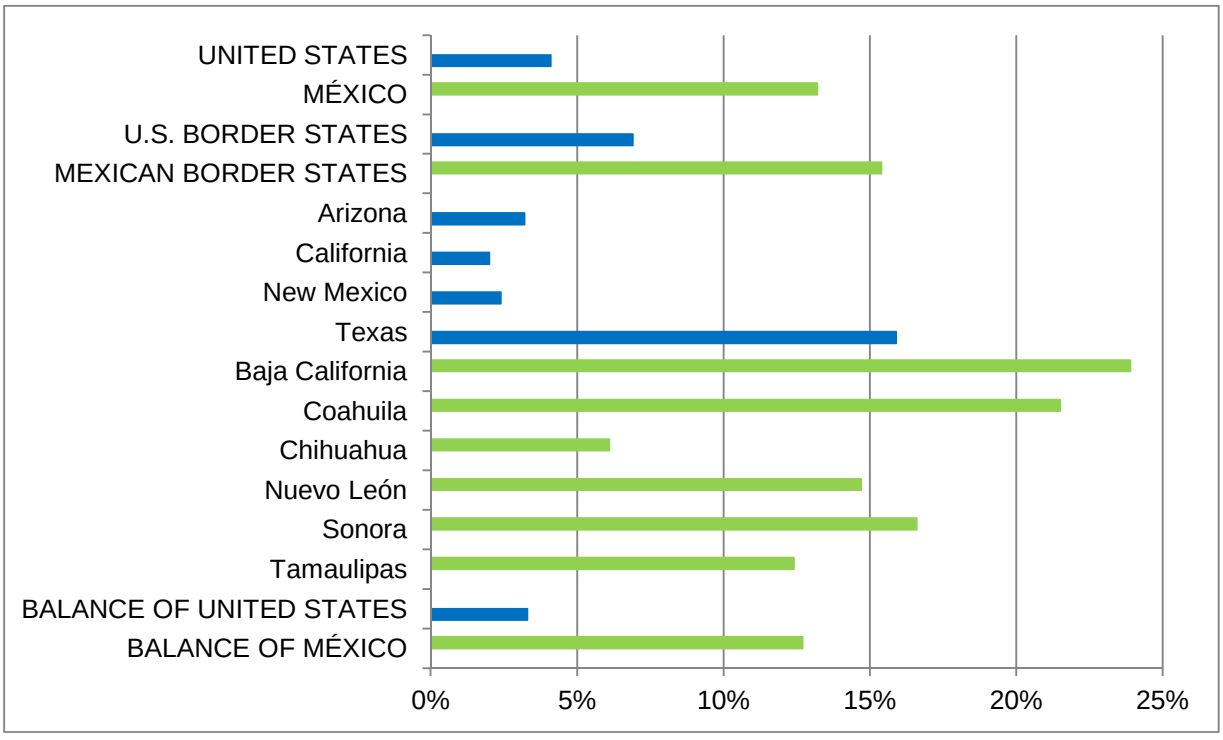
The only year in which the employment growth rate in the United States exceeded that in México was 2007. The largest differentials were in 2009 and 2010, when employment fell in the United States.

Employment by Sector

United States

The American Community Survey categorizes employment by NAICS sector, but most other data sources use a variant of the NAICS in regards to government workers. In the ACS, "public administration" includes only a portion of government employees, with the others categorized in various other sectors. (For example, a public transit worker is classified in the transportation sector and a school teacher is counted in educational services.) In contrast, most of the sources of economic data classify all government workers in a "government" sector; the educational services sector consists only of private-sector workers.

CHART 18
PERCENT CHANGE IN EMPLOYMENT WITHIN THE UNITED STATES AND MÉXICO, 2005 THROUGH 2012



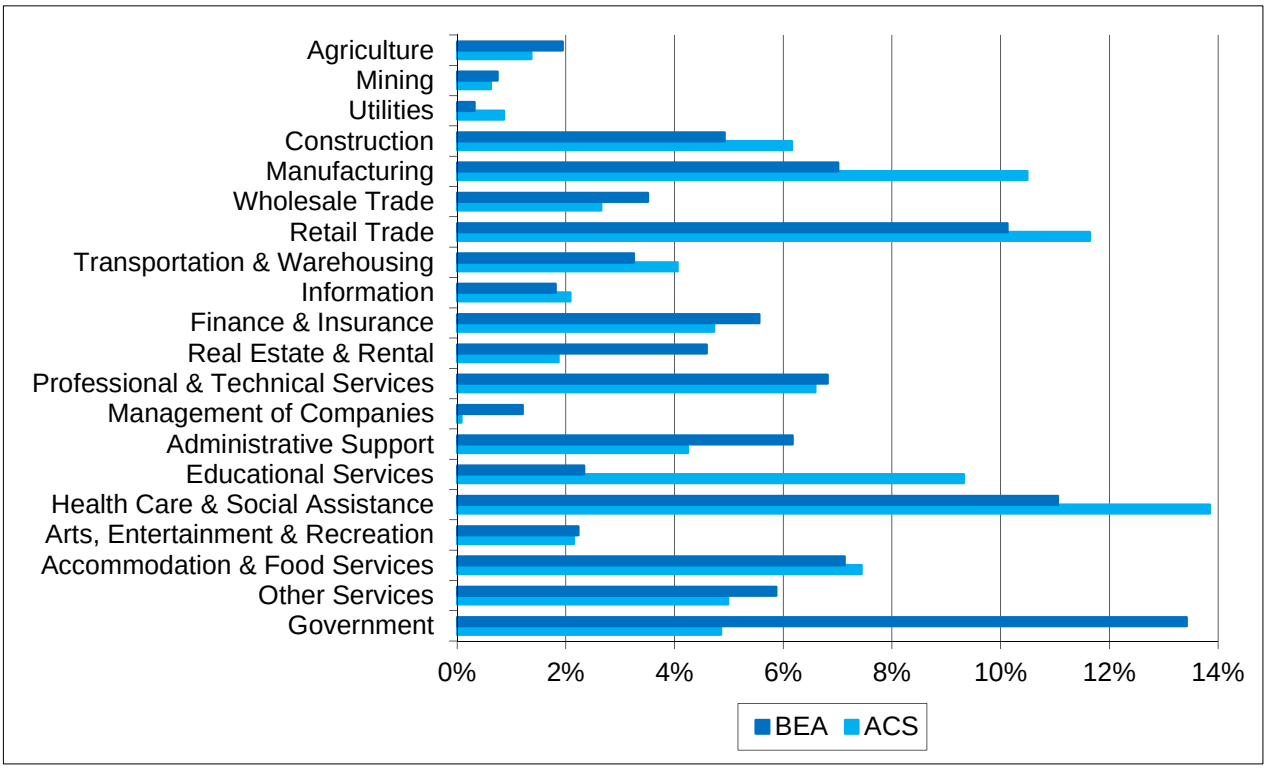
Source: U.S. Department of Commerce, Bureau of Economic Analysis, and Instituto Nacional de Estadística y Geografía, Encuesta Nacional de Ocupación y Empleo.

Other factors contribute to differences in the sectoral mix of employment between the ACS and the BEA that are displayed in Chart 19.[11] For example, some manufacturing workers are not employees of the manufacturing company but instead work for the firm on a contract basis, being counted by the BEA as employees of professional employer organizations, which are part of the administrative support sector.

The composition of the U.S. economy based on BEA employment is considerably different from that measured by GDP in part because some economic activities are much more labor intensive than others; value added per employee varies widely by sector. In addition, GDP per employee relative to earnings per employee varies by sector, particularly in real estate and rental.

The comparison of shares of employment and GDP for the United States is displayed in Chart 20. The sectoral share in 2012 was substantially higher based on GDP in the real estate and rental sector, and higher based on GDP in the information, finance and insurance, wholesale trade, and manufacturing sectors. The sectoral share was higher based on employment in the retail trade; accommodation and food services; health care and social assistance; administrative support; and other services sectors. In the border states, the differences between the GDP and employment

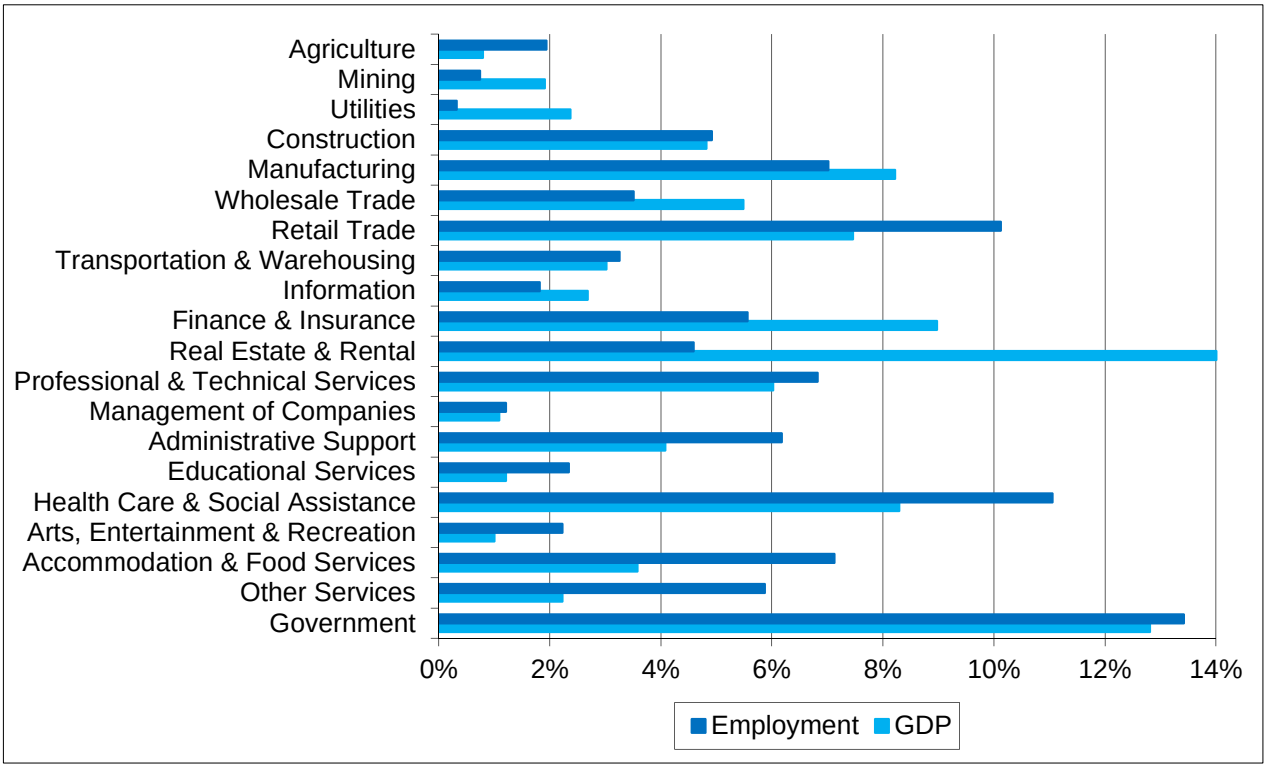
CHART 19
COMPARISON OF SECTORAL SHARES OF EMPLOYMENT
IN THE UNITED STATES, 2012



Sources: U.S. Department of Commerce, Bureau of Economic Analysis (BEA) and U.S. Department of Commerce, Census Bureau (2012 American Community Survey: ACS).

[11] Data from the 2012 ACS, not the 2008-to-2012 period used in Volume II, are displayed in the chart.

CHART 20
COMPARISON OF SECTORAL SHARES OF GROSS DOMESTIC PRODUCT AND EMPLOYMENT IN THE UNITED STATES, 2012



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

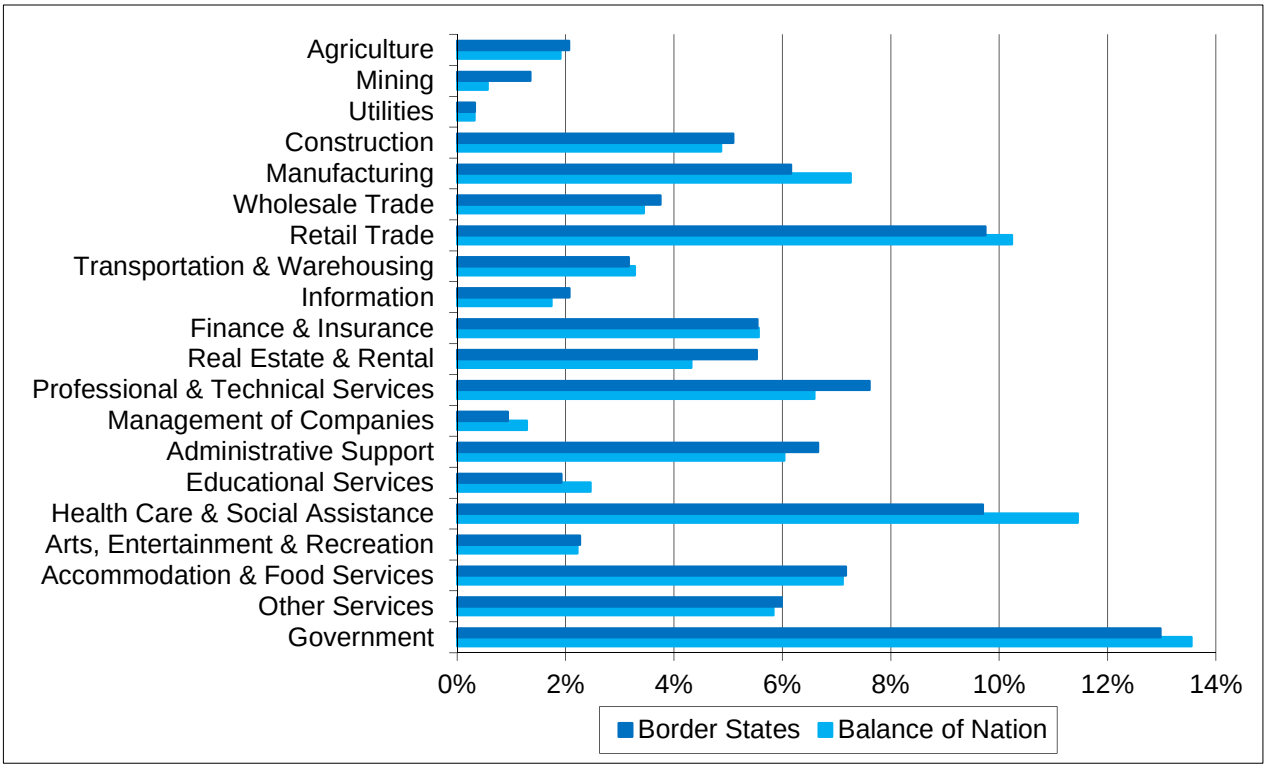
shares were not as broad in finance and insurance but were wider in mining, manufacturing, and information.

Based on employment, the sectoral shares in the border states in 2012 were higher than in the balance of the country in the real estate and rental; professional, scientific and technical services; and mining sectors. These higher shares were offset by lesser shares in health care and social assistance; and manufacturing (see Chart 21).

Most of the higher share in the border states in the mining sector occurred in the oil and gas subsector. The lower share in manufacturing resulted from a lower share in most of the 22 subsectors; a notable exception was the computer and electronics subsector. The share in the border states was lower than in the balance of the country in three of the four subsectors in health care and social assistance — hospitals, nursing care, and social assistance.

Differences in the composition of the economy were greater between the border region and the border states than between the border states and the rest of the country. Since so many of the employment figures by sector are withheld in the less populous border counties, the border metros as a whole, for which a limited amount of data imputation was necessary, are used as a proxy for the border region. In 2011, the employment share in the border metros was much higher than in the border states in the government sector and also was higher in health care and

CHART 21
EMPLOYMENT SECTORAL SHARES WITHIN THE UNITED STATES, 2012



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

social assistance. The border metros had a higher share of government employees in each of the subsectors, with a very large difference in the military category. Border metro shares were lower than in the border states in most of the other sectors, with large differences in mining, manufacturing, wholesale trade, and finance and insurance.

In 2012, the border states had a higher share of all workers in the nonfarm proprietors category, with lesser shares of wage and salary workers and farm proprietors, relative to the balance of the country. While a proprietorship is often connoted as entrepreneurial activity and deemed as a positive, many of those classified as proprietors in recent years were in that category only because they could not obtain a wage and salary job and were therefore forced by circumstances to earn an income in any way they could. Undocumented workers and those who lost their job during the recession are among those who have been counted as proprietors, many of whom had very low earnings, in part due to working only part time. Nationally, the share of nonfarm proprietors jumped from 15.7-to-21.3 percent between 2001 and 2012. Similar gains occurred in the border states and in the balance of the country. The increase in the nonfarm proprietors share from 2001 through 2011 was not as large in the border region as in the other geographies over the same period.

Over time, the sectoral mix has changed substantially in the United States. Since the early 1990s, the share of workers in the manufacturing sector has fallen sharply — a continuation of the downward trend in manufacturing employment relative to other sectors. Shares also fell in

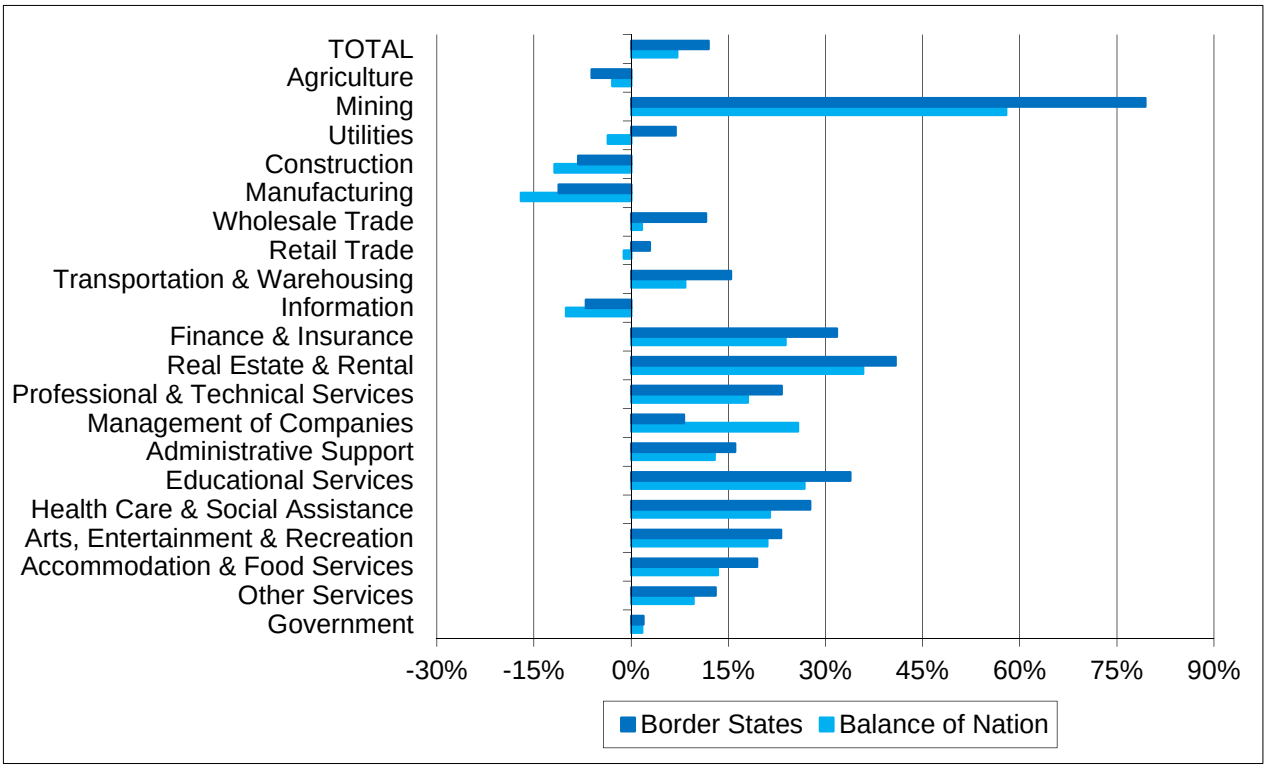
government, retail trade, and agriculture. In contrast, the share of employment rose in most of the services sectors, particularly health care and social assistance; professional, scientific and technical services; real estate and rental; and administrative support. Changes in employment shares generally were similar in the border states and the balance of the country. The manufacturing share did not drop as much in the border states, offset by lesser gains in health care and social assistance; and other services.

The percent change in employment by sector between 2003 and 2012 is shown in Chart 22. The border states experienced a greater gain in most sectors, especially mining and utilities. In contrast, the increases in employment in the management of companies sector was much lower in the border states than in the balance of the nation.

México Employment

The total number of employees counted in the 2009 economic census was 20.1 million, less than half of the 42.1 million workers in the 2010 census. Even after eliminating the agriculture and government sectors to make the figures more comparable, the 19.9 million in the economic census was only 58 percent of the 2010 census total of 34.5 million. A more direct comparison is to wage and salary workers identified in the 2010 census. The economic census total is 70 percent of that figure and 83 percent after omitting agriculture and government. Little of the

CHART 22
EMPLOYMENT PERCENT CHANGE BETWEEN 2003 AND 2012 BY SECTOR WITHIN THE UNITED STATES



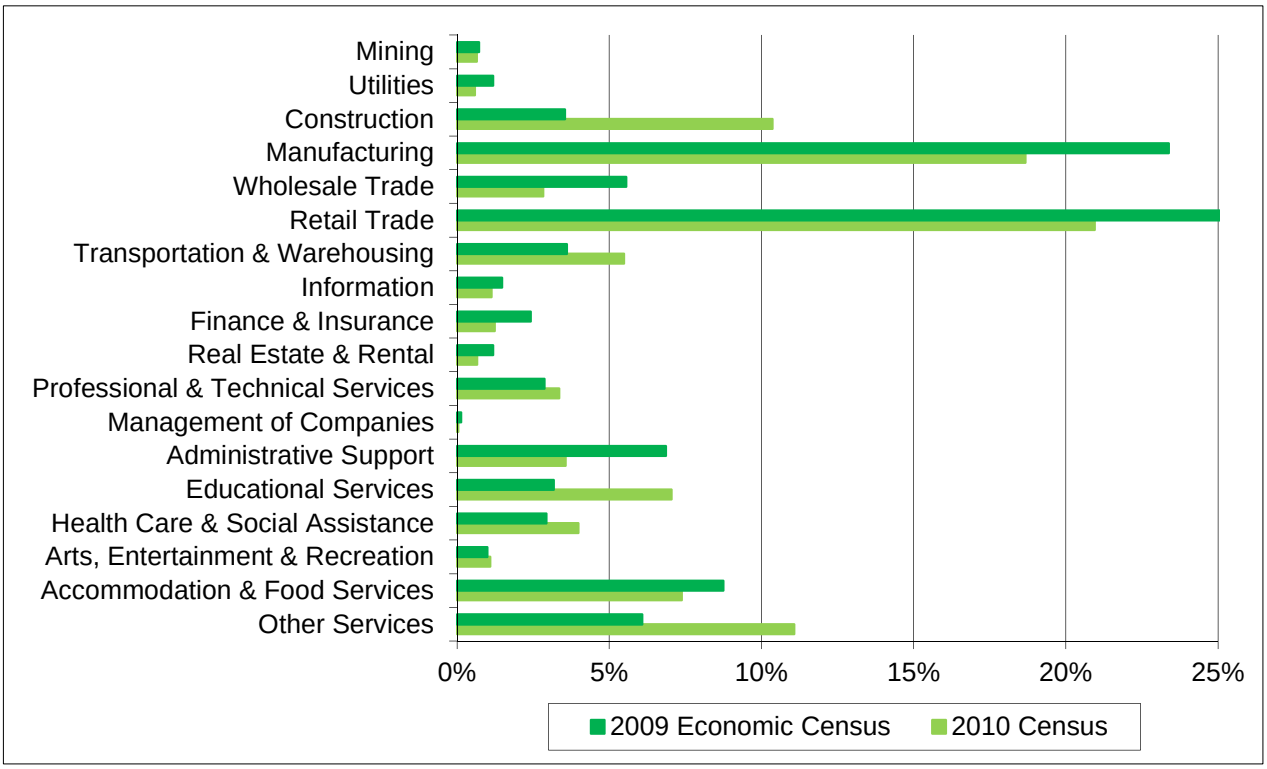
Source: U.S. Department of Commerce, Bureau of Economic Analysis.

remaining difference of 4.2 million workers between the economic census and the wage and salary figure from the 2010 census is due to the difference in year, as the estimated total number of workers rose less than 500,000 between 2009 and 2010.

The difference in the number of wage and salary workers identified in the 2009 economic census relative to the 2010 census varies widely by grouping of economic sectors. Compared to the 2010 census figure for wage and salary workers, the economic census figure for services was less than 70 percent as much, but the figure for trade was 40 percent higher. Differences in the sectoral mix after omitting the agriculture and government sectors are shown in Chart 23; the 2010 census data are based on all workers.[12]

The composition of the Mexican economy, excluding the agriculture and government sectors, is considerably different based on employment from the economic census from that measured by value added, as displayed in Chart 24. Many of the differences follow the U.S. relationship, which is largely caused by some economic activities being much more labor intensive than others. However, the value added share was higher in México, but lower in the United States, than the employment share in the construction, transportation and warehousing, educational services, and management of companies sectors. The opposite was the case in the manufacturing

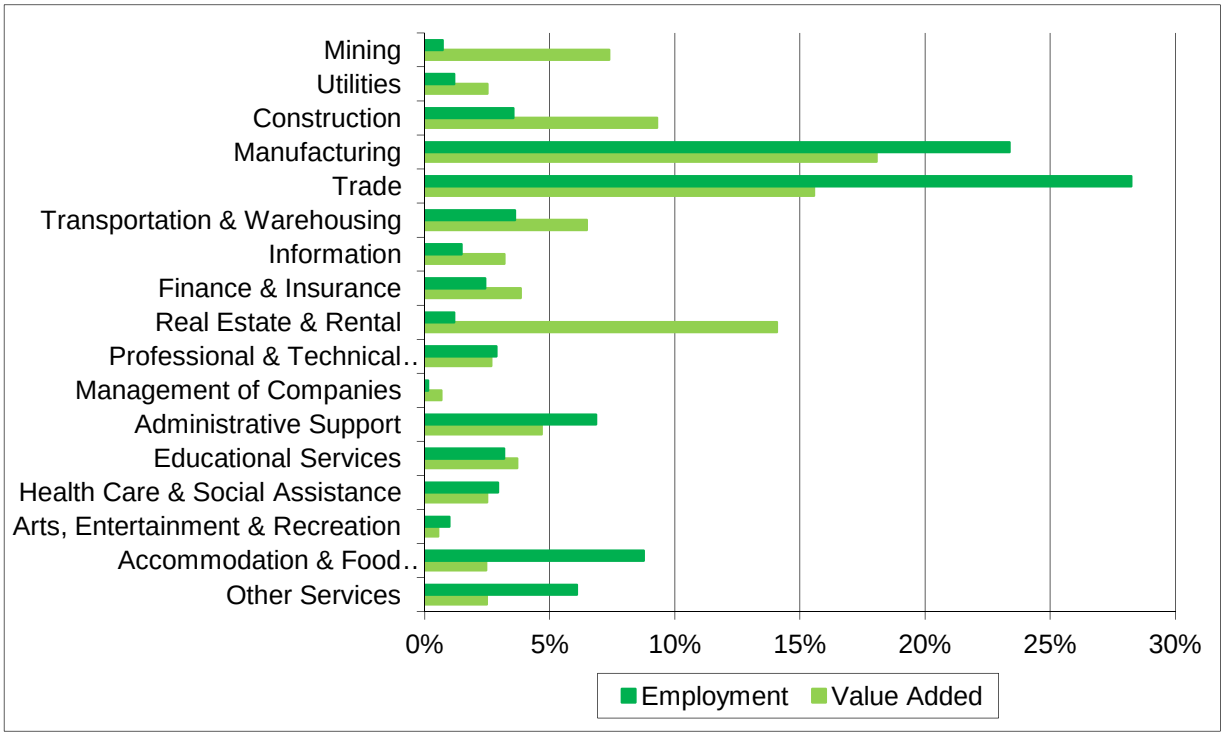
CHART 23
COMPARISON OF SECTORAL SHARES OF EMPLOYMENT IN MÉXICO



Source: Instituto Nacional de Estadística y Geografía.

[12] The 2010 census data for wage and salary workers is provided only for five broad sectoral groupings, not by sector.

CHART 24
COMPARISON OF SECTORAL SHARES OF VALUE ADDED AND EMPLOYMENT IN MÉXICO, 2009



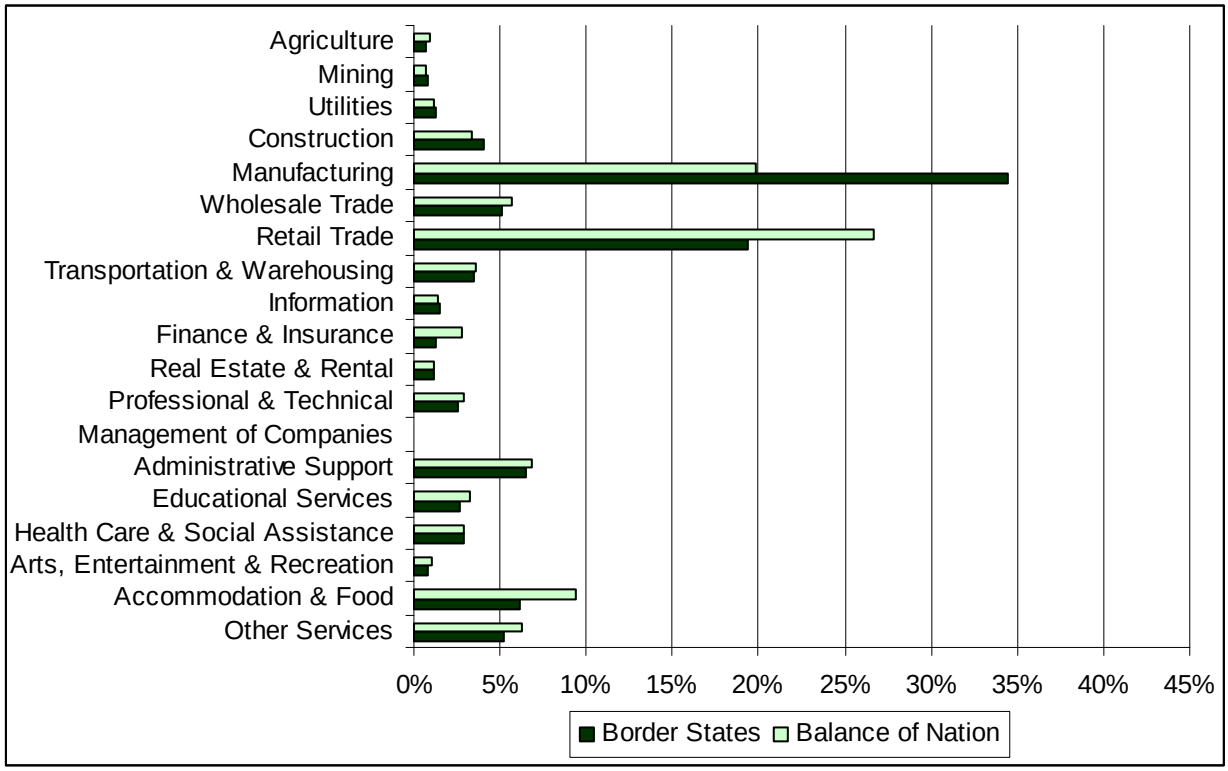
Source: Instituto Nacional de Estadística y Geografía.

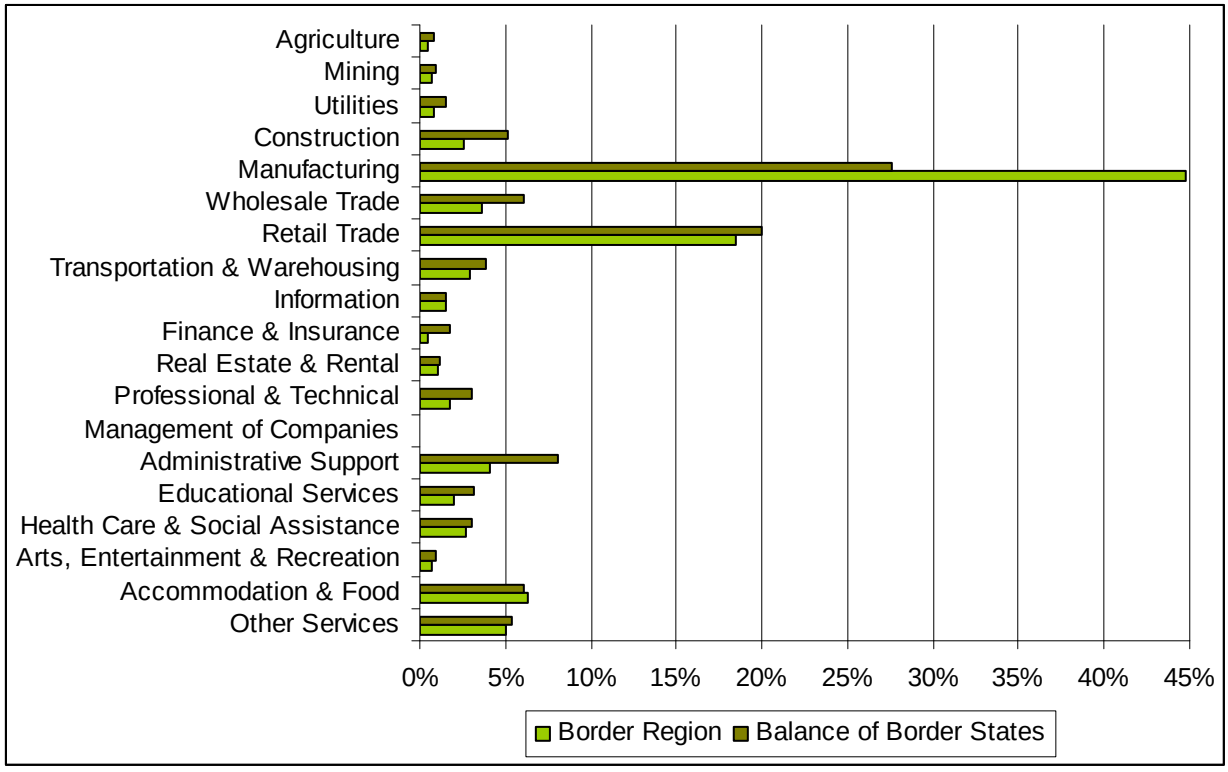
sector, with the GDP share higher in the United States but the value added share substantially less in México relative to the employment share. While data irregularities reduce the strength of any conclusion, this relationship suggests that manufacturing activities in México tend to be manpower intensive and lower wage relative to those in the United States.

Based on employment from the 2009 economic census, the manufacturing sectoral share in the border states of México (34.5 percent) was substantially higher than in the balance of the country (19.8 percent). This was offset by lesser shares in the border states in most of the other sectors, but particularly in retail trade, accommodation and food services, and finance and insurance (see Chart 25).

The border states had a higher share in 12 of the 21 manufacturing subsectors. Very much higher shares were present in the border states in the computer and electronics subsector and in the transportation equipment subsector, with much higher shares in electrical equipment and appliances, fabricated metal products, machinery, and the miscellaneous subsector. The lesser share in the border states in the accommodation and food services and finance and insurance sectors occurred in each of the subsectors, with an especially lesser share in the credit intermediation subsector. In the retail trade sector, the border region share was especially smaller

CHART 25
EMPLOYMENT SECTORAL SHARES WITHIN MÉXICO, 2009





Source: Instituto Nacional de Estadística y Geografía, Censo Económico 2009.

in the food and beverage store subsector, with lesser shares in most of the other subsectors. However, the share was higher in the border region in the department store category.[13]

The manufacturing sector's employment share was highest in Chihuahua at 44 percent, followed by Baja California; it was just less than 30 percent in Nuevo León and Sonora. Relative to the balance of the nation, Chihuahua had very high shares in the computer and electronics subsector and in the transportation equipment subsector, with higher shares in electrical equipment and appliances, and the miscellaneous subsector. The shares in Baja California were especially high in the computer and electronics subsector and the miscellaneous subsector.

Nuevo León had the highest shares of wholesale trade, transportation and warehousing, finance and insurance, and administrative support. Its subsectoral mix within manufacturing also was quite different from the other border states. Otherwise, the employment sectoral mix generally did not vary widely across the six border states.

Differences in the composition of the economy were greater between the border region and the balance of the border states than between the border states and the rest of the country. The manufacturing share in the border region was 45 percent compared to 28 percent in the balance of the border states. To offset, the border region had lesser shares than the balance of the border states (and the national average) in administrative support; construction; wholesale trade; retail trade; professional, scientific and technical services; finance and insurance; educational services; and transportation and warehousing. The lower share in the border region in administrative support and in finance and insurance largely occurred in Nuevo León; Sonora accounted for much of the lesser share in transportation and warehousing. In retail trade, the border region share in Nuevo León was much higher than in the balance of the state; it was lower in the border region in Chihuahua and Tamaulipas. Manufacturing's share was higher in the border region than in the balance of the state particularly in Chihuahua and Tamaulipas; in Nuevo León, the share was the same in the border region and the rest of the state.

In the 11 urban areas, the manufacturing share was 47 percent, ranging from less than 30 percent in San Luis Río Colorado and Nuevo Laredo to 58 percent in Juárez. The retail trade share ranged from 13-to-22 percent except for a 29 percent share in San Luis Río Colorado. The transportation and warehousing share was between 1-and-4 percent except in Nuevo Laredo (14 percent). Administrative support accounted for just over 10 percent of the total employment in Acuña and Nogales, but less than 2 percent in San Luis Río Colorado and Agua Prieta. In the other services sector, the share was 11 percent in San Luis Río Colorado but only 3 percent in Nogales.

México Average Wage

The average wage in México can be calculated from the employment and wages reported from the 2009 economic census. However, the wage data are available only for 11.4 million wage and salary workers, compared to the 20.1 million total employment reported by the economic census and the 42.1 million workers reported by the 2010 census.

[13] The subsectors within retail trade (and wholesale trade) defined in México differ from those used in the United States.

The average wage in México in 2009 was 99,114 pesos. The 102,904 pesos average in the border states was 5.4 percent higher than the 97,669 pesos figure of the balance of the country. The average among the six border states was highest in Nuevo León at 118,432 pesos; it was slightly above the national average in Baja California and Tamaulipas. The average was only 85,707 pesos in Sonora, with the averages in Coahuila and Chihuahua a little below the national average.

The average wage in the border region — nearly the same as the national average — was 6.3 percent less than in the balance of the border states. The average in the border region was far less than in the balance of the state in Nuevo León and also lower in Coahuila, but was higher in Chihuahua, Sonora, and Tamaulipas. The highest average wage across the 11 urban areas was 115,512 pesos in Reynosa, followed by Mexicali. The lowest figures were in San Luis Río Colorado and Agua Prieta, with Acuña and Piedras Negras also well below average.

By sector, the average wage in México ranged widely, from more than 566,000 pesos in the very small management of companies sector and more than 308,000 pesos in mining to less than 60,000 pesos in several sectors, including less than 45,000 pesos in accommodation and food services and just more than 52,000 pesos in the other services and retail trade sectors.

The average wage in the border states was higher than in the balance of the country in 13 of 18 sectors, but was considerably lower in most of the highest-paying sectors. In the border region, the average wage was less than in the balance of the border states in the majority of sectors, including a considerably lower figure in finance and insurance and in information, but the mining figure was nearly double that in the balance of the border states.

Differences in the average wage across geographies and across sectors can be the result of a number of factors, including the average number of hours worked and the occupational mix within a sector.

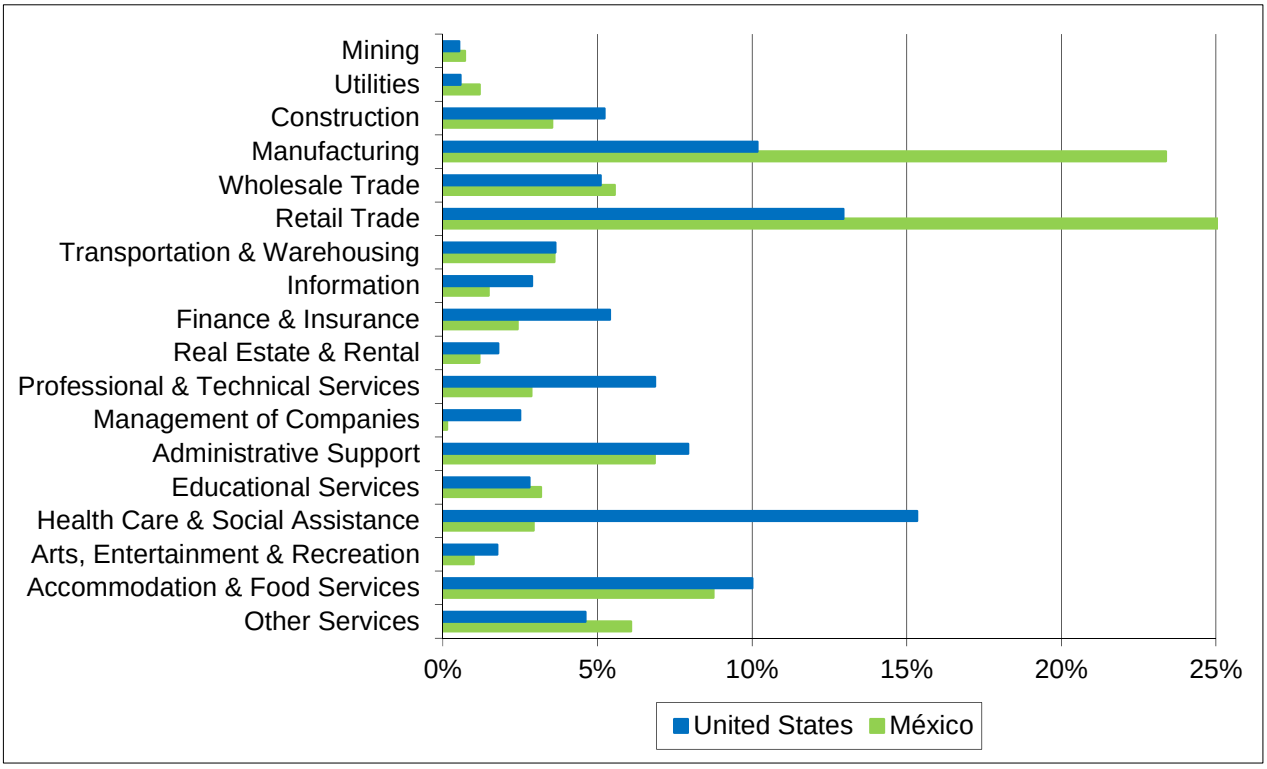
México Versus United States

The sectoral shares from the 2009 economic census in México were compared to those from the 2009 Business Patterns dataset for the United States.[14] The employment sectoral mix was very different between the two countries, as seen in Chart 26. The shares in México were much higher in manufacturing and retail trade; the share in the other services sector also was higher. In contrast, the shares in México were lower in many sectors, with a very large difference in health care and social assistance and large differences in finance and insurance and in professional, scientific and technical services. Other sectors with lesser shares in México included construction, information, management of companies, administrative support, and accommodation and food services.

In the manufacturing sector, the share was higher in México in every subsector except machinery; the largest differences were in the food and apparel subsectors. The retail trade

[14] The Business Patterns dataset was selected for the comparison because it also excludes the government sector and most of the agriculture sector. However, some inconsistencies in coverage exist across the two datasets.

CHART 26
COMPARISON OF SECTORAL SHARES OF EMPLOYMENT IN MÉXICO AND THE UNITED STATES, 2009



Sources: Instituto Nacional de Estadística y Geografía (Censo Económico 2009) and U.S. Department of Commerce, Census Bureau, Business Patterns 2009.

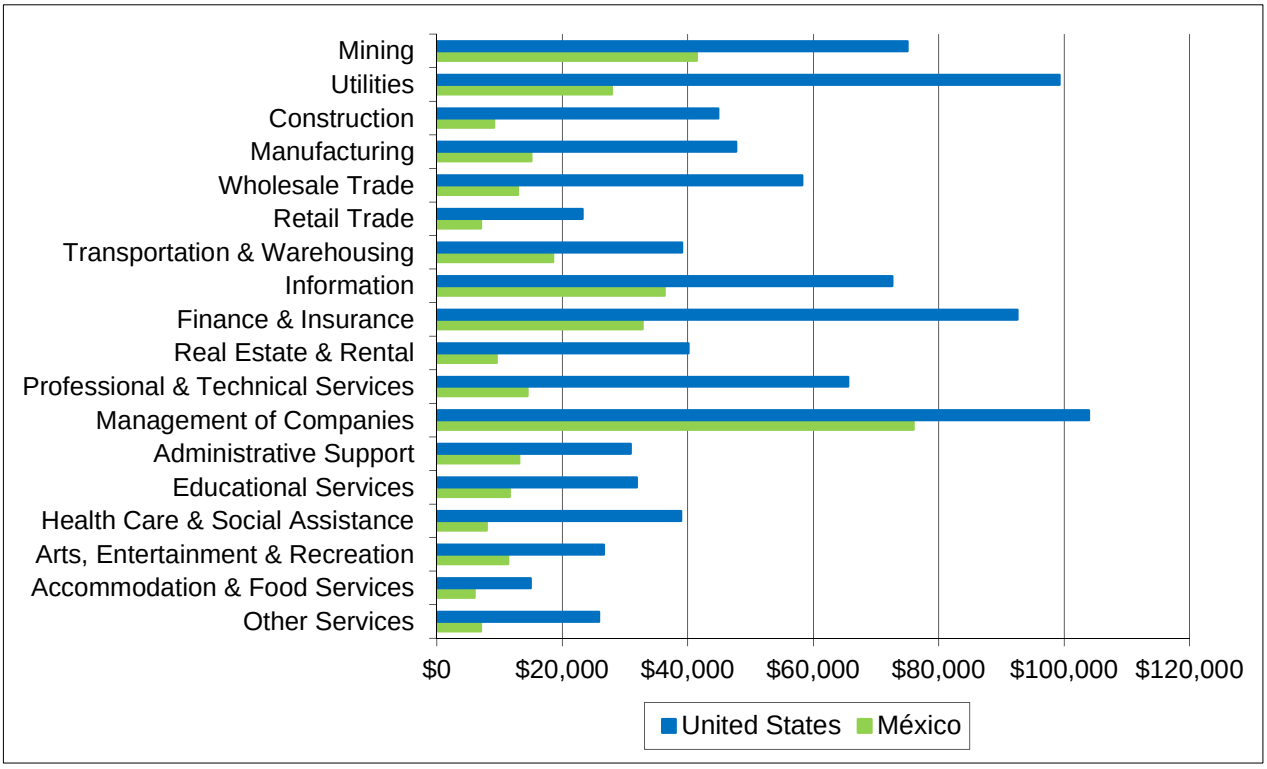
subsectors cannot be directly compared across the two countries; the higher share in México in other services was mostly in the repair and maintenance subsector. In the sectors with a lower share in México, every subsector except accommodation had a lesser share in México.

The average wage in México was divided by the 2009 purchasing power parity for actual individual consumption (7.448) to compare to the average wage in the United States. Overall, the average for México was 31 percent of the U.S. figure (69 percent less). The ratio was nearly the same when comparing the border states and the balance of the country, but the margin of difference was a little less in the border region, with the Mexican figure 36 percent of the U.S. figure.

Among the 11 urban areas, the average wage on the Mexican side of the border relative to the average on the U.S. side was highest in Reynosa-McAllen at 65 percent; the ratio exceeded 50 percent in each of the other urban areas in Texas and in Mexicali-Calexico. In contrast, the ratio was between 30-and-32 percent in Tijuana-San Diego, San Luis Río Colorado-Yuma, and Agua Prieta-Douglas.

The average wage by sector comparison between México and the United States also varied considerably (see Chart 27). The figure in México exceeded 40 percent of the U.S. figure in the

CHART 27
COMPARISON OF THE AVERAGE WAGE BY SECTOR
IN MÉXICO AND THE UNITED STATES, 2009



Note: the average wage in México is adjusted for purchasing power parity (PPP).

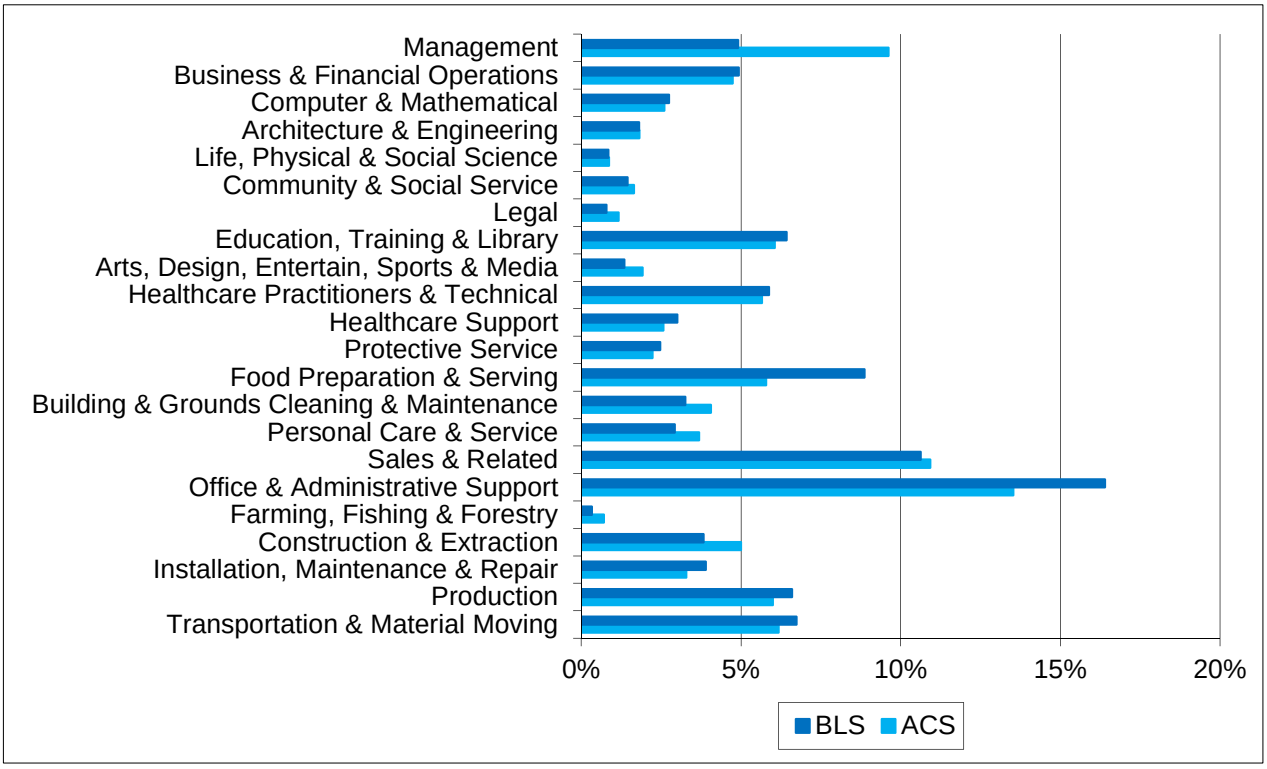
Sources: Instituto Nacional de Estadística y Geografía (Censo Económico 2009) and U.S. Department of Commerce, Census Bureau, Business Patterns 2009.

management of companies, information, mining, transportation, and finance and insurance sectors, but the ratio was less than 20 percent in professional, scientific and technical services; construction; and health care and social assistance.

Employment by Occupational Group

Employment by occupational group data are not available for México except for the summary data produced from the decennial census that was discussed in Volume II. In the United States, detailed data are available annually from the BLS. The differences in the occupational mix between the ACS and BLS that are displayed in Chart 28 are larger than can be explained by the conceptual differences that exist between the BLS occupation data and the ACS data. This suggests that either respondents to the ACS do not answer the two occupation-related questions accurately or that the coding by the Census Bureau of their responses to the Standard Occupational Classification introduces errors. In particular, the share in management occupations is much higher in the ACS.

CHART 28
COMPARISON OF OCCUPATIONAL GROUP SHARES OF EMPLOYMENT IN THE UNITED STATES, 2012



Sources: U.S. Department of Labor, Bureau of Labor Statistics (BLS), Occupational Employment Statistics, and U.S. Department of Commerce, Census Bureau (2012 American Community Survey: ACS).

Average Wage

The BLS reports both the mean and median wage by occupational group. Wages are expressed hourly and annually, with the annual figures equal to the hourly wage times 2,080 hours. Thus, differences in the number of hours worked that can distort the average wage by sector do not contribute to variations in the average wage by occupational group. The mean wage ($45,790 nationally in 2012) was 32 percent higher than the median ($34,750). For geographic areas defined for this report, such as the four border states as a whole, only the mean wage can be calculated and thus is emphasized in this analysis.

The overall average wage in the border states in 2012 ($48,037) was 4.9 percent above the national average and 6.3 percent higher than the figure in the balance of the nation. Despite the figure for the border states being above the national average, the mean of the nine border metros that were defined prior to 2013 ($43,955) was 4 percent below the national average.

After adjusting for the cost of living, the overall average wage in the border states was 0.5 percent higher than the national average while the figure in the balance of the nation was nearly equal to the national average; the average wage in the border metros was 5.6 percent below average. The cost-of-living adjustment narrows the differences across the states and metro areas,

substantially lowering the figure for California and San Diego and raising the figure for the other border states and metro areas, as seen in Table 4.

The employment distribution by occupational group also has an effect on the overall average wage. Adjusting for the job mix but not for the cost of living, the average wage relative to the unadjusted figure was a little lower in the border states, marginally higher in the balance of the nation, and a little higher for the border metros.

After adjusting for both living costs and the occupational mix, the overall average wages in the border states and in the balance of the nation were nearly equal to the national average. The adjusted mean in the border metros was 4.9 percent below the national average, a slightly larger differential than the unadjusted figure. Thus, factors other than the occupational mix and cost of living depress wages in the border metros.

After adjustment for the cost of living and the job mix, California's average wage was only 1.2 percent higher than the national average, while the figure in each of the other border states was between 1-and-5 percent below the national average. Among the nine metro areas in the border region, only El Centro had a figure above the national average — considerably higher than its unadjusted figure. The adjusted average wage was 6.2 percent below average in the San Diego area, compared to 10.9 percent above average on an unadjusted basis. The adjusted mean also was about 6 percent below average in Tucson and Las Cruces but was from 9-to-11 percent

TABLE 4
OVERALL AVERAGE WAGE WITHIN THE UNITED STATES
EXPRESSED RELATIVE TO THE NATIONAL AVERAGE, 2012

		After Adjustment for		
	Unadjusted	**Cost of Living**	**Employment Mix**	**Cost of Living and Job Mix**
U.S. Excluding Border States	-1.3%	0.0%	-1.1%	0.2%
Four Border States	4.9	0.5	4.0	-0.3
Arizona	-4.0	-3.0	-5.0	-4.1
California	14.3	3.3	12.0	1.2
New Mexico	-9.5	-4.5	-9.6	-4.6
Texas	-4.7	-2.1	-3.9	-1.3
Nine Border Metro Areas	-4.0	-5.6	-3.3	-4.9
San Diego	10.9	-3.0	7.2	-6.2
El Centro	-11.8	-4.9	-1.8	5.8
Yuma	-22.0	-18.1	-14.8	-10.6
Tucson	-7.1	-3.9	-9.0	-5.9
Las Cruces	-14.7	-7.6	-13.5	-6.3
El Paso	-22.4	-14.9	-17.4	-9.4
Laredo	-23.4	-16.9	-16.1	-9.0
McAllen	-28.2	-17.8	-20.9	-9.4
Brownsville	-29.9	-20.1	-21.6	-10.7

Sources: U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics (average wage and occupational mix) and U.S. Department of Commerce, Bureau of Economic Analysis (cost of living).

below average in the other metros — though not nearly as far below average as the unadjusted figure.

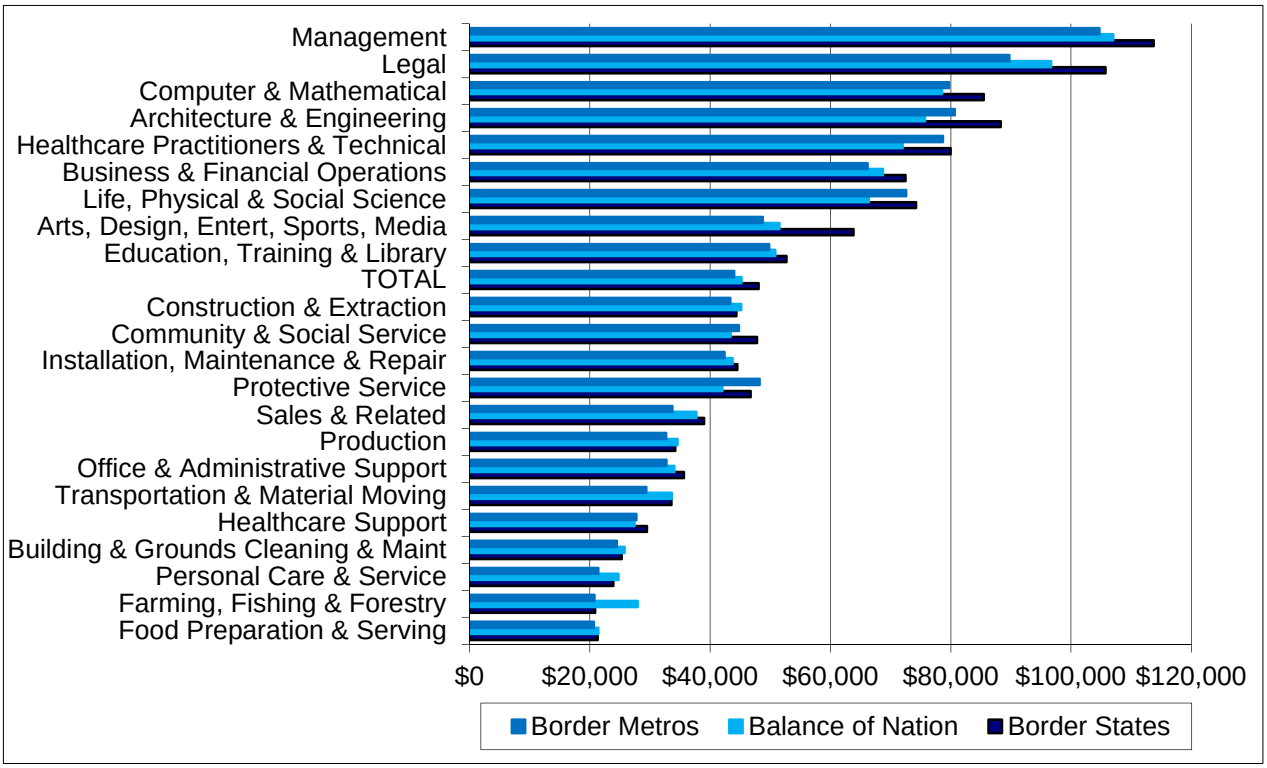
By occupational group, the average wage varied widely, as seen in Chart 29, in which the occupational groups are listed in the order of the national average wage. The average in the management group was five times higher than in the food preparation and serving group.

After adjusting for the cost of living, the average wage in the border states was similar to or higher than in the rest of the nation in each of the eight highest-paying occupational groups, particularly in the architecture and engineering group and the arts, design, entertainment, sports, and media (ADESM) group. In contrast, the average wage was lower in the border states than in the balance of the nation in all but one of the other groups, especially in the farming, fishing and forestry group. The cost-of-living-adjusted average in the border metros was in excess of 5 percent less than in the border states overall, but the metro figure was higher in some groups, particularly protective services. The border metro figure was especially far below the border state average in the legal, transportation and material moving, sales, and ADESM groups.

Employment Mix

The employment mix by occupational group in 2012 differed between the border states and the balance of the nation. The border states had somewhat higher shares in several of the higher-

CHART 29
MEAN WAGE BY OCCUPATIONAL GROUP WITHIN THE UNITED STATES, 2012



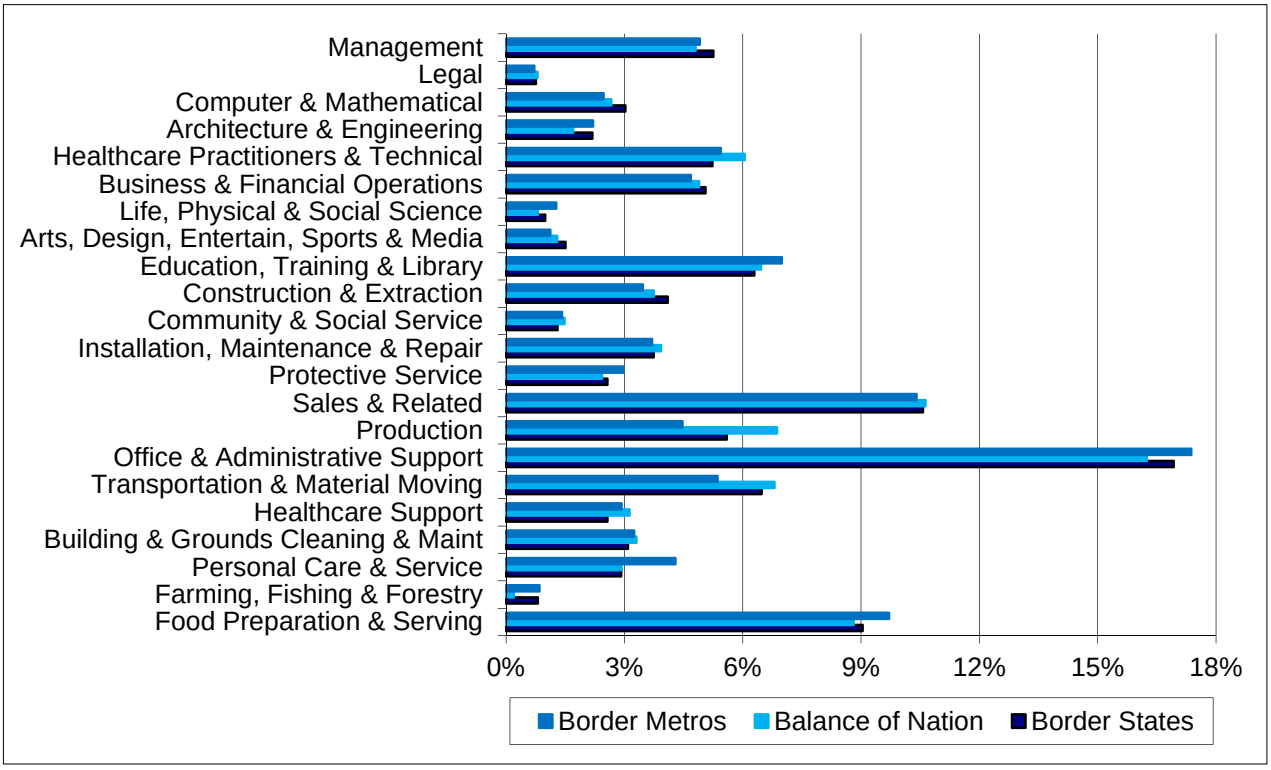
Source: U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics.

wage occupational groups, including management, business and financial, computer and mathematical, architecture and engineering, and sciences. However, shares also were higher in the lower-paying groups of administrative support, farming, and construction and extraction.

Lower shares in the border states than in the rest of the nation were present in the low-paying production group, the low-wage health care support group, and the high-wage healthcare practitioners group. The shares are shown in Chart 30, with the occupational groups listed in order from the highest paying to the lowest paying in the United States.

In the nine border metros defined before 2013, the occupational mix relative to the border states varied more than did the mix between the border states and the balance of the nation. Relative to the border states, the border metros had considerably higher shares in two of the lowest-paying groups — personal care and food preparation and serving — and in the mid-wage educational group. The border metros also had somewhat higher shares in several mid-to-low-paying groups, such as administrative support. Shares were much lower in two low-paying groups — production and transportation and material moving — and somewhat lower in the construction and extraction group and in the high-paying management, business and financial, and computer and mathematical groups.

CHART 30
EMPLOYMENT BY OCCUPATIONAL GROUP
WITHIN THE UNITED STATES EXPRESSED AS SHARES OF THE TOTAL, 2012



Source: U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics.

Relative to the nation, the border metros had much lower shares in production and transportation and material moving and a somewhat lesser share in healthcare practitioners. Shares were higher in several of the low-paying service groups but also were somewhat higher in the high-paying architecture and engineering and sciences groups and in the mid-wage educational group.

Employment-to-Population Ratio

The annual employment-to-population (E-P) ratio compares total employment to total population. Thus, an area with a disproportionate number of children and/or elderly could have a relatively low E-P ratio even if workforce participation among the working-age population is high. Like the dependency ratio, the E-P ratio measures the burden of the working population to support the entire population and is an indicator of overall well-being.

United States

Based on the BEA's measure of total employment and the Census Bureau's estimate of total population, the employment-to-population ratio in the United States in 2012 was 57.2. The figure in the border states was lower at 55.2, compared to 57.8 in the balance of the country. The E-P ratio varied across the border states from 51.0 in Arizona to 58.0 in Texas (see Chart 31).

The E-P ratio in 2011 was only 50.4 in the border region, compared to 54.5 in the balance of the border states. The border region figure was substantially less than in the balance of the state in New Mexico and Texas and somewhat lower in Arizona, but the E-P ratio in California was higher in the border region than in the rest of the state. The E-P ratio in the border region was between 43 and 46 in Arizona, New Mexico, and Texas, but was 57 in California; the figure in the San Diego urban area was 58. The ratio was substantially lower in each of the other 10 urban areas of the border region, ranging from 40 in Calexico, Yuma, and McAllen to 49 in Del Rio and 48 in Tucson. For the 11 urban areas taken together, the E-P ratio was 50.4, the same as in the entire border region.

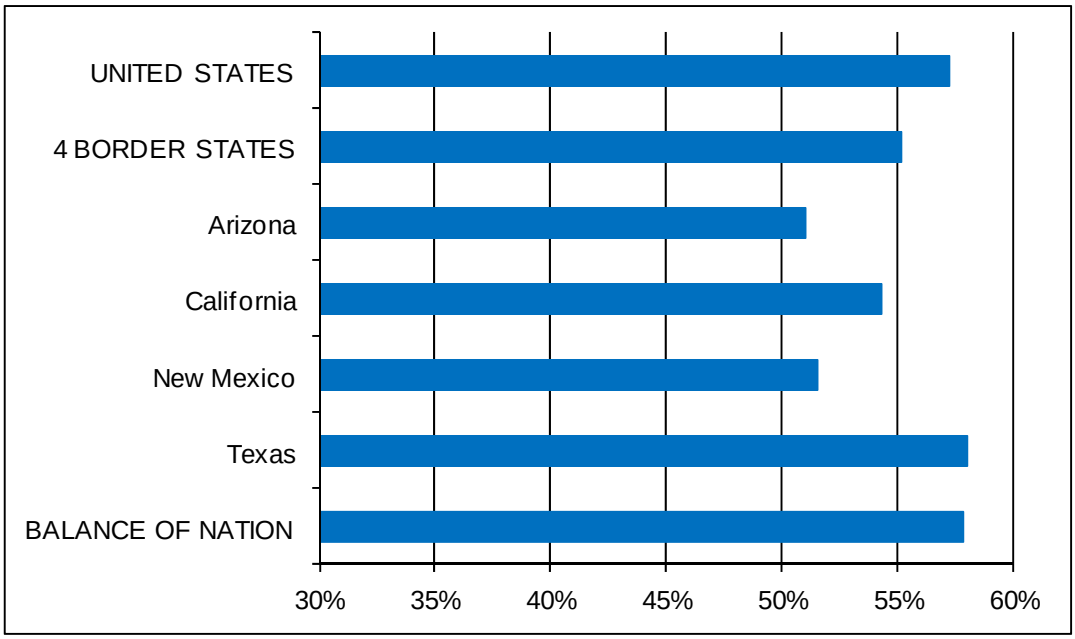
The employment-to-population ratio has increased over time, though it temporarily declines during economic recessions. In the last recession, the E-P ratio dropped in three consecutive years (2008 through 2010), by a total of more than 4 percentage points in the border states and by nearly 4 in the balance of the country.

In 1969, the ratio in the border states matched that in the rest of the country, but since then the ratio has increased by 10.0 percentage points in the border states and 12.6 points in the balance of the country. The border states as a whole experienced a greater gain during the 1970s, but has lagged behind the rest of the nation since then. Gains in New Mexico and Texas have generally matched those of the nonborder states over time, but Arizona and California have experienced lesser gains than the rest of the nation since 1979.

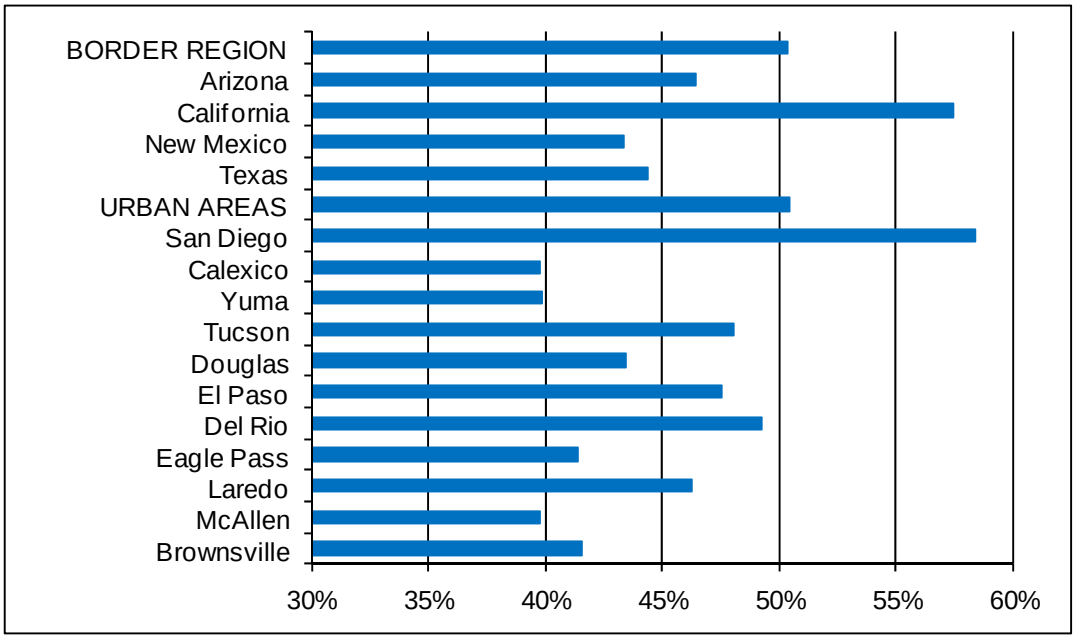
In 1969, the border region's E-P ratio was 2 points lower than the national average and the balance of the border states, but the margin grew to 6 points versus the national average and 4 points versus the balance of the border states in 2011. During the 1970s, the border region's E-P ratio rose considerably less than in the balance of the border states and less than in the rest of the country. Since then, gains have been higher than in the border states but less than in the rest of the country. Arizona, California, and Texas have registered increases in the border region's E-P

CHART 31
EMPLOYMENT-TO-POPULATION RATIO WITHIN THE UNITED STATES

2012



2011



Source: U.S. Department of Commerce, Bureau of Economic Analysis and Census Bureau.

ratio since 1979, with the E-P ratio in California's border counties experiencing a gain much greater than in the rest of the state. In contrast, the E-P ratio in New Mexico's border region fell over this period, compared to a sizable gain elsewhere in the state.

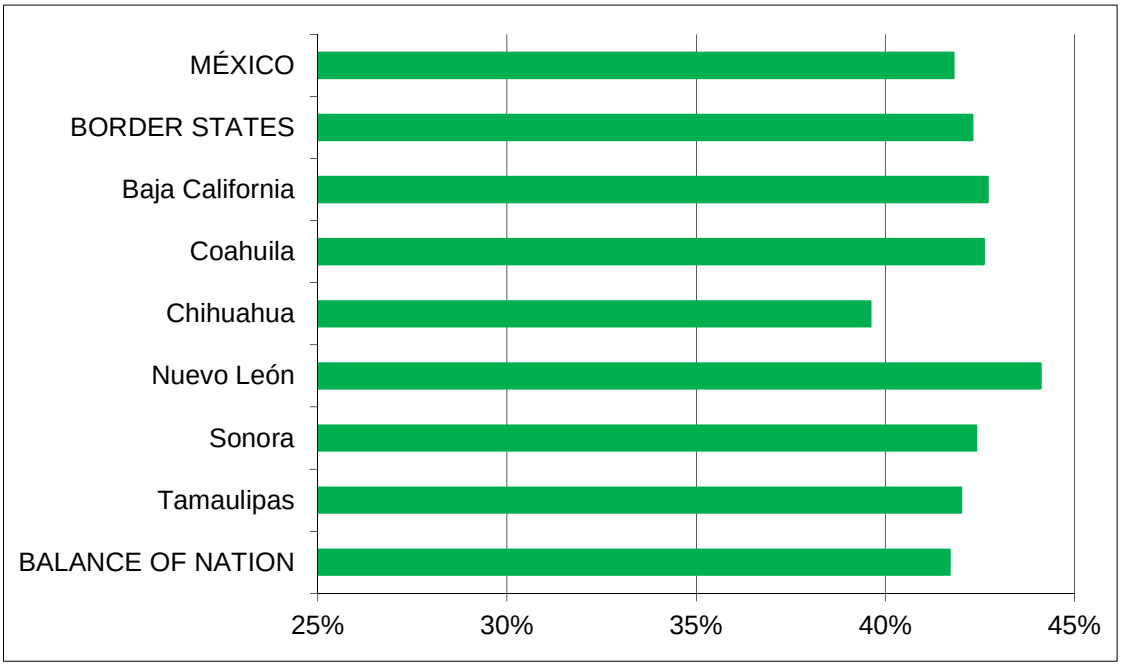
Two of the 11 urban areas in the border region — Eagle Pass and Laredo — matched or exceeded the national increase in the E-P ratio from 1969 through 2011, and the gains in McAllen and San Diego were not far behind. In contrast, the E-P ratio *fell* considerably in Calexico and Yuma and dropped slightly in Douglas. Each of the urban areas in Texas had a larger increase in the E-P ratio from 1989 through 2011 than the national average.

México

Based on the ENOE, the employment-to-population ratio in México was 41.8 in 2013. Except for a slight dip during the 2009 recession and no change in 2013, the E-P has gradually climbed since 2005, with a gain of 2.2 percentage points over the eight years.

The E-P ratio in the border states of México was 42.3 in 2013, a little higher than the 41.7 figure in the balance of the country. The E-P ratio was lowest in Chihuahua and highest in Nuevo León (see Chart 32). Between 2005 and 2013, the E-P ratio rose a little less in the border states than in the balance of the nation. While four of the border states experienced a moderate increase from 2005 to 2013, the figure hardly changed in Chihuahua and a large gain was registered in Coahuila.

CHART 32
EMPLOYMENT-TO-POPULATION RATIO WITHIN MÉXICO, 2013



Source: Instituto Nacional de Estadística y Geografía, ENOE.

The employment-to-population ratio was considerably lower in México (41.8 percent) than in the United States (57.2 percent) in 2012. The higher proportion of children in México and the lower workforce participation rate among women account for the difference. The differential was not as wide when comparing the border states of each country (13 percentage points) than when comparing the balance of each nation (16 percentage points). The highest E-P ratio among the Mexican border states in 2012 — 44.4 in Nuevo León — was less than the lowest ratio among the U.S. border states, 51.0 in Arizona. The gap between the two countries narrowed between 2005 and 2012, as the E-P ratio rose 2.4 percentage points in México but fell 1.2 points in the United States.

Job Quality

The mix of jobs in a geographic area can be evaluated using either employment by sector or employment by occupation datasets. Since the overall job quality measured by occupation can be substantially different from that measured by sector for any geographic area, a complete picture is obtained by combining the job quality calculated on each measure.

The calculation of occupational job quality is made by summing over the 22 occupational groups the product of *the difference in the occupational group's employment share between the nation and the subnational area* multiplied by *the ratio of the occupational group's average wage to the overall average wage, as measured at the national level*. Thus, job quality is expressed relative to the national average. The calculation is comparable using sectoral or subsectoral data. An above-average employment share in a high-wage occupational group or sector and a below-average share in a low-wage group or sector have positive effects on the job quality. A below-average employment share in a high-wage occupational group or sector and an above-average share in a low-wage group or sector have negative effects on the job quality.

United States

Because of the large quantity of undisclosed data at more detailed levels of disaggregation at subnational levels, job quality has been calculated at the occupational group and sector or subsector levels.[15] Job quality by occupational group was calculated for the border states and border metropolitan areas using the May 2012 occupational data from the BLS. Only a few values had to be imputed.

Job quality by sector — excluding the agriculture and government sectors — was measured for border states, and metro areas and urban areas in the border region using the Census Bureau's 2011 Business Patterns data. A small number of imputations were needed in each of the metro areas, with substantially more needed in the micropolitan areas that make up part of some of the urban areas. The imputations were guided by the employment range that is published if the employment figure is withheld.

A separate calculation of job quality for states was made using 2012 BEA data by subsector (or sector if no subsectoral data are produced), with all 20 sectors included. Rather than impute data, subsectors were combined in the limited number of cases where data were withheld by state.

[15] If the data were available, the job quality measure would be more accurate calculated by occupation and industry.

The various measures of job quality in the United States are compared in Table 5. At the broadest geographic levels, the results are consistent across the three measures, with the four border states as a whole having a slightly better-than-average job quality while the balance of the nation was very slightly below the national average. This consistency, however, does not extend to the state level. While occupational job quality was a little above average in Arizona and below average in Texas, the opposite was true of sectoral/subsectoral job quality. Considering both occupational and sectoral/subsectoral job quality, overall job quality was above average in

TABLE 5
JOB QUALITY WITHIN THE UNITED STATES
EXPRESSED RELATIVE TO THE NATIONAL AVERAGE

	Total*	Occupational Groups	Sectors**	Subsectors
U.S. Excluding Border States	-0.4	-0.2	-0.2	-0.2
Four Border States	1.4	0.8	0.6	0.9
Arizona	-1.9	1.1	-3.0	-1.6
California	2.9	2.1	0.8	0.3
New Mexico	-6.3	0.1	-6.4	-2.0
Texas	0.7	-0.8	1.5	2.5
Nine Border Metro Areas	-6.6	-0.8	-5.9	
San Diego	2.2	3.4	-1.2	
El Centro	-20.9	-10.1	-12.0	
Yuma	-22.6	-8.4	-15.5	
Tucson	-7.7	2.1	-9.6	
Las Cruces	-9.9	1.4	-11.1	
El Paso	-15.4	-6.0	-9.9	
Laredo	-21.6	-8.7	-14.2	
McAllen	-20.5	-9.3	-12.4	
Brownsville	-23.3	-10.6	-14.2	
Eleven Border Urban Areas			-6.1	
San Diego			-1.2	
Calexico			-12.0	
Yuma			-15.5	
Tucson			-9.7	
Douglas			-8.2	
El Paso			-10.1	
Del Rio			-17.2	
Eagle Pass			-18.7	
Laredo			-14.2	
McAllen			-12.4	
Brownsville			-14.1	

* Total of the occupational groups and sectors, calculated multiplicatively based on unrounded figures
** Excluding the agriculture and government sectors

Sources: U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics (2012 occupational groups); U.S. Department of Commerce, Census Bureau, Business Patterns (2011 sectors); and U.S. Department of Commerce, Bureau of Economic Analysis (2012 subsectors).

California, a little above average in Texas, a little below average in Arizona, and below average in New Mexico.

The job quality of the metro areas in the border region taken as a whole was slightly below the national average based on occupational groups but substantially below average based on sectors. Considering both the occupational and sectoral mixes, only San Diego, the most populous metro area, had above-average job quality. Tucson, the second-most populous metro, ranked a distant second. Overall job quality in six of the nine metro areas was at least 15 percent below average.

The sectoral figures for the urban areas were similar to those of the metro areas where a comparison could be made. Del Rio and Eagle Pass, the two least populous urban areas, had the weakest job quality. Compared to the border states, sectoral job quality in the border region, as measured by metro areas and by urban areas, was substantially lower. The shortfall in the border region was not nearly as great based on occupational groups.

The largest contributor to the slightly above-average occupational group job quality in the four border states was the management occupational group, the highest-paid group nationally, but this group was a negative factor in Texas. In Arizona and California, an above-average share in the management group was by far the largest factor in explaining their above-average occupational group job quality. Lesser contributors in the border states were the high-paying computer and mathematical, and architecture and engineering groups, and the low-paying production group. The largest negative factor was the low share in the high-paying health practitioners group.

In all of the border metro areas, a below-average share of the low-wage production occupational group was a positive factor on occupational job quality; a low share in the low-wage transportation and material moving occupational group was a positive factor in most of the metros. Significant negative factors varied with geography. In most of the metro areas in Texas, a high employment share in the very low-paying personal care occupational group was a major negative factor. A large share in farming was a very large negative factor in El Centro and Yuma. Low shares in the high-paid groups of management, business and financial, computer and mathematics, and architecture and engineering were negative factors in most of the metro areas, but San Diego had an above-average share in each of these groups.

The largest contributor to the slightly above-average sectoral job quality in the four border states taken as a whole was the high-paying professional, scientific and technical services sector, but this was primarily a result of the high share in California — this sector was a negative factor in Arizona and Texas. Lesser contributors in the border states were the high-paying information sector (entirely due to the high share in California) and the high-paying mining sector, which had high shares in New Mexico and Texas. The largest negative factor was the low share in the high-paying finance and insurance sector, though this was a large positive factor in Arizona. Tourism boosted the employment shares in the very low-paying accommodation and food services sector, with large negative effects in Arizona and New Mexico.

In each of the border region's metro areas, below-average shares in the high-wage finance and insurance and management of companies sectors were significant negative factors on job quality. A high share in the low-wage accommodation and food services sector was a negative factor in

all metros, a low share in the high-wage professional, scientific and technical services sector was a significant negative in seven metro areas, and an above-average share in the low-wage retail trade sector was a negative factor except in San Diego. The most common positive factors were below-average shares in the low-wage sectors of other services and educational services.

Using the BEA data at the subsectoral level, high shares in the high-paying computer and electronics manufacturing subsector and in mining related to oil and gas were the primary causes of the somewhat above-average job quality in the four border states taken as a whole. The electronics subsector was a positive factor in each of the border states, but especially in Arizona and California. Oil and gas mining was a major contributor to job quality in New Mexico and Texas, but had a negative effect in Arizona and California. The high-paying professional, scientific and technical services sector was another positive in the border states (in California and New Mexico), but this was offset by a low share in the high-paying management of companies sector (in each border state). None of the other subsectors were a significant negative.

México

Only the sectoral job quality can be measured for México. Calculations were made using the 2009 economic census data, which excludes most of agriculture and the government sector.

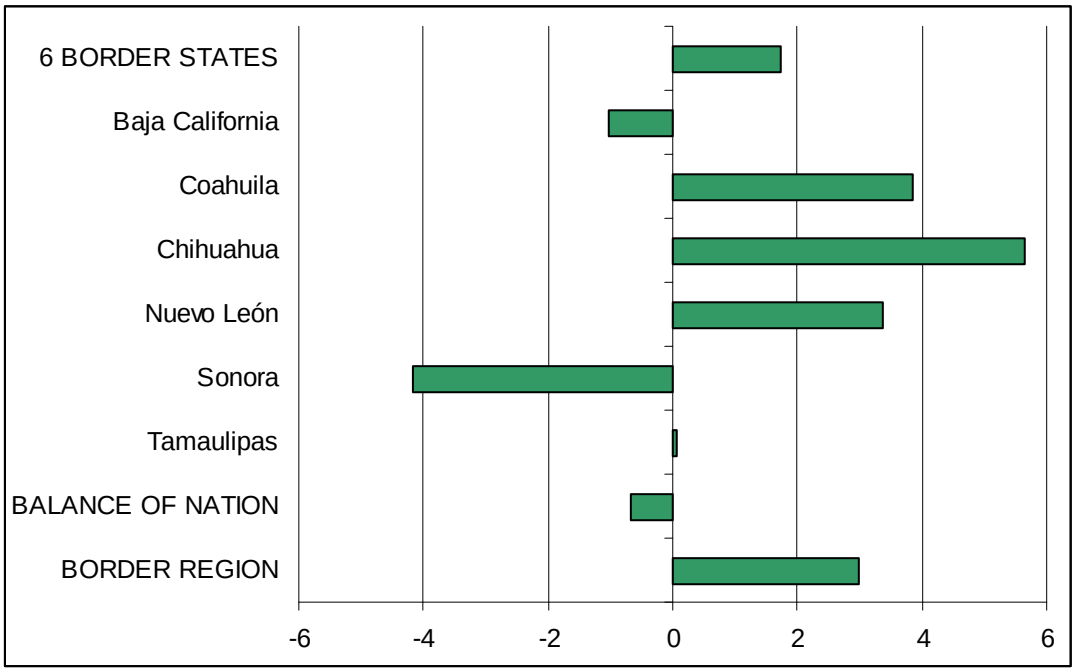
Sectoral job quality in the border states in 2009 was calculated to be 1.7 percent higher than the national average, compared to job quality 0.7 below average in the balance of the nation. The higher value in the border states resulted from lesser employment shares in the low-paying retail trade and accommodation and food services sectors and a higher share in the somewhat-above-average-paying manufacturing sector, partially offset by a lower share in the high-paying finance and insurance sector.

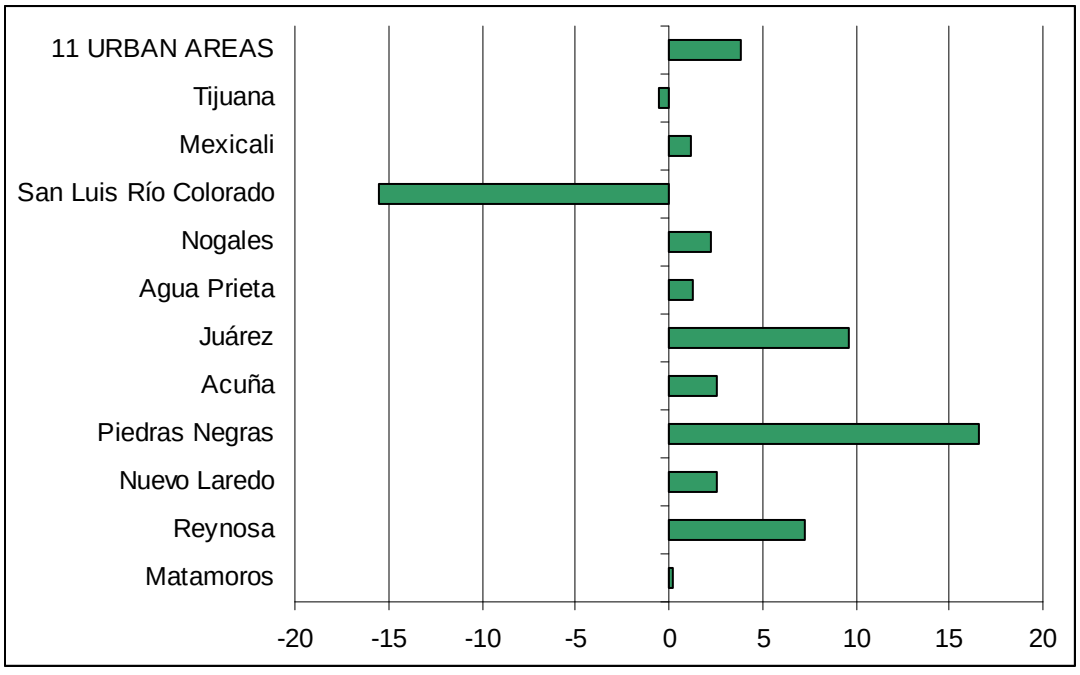
Job quality was strong (at least 3.4) in Coahuila, Chihuahua, and Nuevo León and average in Tamaulipas, but was below average in Baja California (-1.0) and Sonora (-4.2). The low value in Sonora primarily resulted from the relatively large employment shares in the low-paying agriculture and retail trade sectors and the low share in manufacturing. Low shares in the high-paying mining and information sectors reduced the job quality in Baja California. The relatively high job quality in Coahuila mostly resulted from a high share in mining, in Chihuahua from high shares in manufacturing and information, and in Nuevo León from a high share in finance and insurance.

Job quality was higher in the border region (3.0) than in the balance of the border states (0.8), largely due to the high share in manufacturing, with a lesser share in the low-paying construction sector also contributing. Job quality was higher in the border region than in the balance of the border states in Coahuila, Chihuahua, Sonora, and Tamaulipas, but lower in Nuevo León. The reasons for the differing values between the border region and the balance of the border states varied by state. The sectors that varied the most geographically were mining, utilities, construction, manufacturing, retail trade, and information.

Job quality was 3.9 in the 11 urban areas taken a whole, but ranged widely (see Chart 33). It was highest in Piedras Negras at 16.6, entirely due to the very high share of employment in the high-paying mining sector. Juárez (9.6) also was considerably above average, due to high shares in the

CHART 33
SECTORAL JOB QUALITY WITHIN MÉXICO
EXPRESSED RELATIVE TO THE NATIONAL AVERAGE, 2009





Source: Instituto Nacional de Estadística y Geografía (Censo Económico 2009).

high-paying information and manufacturing sectors. Mining contributed to Reynosa's high job quality (7.3). In contrast, job quality was far below average at -15.5 in San Luis Río Colorado, with multiple sectors — including agriculture, manufacturing, and retail trade — causing the low value. The figure was barely negative in populous Tijuana.

Unemployment Rate

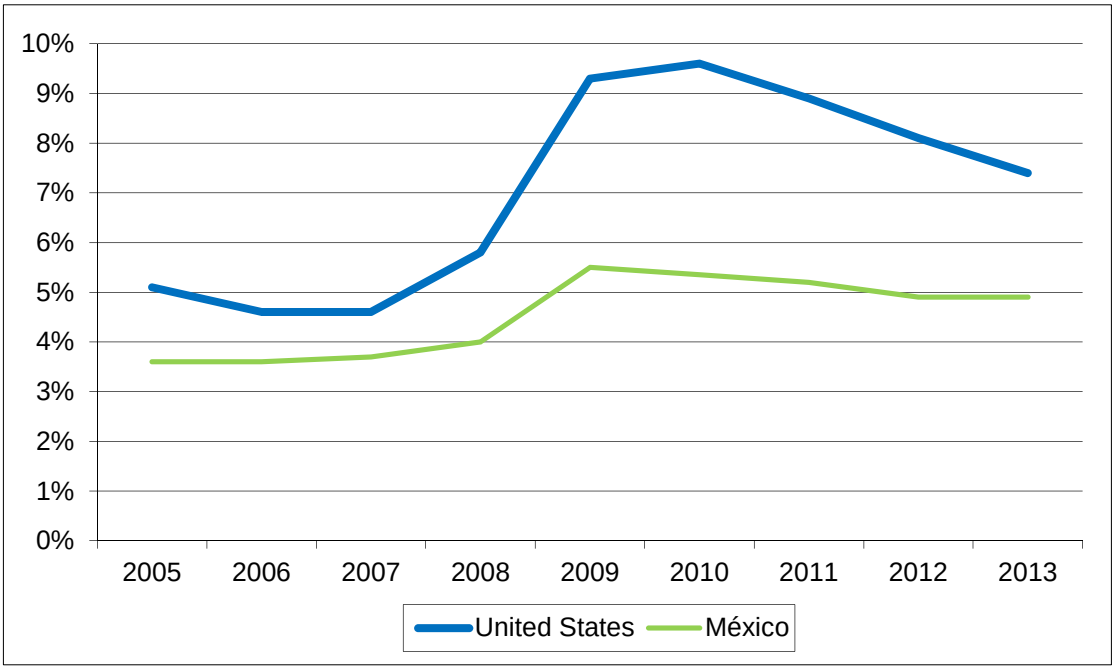
The U.S. unemployment rate has been highly cyclical, falling from a high point of 6.0 percent in 2003 to a low of 4.6 percent in 2006 and 2007, then shooting up to 9.6 percent in 2010. The unemployment rate has gradually dropped since 2010, reaching 7.4 percent in 2013. The unemployment rate in the border states was only slightly higher than the rate in the balance of the states in the mid-2000s, but the border state rate was at least 1 percentage point higher in each year from 2010 through 2012.[16] Preliminary figures for 2013 indicate the differential was down to 0.4 percent. California's rate has consistently been the highest of the four border states and higher than the U.S. average. Since 2008, the unemployment rates in New Mexico and Texas have been considerably lower than those in Arizona and California.

The unemployment rate in México rose from 3.6 percent in the mid-2000s to a high of 5.5 percent in 2009. The rate has dropped modestly since then to 4.9 percent in 2013. As in the United States, the unemployment rate in the border states was slightly higher than the rate in the balance of the states in the mid-2000s, but the border state rate was at least 1.3 percentage points higher in each year from 2009 through 2013. The unemployment rates have not varied much across the border states in recent years; the 2013 rate was between 5.5 percent and 6.0 percent, except for a figure of 6.7 percent in Tamaulipas. Between 2005 and 2013, the unemployment rate increased substantially in Baja California and Chihuahua but rose relatively little in Coahuila and Nuevo León.

The unemployment rate in the United States has been higher than in México, with the difference considerably larger since 2009 than in the mid-2000s (see Chart 34). The increase in the rate between 2005 and 2013 was comparable in the border states of the United States and México and in the balance of the United States. The rate in the balance of México did not rise much during the recession. The 2013 rates in Arizona and California were considerably higher than in the other border states; the rates in New Mexico and Texas were similar to the high end of the Mexican border states.

[16] Since considerable sampling error is present by state, the unemployment rates for the border states need to be used with caution.

CHART 34
ANNUAL UNEMPLOYMENT RATES IN THE UNITED STATES AND MÉXICO, 2005 THROUGH 2013



Sources: Instituto Nacional de Estadística y Geografía (México) and U.S. Department of Labor, Bureau of Labor Statistics (United States).

ECONOMIC BASE STUDY

An economic base study incorporates two important concepts:

- The importance of an economic activity in the local economy relative to its significance in the national economy — an activity of unusually large size has "excess" activity.
- The proportion of an activity's goods and services that are sold to customers outside the local area (county/municipio or state) — goods and services sold to outside customers are alternatively called "tradable," "export" and "basic." (The definition of "export" in this situation applies to any sale to a customer from outside the local area and is not limited to international exports.)

An activity can be tradable but not have an excess or can have an excess but not be tradable. The most important activities to a local economy are those that are tradable and are of unusually large size. An economic base study identifies the leading economic activities in an area.

The base study is conducted on an industrial basis, utilizing the North American Industry Classification System that is used by the United States and México. The NAICS is organized hierarchically; at the most summarized level are 20 sectors. These are progressively subdivided into subsectors, industry groups, and industries. A base study can be performed at any of these levels of detail, but a study limited to sectors or even subsectors is not detailed enough to determine the precise tradable activities that drive a local economy. As discussed in the following subsection on data sources, serious data limitations, especially in México, restrict the detail at which a base study can be performed.

A base study can be conducted using any aggregate economic measure, such as employment or gross domestic product. GDP is defined as value added expressed in terms of the national currency. While GDP (or another measure expressed in dollars or pesos) tells more about the functioning of an economy, employment typically is used in base studies due to better data availability, particularly at a more detailed NAICS level.

Concepts and Calculations

Location Quotients

An economic base study calculates "location quotients" in order to determine the importance of economic activities in the local economy relative to their significance in the national economy. Traditionally, a base study compares the shares of total economic activity in the local area to those in the nation. A location quotient is calculated by dividing the share in the local area by the national share. For example, if a sector's employment makes up 11 percent of the total employment locally but 10 percent nationally, the location quotient (LQ) is 1.1 (11 divided by 10). If a location quotient is greater than 1, then "excess" — that is, above average — employment exists in that sector in the local area.

The use of shares in an economic base study is problematic if the employment-to-population ratio in the local area is much different than the national average. The employment-to-population ratio varies widely geographically. In areas in which overall per capita employment is considerably less than the national average, location quotients based on sectoral shares present a misleading picture of the concentration of an economic activity in the local economy — an

activity's share of the local economy may be above average but its per capita activity may be below the national average.

Thus, an alternative means of calculating location quotients is to compare per capita economic activity in a local area to the national per capita figure. For example, if a sector's employment per 1,000 residents is 10 locally, but 11 nationally, the location quotient is 0.91 (10 divided by 11). A location quotient less than 1 indicates that economic activity in the local area is less than average and that a "deficit" of employment exists in that activity in the local area.

A location quotient greater than 1 raises the possibility that the local area may specialize in the activity by serving customers from outside the local area to an extent in excess of the national average. However, a local area can have above-average levels of activity without any sales to nonresidents if the purchasing preferences of residents differ from the national norm. For example, an area with a hot climate likely will have above-average sales of air-conditioning units without any sales being made to nonresidents.

A location quotient calculated on a per capita basis reflects various factors in addition to employment. For example, if an area has a large share of children and/or senior citizens, its overall LQ will tend to be low. Similarly, a county in which many of its workers commute to a neighboring county will generally have a low overall LQ since employment is measured by place of work, not place of residence. If a low proportion of the working-age population is working, due to high unemployment or cultural reasons limiting the workforce participation rate, the area will tend to have a low overall LQ. The overall LQ, which cannot be calculated using the sectoral share approach, generally is correlated with other economic measures.

Excess Activity

The location quotient is an important indicator of the economic base, showing the concentration of an economic activity relative to some norm, such as the national per capita average. Location quotients can be directly compared from one place to another. However, the LQ provides only one insight into the size of an economic activity. A base economic activity with a very high LQ may not be as important to an area as one with a much lower LQ if the latter is a much more sizable activity. Thus, including the concept of excess activity in an economic base study is necessary to fully understand the relative importance of various economic activities within a given area.

In an economic base study using employment, the excess employment is calculated as employment minus the result of employment divided by the location quotient. If the location quotient is greater than 1, then excess employment is positive. Excess activity by NAICS category can be compared within a given area, but the differences in total employment from one area to another prevent excess activity from being compared across areas.

Tradable Economic Activities

A "tradable" (alternatively, "base" or "export") economic activity is one in which the good or service produced is sold to customers from outside the local area. In this way, money that would otherwise not be present is imported into the local economy.

Few economic activities sell wholly to customers outside the local area or entirely to local residents, but in some cases, the customers are predominantly one or the other. Classic highly tradable activities include most types of manufacturing, mining, and agriculture — a high percentage of sales are made to customers from outside the local area. Other activities that primarily import money into a region rather than sell to local residents include tourism and some services, such as call centers of a company serving a market area greater than the local area.

A few tradable activities, such as a copper mine, are location specific but most can locate anywhere since their customers are spread out across the country or the globe. In contrast, largely nontradable economic activities are location specific since they sell their goods or services to local customers (who may be companies and/or individuals).

While necessary to the functioning of a local economy, nontradable activities do not import money into the local economy. Their presence in the local area is due to tradable activities that create jobs. In this way, tradable activities "drive" the economy while nontradable activities respond to the growth occurring in tradable activities.

To illustrate the relationship between tradable and nontradable activities, consider the extreme case of a community that is wholly dependent on one tradable activity. Historically in some mining towns, the output of the mine has been the sole tradable product. No one lived in the area until the mine began to hire workers. While the mine was operating, a variety of nontradable activities sprang up to serve those employed at the mine. When the mine closed, the mine's employees left the town and the businesses engaged in nontradable activities immediately lost many of their customers. A community cannot survive only by selling goods and services to each other because "leakages" inevitably occur — local dollars leave the community to purchase goods and services not available locally. Without a means of importing money into the community to offset these leakages, the nontradable businesses in a former mining town eventually shut down, resulting in a ghost town.

If accurate information were available on the tradable share in each industry, it would not be necessary to undertake an economic base study in order to understand the relative importance of the various activities within the economic base. However, reliable data on tradable shares do not exist. Since economic models need such data, estimates of tradable shares are included in such models. However, the level of NAICS detail at which such estimates are made varies by economic model; even more detailed models do not make estimates for all industries. Of more importance than the amount of detail is the quality of the estimates of tradable share. An analysis of two leading models indicates that very little correlation exists in the estimates of tradable share at a subsectoral level. A subjective review of these estimated tradable shares suggests that neither model is consistently superior in the quality of the estimates. For some activities, the estimates from both models appear to be substantially in error.

By sector, it is assumed that agriculture, mining, and manufacturing are predominantly tradable activities. The federal government, especially in the border counties, also is assumed to be largely tradable — taxpayers from around the country are supporting the Border Patrol, operation of the ports of entry, etc. Some of the services sectors, such as health care and social assistance, "other" services, and local government are assumed to be almost entirely nontradable. The other

sectors have varying degrees of tradability, with some activities within a sector largely traded but others largely supporting the local population. In succeeding tables displaying the economic base study results by state at the industry level, the assumed percentage tradable is placed into one of three broad categories.

Data Sources

United States

An economic base study using 2011 data was undertaken for each of the four border states and for each of the 37 border region counties. The county data were combined to create data for the border region and the state data were combined to get four-state totals. The study was made using two sources of employment estimates; for states and metro areas, a third dataset of gross domestic product also was examined. Each of these datasets is based on place of work: a worker is counted at the workplace location, not by their place of residence.

Estimates of total employment — a combination of wage and salary employees and proprietors (those self-employed) — produced by the U.S. Department of Commerce's Bureau of Economic Analysis were examined by state and county; 2011 data are the most recent by county. The advantage of this dataset is its comprehensiveness, including all workers in all sectors. Disadvantages include limited sectoral detail and considerable data withholding, due to the federal government's strict disclosure laws that are intended to ensure the confidentiality of all company data. By state, data are produced for sectors and subsectors, but by county, the data are limited to sectors, except that the agriculture sector is split into two parts and the government sector is divided into four parts. For counties that have a small amount of employment, most sectoral data are withheld, such that it is not possible to calculate the industrial mix of the entire border region from the BEA data.

Estimates of wage and salary employment produced by the U.S. Department of Commerce's Census Bureau in its Business Patterns program also were examined by state and county. Data for 2011 are the latest. The advantage of this dataset is its industrial detail. Disadvantages include being limited to wage and salary workers, employment being expressed as of one date (the week including March 12) instead of an annual average, the exclusion of certain economic activities — including government and most of the agriculture sector — and considerable data withholding. Expressing employment as of one week can distort the figures for activities that are seasonal. For example, those working at snow-skiing facilities will appear in the data while those working at summer jobs will not be included.

Employment from Business Patterns is commonly used in base studies because it is feasible to impute (estimate) the missing (withheld) employment figures — the Census Bureau provides a range for the undisclosed figure (for example, between 250 and 499 employees) and a frequency distribution of the number of establishments by employment size categories are provided.[17]

Even if a sectoral location quotient is considerably below 1, certain activities in that sector may have a LQ substantially above 1. Ideally then, the full industrial detail from Business Patterns is

[17] An establishment is a physical location at which business is conducted. Some companies consist of multiple establishments.

used in a base study. However, given the quantity of undisclosed employment figures, this is a time-consuming task. It was not practical to do the data imputations at the industry level for the 37 border counties. Instead, a full set of estimated values were produced for each of the four border states and for San Diego County, which has far more employment than any other border region county. For the other counties, estimates were generated below the sectoral level only for selected activities. This methodology could result in a significant economic base activity not being identified in a county.

Significant differences exist in the sectoral employment estimates, location quotients, and excess employment calculated from the BEA and Business Patterns datasets. Differences are particularly large in the less populous counties. The differences do not necessarily result from the major conceptual difference in the two datasets: wage and salary employment in the Business Patterns and total employment in the BEA. Large differences may be present even in sectors that have a low proportion of self-employed. The BEA and Business Patterns estimates are derived from different data sources and methodology and expressed as of a different point in time during a year. When significant discrepancies exist, it is not clear which of the two datasets may more accurately reflect the true situation.

The gross domestic product estimates are produced by the BEA for each of the four border states and for the metropolitan areas within those states. Since most of the metro areas in the border region consist of only one county, or one county dominates, it is possible to assign the metro estimates to specific counties. However, since GDP is not produced for all counties, it is not possible to create GDP estimates for the border region. Using the metro data, GDP estimates are available for 10 of the 37 border region counties.

GDP estimates are produced by sector and for subsectors within 13 of the 20 sectors. While preliminary 2012 estimates are available by sector, the latest subsectoral data are for 2011. The location quotients calculated from the GDP dataset are frequently inconsistent with those of one or both of the employment datasets. While data accuracy and methodology may contribute to the differences, inconsistencies between the employment and gross product location quotients should be expected given the conceptual differences between these economic measures. Employment consists of a simple count of the number of jobs; the number of hours worked and the compensation paid are not considered. Some activities are labor intensive, frequently paying low wages. Other activities are capital intensive, using relatively few, but usually well-paid, workers.

México

The economic base study of Mexican states and municipios is substantially limited by data availability. For states, the gross domestic product series is available through 2012 at the sectoral level (though the wholesale trade and retail trade sectors are combined), but limited subsectoral data are available. The GDP series really measures value added.

Employment from the 2010 census of population is available for states and municipios, but this reflects employment by where a worker lives, not by the place of employment. Moreover, the sectoral detail is limited to five categories by state and to four categories for municipios: (1) agriculture (the “primary sector”); (2) mining, utilities, construction, and manufacturing (the “secondary sector”); (3) retail and wholesale trade; and (4) services.

The 2009 economic census presents data by place of work for most sectors. Data are available by subsector for states. However, the economic census counts only employees of companies. Government employees, most agricultural workers, and others who are self-employed are omitted. Nationally, the employment counted in this census is only 48 percent of the total from the 2010 decennial census. This proportion varies across the four categories: 75 percent in trade, 55 percent in the secondary category, 45 percent in the services category, and only 3 percent in agriculture. Due to the conceptual differences between the two employment measures — the much fewer number counted in the economic census and the difference between place of work and place of residence — variations in the base study results are common.

In an attempt to narrow the conceptual differences in employment between the 2010 census and 2009 economic census datasets, agricultural employment was excluded from each dataset in a separate analysis. Since the 2010 census includes government workers and nonagricultural self-employed, its employment count still is much higher than that from the 2009 economic census, which nationally accounts for 54 percent of the 2010 census total. This share is considerably higher in the six border states (63 percent) than in the balance of the nation (52 percent), indicating that a higher proportion of the workforce in the border states is employed at companies, probably due to the disproportionate presence of maquiladoras in the border states. The share is slightly higher in the border region than in the balance of the border states.

The share of 2010 census employment counted in the 2009 economic census varies widely by municipio, from less than 10 percent to about 80 percent (in one case, more than 100 percent). A municipio with a low share could have a relatively high proportion of agricultural workers, nonagricultural self-employed, and/or government workers that are counted in the 2010 census but not in the 2009 economic census. However, the low share also could result from residents of the municipio commuting to another municipio to work. Most of the municipios with low shares have relatively few workers, even as measured by the 2010 census. Small communities often have a limited economic base and limited job opportunities, forcing residents to travel to a more populous area to find a job. The share of the 2010 employment total counted in the 2009 economic census is indeed relatively high in most of the populous areas in the border region.

In the six border states as a whole, the overall location quotient after excluding agriculture is 1.29 from the 2009 economic census, higher than the 1.11 figure from the 2010 census. The LQ from the economic census is higher than that from the decennial census in most of the more populous municipios. However, in most municipios, the LQ from the 2009 economic census is lower than that of the 2010 census, often by a substantial margin.

Economy of the Four U.S. Border States

Combining the four border states into one entity, the overall location quotient is slightly more than 1 based on GDP and slightly less than 1 based on BEA employment and Business Patterns employment, as seen in Chart 35. The overall LQ exceeds 1 in California based on GDP and in Texas based on GDP and BEA employment. The LQs in California and Texas are more than 0.9 on each of the three measures, while the figures for Arizona and New Mexico range from about 0.8 to 0.9.

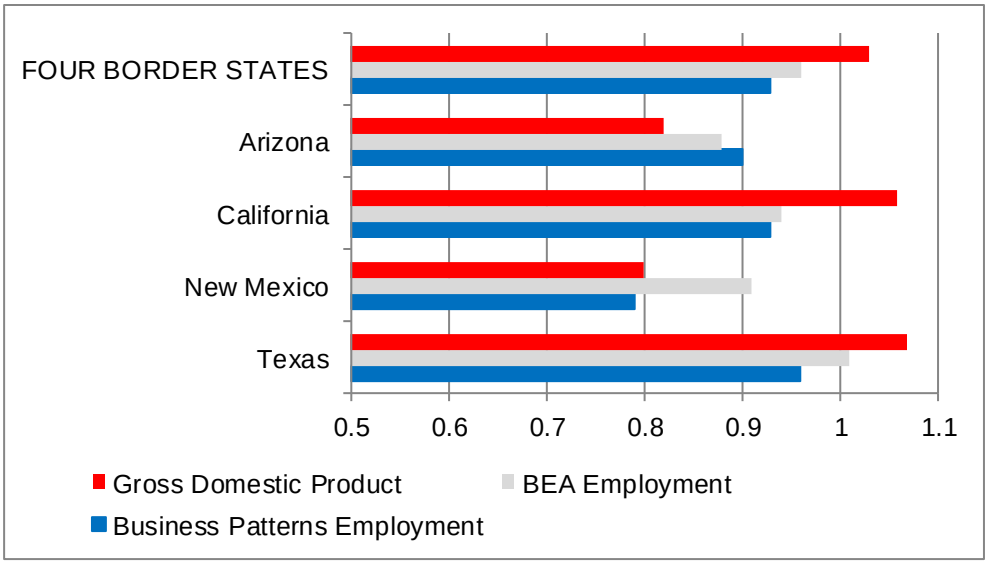
As seen in Table 6, the location quotient of the four border states as a whole is highest in the mining sector, ranging from 1.6 to 2.3 across the three datasets. The LQ is next highest in the information sector at 1.1 to 1.2 from each of the three datasets. The LQ slightly exceeds 1 from each dataset for the agriculture; wholesale trade; real estate and rental; professional, scientific and technical services; and administrative support and waste management sectors. The sectors with the lowest LQs are finance and insurance, management of companies, educational services, and health care and social assistance.

Excess activity is greatest in the mining sector in two of the datasets and ranks second in the other dataset. Other sectors with significant excesses in each dataset include professional, scientific and technical services; information; and real estate and rental, as seen in Table 7.

Table 8 provides the location quotients for the four border states as a whole and for each individual state for sectors and selected subsectors based on GDP. The GDP in dollars for the four border states taken together is provided so that the relative importance of the sectors and subsectors can be determined. In order to look below the sector or subsector level, the Business Patterns dataset is used. The greatest excess employment in the four border states as a whole is shown in Table 9 at the subsectoral, industry group, and industry levels. Each of the listings in Table 9 has subjectively been classified as having high, moderate, or low tradability.

A summary by sector follows. Unless otherwise noted, the discussion refers to the four border states as a whole. A rough idea of the tradability of each sector is provided, drawn from two econometric models.

CHART 35
OVERALL LOCATION QUOTIENT BY ECONOMIC MEASURE AND U.S. BORDER STATE, 2011



Source: U.S. Department of Commerce. Gross domestic product and BEA employment are from the Bureau of Economic Analysis; Business Patterns employment is from the Census Bureau.

TABLE 6
LOCATION QUOTIENTS BY SECTOR, FOUR U.S. BORDER STATES AS A WHOLE, 2011

		Border States		Border Region		Balance of States	
	GDP*	Employ-ment**	Employ-ment***	Employ-ment**	Employ-ment***	Employ-ment**	Employ-ment***
TOTAL	1.03	0.96	0.93	0.89	0.80	0.97	0.95
Agriculture	1.09	1.04					
Mining	2.26	1.73	1.58		0.60		1.70
Utilities	1.00	0.99	0.87		0.80		0.87
Construction	1.09	0.99	1.04		0.84		1.06
Manufacturing	1.04	0.85	0.80		0.59		0.83
Wholesale Trade	1.07	1.02	1.05		0.73		1.09
Retail Trade	1.05	0.93	0.91		0.92		0.90
Transportation and Warehousing	1.01	0.94	0.92		0.73		0.95
Information	1.24	1.10	1.10		0.76		1.14
Finance and Insurance	0.79	0.96	0.87		0.63		0.90
Real Estate and Rental	1.07	1.05	1.10		0.95		1.12
Professional, Scientific & Technical Services	1.11	1.07	1.08		0.88		1.10
Management of Companies	0.69	0.76	0.88		0.45		0.93
Administrative Support & Waste Management	1.09	1.03	1.01		0.73		1.04
Educational Services	0.81	0.79	0.78		0.55		0.81
Health Care & Social Assistance	0.90	0.85	0.83		0.89		0.82
Arts, Entertainment and Recreation	1.10	0.99	1.00		0.96		1.00
Accommodation and Food Services	0.96	0.97	0.98		1.00		0.97
Other Services	1.02	0.97	0.89		0.75		0.90
Government	0.96	0.94		1.27		0.90	

Note: a blank indicates that the data are not available

* Gross Domestic Product
** Employment, BEA
*** Employment, Business Patterns

Source: U.S. Department of Commerce. Gross domestic product and BEA employment are from the Bureau of Economic Analysis; Business Patterns employment is from the Census Bureau.

TABLE 7
EXCESS ACTIVITY BY SECTOR, FOUR U.S. BORDER STATES AS A WHOLE, 2011

	GDP*	Employment**	Employment***
TOTAL	$115,351	-1,678,744	-1,767,285
Agriculture	3,596	33,618	
Mining	84,102	240,865	87,144
Utilities	-132	-1,849	-19,819
Construction	10,469	-22,123	46,945
Manufacturing	14,499	-423,689	-500,492
Wholesale Trade	13,336	30,453	61,812
Retail Trade	9,608	-296,338	-317,869
Transportation and Warehousing	1,525	-79,155	-73,022
Information	36,076	71,932	73,129
Finance and Insurance	-54,891	-95,015	-169,786
Real Estate and Rental	29,480	82,420	43,760
Professional, Scientific & Technical Services	29,227	201,582	139,069
Management of Companies	-20,522	-114,979	-82,452
Administrative Support & Waste Management	9,178	84,283	25,475
Educational Services	-7,801	-203,293	-169,316
Health Care & Social Assistance	-27,091	-685,837	-710,706
Arts, Entertainment and Recreation	3,374	-12,975	-2,004
Accommodation and Food Services	-4,145	-84,441	-60,971
Other Services	1,674	-59,772	-137,020
Government	-16,208	-344,430	

Note: a blank indicates that the data are not available

* Gross Domestic Product, in millions
** Employment, BEA
*** Employment, Business Patterns

Source: U.S. Department of Commerce. Gross domestic product and BEA employment are from the Bureau of Economic Analysis; Business Patterns employment is from the Census Bureau.

- Agriculture. One model assesses tradability at about two-thirds, while the other model places the figure as approaching 100 percent. The location quotient is a little more than 1 based on BEA employment and GDP. Excess activity is of modest size. California and New Mexico have LQs greater than 1 based on GDP.
  Mining. Roughly 80-to-90 percent of this sector is an export activity. The LQ is high, ranging from 1.6 to 2.3 across the three datasets. Excess employment and GDP are very large. Excesses are entirely in activities related to oil and gas: drilling wells, extraction, and support of operations. Each of these industries ranks among the leaders in Table 9; they account for three of the top five with high tradability. New Mexico and Texas have high LQs in the oil and gas activities. Other mining, particularly of copper, has high LQs in Arizona and New Mexico.
- Utilities. Approximately 40 percent of this sector is considered to be tradable. The LQ ranges from 0.9 to nearly 1 across the three measures. Based on GDP, the LQ is 1.2 in Texas but less than 0.9 in California and New Mexico.

TABLE 8
GROSS DOMESTIC PRODUCT FOR SECTORS AND SELECTED SUBSECTORS, U.S. BORDER STATES, 2011

		Location Quotients					
	Four Border States*	Arizona	California	New Mexico	Texas	Four Border States	Balance of Nation
TOTAL	$3,565,534	0.82	1.06	0.80	1.07	1.03	0.99
Agriculture	43,616	0.66	1.49	1.29	0.59	1.09	0.97
Mining	150,962	0.88	0.55	3.34	5.03	2.26	0.62
Oil and gas extraction	112,049	0.00	0.74	3.56	6.44	2.79	0.46
Mining other than oil and gas	9,569	4.27	0.22	2.32	0.41	0.71	1.09
Support activities for mining	29,343	0.09	0.30	3.69	5.46	2.22	0.63
Utilities	68,579	1.01	0.87	0.80	1.20	1.00	1.00
Construction	132,598	1.08	0.90	0.97	1.38	1.09	0.97
Manufacturing	413,828	0.56	0.93	0.47	1.36	1.04	0.99
Wood products	2,867	0.34	0.51	0.26	0.66	0.54	1.14
Nonmetallic mineral products	5,989	0.72	0.62	0.52	1.09	0.79	1.06
Primary metal	5,463	0.72	0.26	0.05	0.75	0.47	1.16
Fabricated metal product	24,321	0.47	0.73	0.16	1.21	0.86	1.04
Machinery	26,847	0.25	0.54	0.08	1.61	0.88	1.04
Computer and electronic products	88,481	1.47	1.91	2.52	1.35	1.69	0.79
Electrical equipment, appliance, component	5,521	0.28	0.55	0.14	0.54	0.51	1.15
Motor vehicle, body, trailer, and parts	6,862	0.15	0.17	0.13	0.79	0.39	1.18
Other transportation equipment	24,120	1.83	1.05	0.12	1.10	1.11	0.97
Furniture and related products	4,411	0.56	0.74	0.19	0.82	0.74	1.08
Miscellaneous manufacturing	18,179	0.79	1.43	0.21	0.43	0.98	1.01
Food and beverage and tobacco product	33,937	0.35	0.81	0.29	0.61	0.68	1.09
Textile mills and textile product mills	1,573	0.20	0.46	0.18	0.31	0.38	1.19
Apparel and leather and allied products	4,052	0.10	2.51	0.13	0.45	1.49	0.85
Paper	5,405	0.22	0.45	0.21	0.51	0.44	1.17
Printing and related support activities	4,831	0.54	0.73	0.14	0.63	0.66	1.10
Petroleum and coal products	80,414	0.08	1.23	0.07	3.94	2.06	0.68
Chemicals	61,121	0.23	0.77	0.12	1.73	1.05	0.99
Plastics and rubber products	9,436	0.27	0.55	0.10	0.79	0.60	1.12

(continued)

TABLE 8 (continued)
GROSS DOMESTIC PRODUCT FOR SECTORS AND SELECTED SUBSECTORS, U.S. BORDER STATES, 2011

		Location Quotients					
	Four Border States*	Arizona	California	New Mexico	Texas	Four Border States	Balance of Nation
Wholesale Trade	$208,233	0.80	1.04	0.45	1.23	1.07	0.98
Retail Trade	218,494	1.03	1.07	0.82	1.03	1.05	0.99
Transportation and Warehousing	104,827	0.83	0.88	0.76	1.28	1.01	1.00
Truck Transportation	26,874	0.69	0.78	0.86	1.20	0.92	1.02
Warehousing and Storage	9,485	0.58	0.96	0.27	0.96	0.90	1.03
Information	185,211	0.49	1.69	0.49	0.84	1.24	0.93
Publishing industries, except Internet	31,604	0.38	1.32	0.23	0.60	0.95	1.02
Motion picture and sound recording industries	35,423	0.16	4.56	0.84	0.34	2.55	0.53
Broadcasting and telecommunications	90,655	0.56	1.25	0.61	1.00	1.08	0.98
Information and data processing services	27,529	0.59	2.15	0.13	0.95	1.53	0.84
Finance and Insurance	212,481	0.89	0.75	0.35	0.88	0.79	1.06
Real Estate and Rental	467,404	0.92	1.31	0.80	0.76	1.07	0.98
Professional, Scientific and Technical Services	294,788	0.66	1.30	0.86	0.96	1.11	0.97
Management of Companies	44,891	0.47	0.84	0.24	0.55	0.69	1.09
Administrative Support & Waste Management	112,688	1.14	1.08	0.77	1.11	1.09	0.97
Educational Services	32,383	0.84	0.98	0.43	0.57	0.81	1.06
Health Care & Social Assistance	235,107	0.92	0.92	0.80	0.86	0.90	1.03
Arts, Entertainment and Recreation	37,502	0.80	1.48	0.46	0.66	1.10	0.97
Accommodation and Food Services	98,047	0.98	0.99	0.88	0.91	0.96	1.01
Accommodation	22,794	1.03	0.91	0.77	0.67	0.83	1.05
Food Services	75,252	0.96	1.03	0.92	1.00	1.01	1.00
Other Services	86,993	0.77	1.07	0.82	1.02	1.02	0.99
Government	416,905	0.86	0.97	1.23	0.95	0.96	1.01
Federal Civilian	61,630	0.89	0.71	1.62	0.80	0.78	1.06
Military	45,927	0.75	0.91	1.32	1.14	0.99	1.00
State and Local	309,347	0.87	1.05	1.12	0.96	1.00	1.00

* Gross Domestic Product, in millions

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

- Construction. Approximately one-fifth of this sector is an export activity, as most construction activity is in response to growth generated by base activities. The LQ ranges from marginally less than 1 to 1.1 across the three datasets. Most of the excess is in the heavy and civil engineering construction subsector, primarily in the utility system industry group, especially in the oil and gas pipeline industry. The specialty trade contractors subsector also provides an excess. Based on GDP, the sectoral LQ is 1.4 in Texas but less than 1 in California and New Mexico.
- Manufacturing. About two-thirds of this sector is an export activity. The LQ is only 0.8 based on the two employment measures but is slightly more than 1 based on GDP. Several subsectors have an excess based on either GDP or employment. The GDP and employment excesses are large in the computer and electronic product subsector, particularly in the broadcast and wireless communications equipment, semiconductors and related devices, and search and detection instruments industries, though other industries provide small excesses. Petroleum and coal products (mostly refineries) provide excesses in both GDP and employment. Other manufacturing activities with excesses include apparel (based on GDP and employment), beverages (only based on employment, consisting mostly of wineries), chemicals (based only on GDP, though basic chemicals, such as petrochemicals, and plastic materials and resins also have excesses based on employment), and aerospace (based on both GDP and employment, consisting of aircraft and space vehicles). The aerospace industry group ranks third among those with high tradability. The oil and gas field machinery and equipment industry ranks among the top 10 with high tradability. Among the four border states, only Texas has a sectoral LQ greater than 1. The LQ is quite low in Arizona and New Mexico, but even in these states, the figure exceeds 1 in one or two of the 19 subsectors. The LQ exceeds 1 in five subsectors in California and in seven in Texas. The figure is considerably above 1 in each of the four states in the computer and electronic products subsector.
- Wholesale trade. Roughly 20-to-35 percent of wholesale trade is considered to be an export activity. The LQ is slightly more than 1 based on each dataset. The excess is primarily in the durable goods subsector. It is substantial in the electrical and electronic goods industry group. Smaller excesses are present in several subsectors, particularly apparel, and professional and commercial equipment (largely in the computer, peripheral, and software industry). The sectoral LQ based on GDP is greater than 1 in California and Texas but quite low in Arizona and New Mexico.
- Retail trade. Estimates of tradability range from less than 10 percent to 30 percent. The LQ is slightly more than 1 based on GDP and 0.9 based on the two employment datasets. The Business Patterns dataset indicates that small excesses are present at electronics and appliance stores and at clothing stores. Based on GDP, the three states other than New Mexico have a sectoral LQ between 1 and 1.1.
- Transportation and warehousing. Estimates of tradability range from 35-to-65 percent. The LQ is marginally more than 1 based on GDP and 0.9 based on the two employment datasets. Based on GDP and employment, small excesses are present in air transportation, pipeline transportation, and freight arrangement. The latter is part of the support subsector that provides a considerable excess, but only partially consists of tradable activities. Only Texas has a sectoral LQ greater than 1, with a figure of 1.2 in the trucking subsector.

TABLE 9
GREATEST EXCESS EMPLOYMENT BY SUBSECTOR, INDUSTRY GROUP, AND INDUSTRY, FOUR U.S. BORDER STATES AS A WHOLE, 2011
Excluding the Agriculture and Government Sectors

NAICS	Title and Tradability*	Location Quotient	Excess Employment
	SUBSECTORS		
541	**Professional, scientific, and technical services**	1.08	139,069
512	**Motion picture and sound recording industries**	2.11	79,643
213	**Support activities for mining**	2.00	76,223
334	**Computer and electronic product manufacturing**	1.37	74,793
423	**Merchant wholesalers, durable goods**	1.10	70,771
237	Heavy and civil engineering construction	1.21	40,506
488	**Support activities for transportation**	1.25	33,708
561	**Administrative and support services**	1.01	31,056
531	Real estate	1.09	30,549
211	**Oil and gas extraction**	2.07	29,340
	INDUSTRY GROUPS		
5412	Accounting, tax preparation, bookkeeping, and payroll services	1.37	112,837
5121	**Motion picture and video industries**	2.17	77,752
2131	**Support activities for mining**	2.00	76,223
4236	**Electrical and electronic goods merchant wholesalers**	1.57	65,048
7222	Limited-service eating places	1.05	42,799
2371	Utility system construction	1.37	39,887
3364	**Aerospace product and parts manufacturing**	1.45	39,048
5413	Architectural, engineering, and related services	1.12	34,647
3344	**Semiconductor and other electronic component manufacturing**	1.52	34,054
5222	**Nondepository credit intermediation**	1.26	31,303
5616	Investigation and security services	1.17	31,236
2111	**Oil and gas extraction**	2.07	29,340
5112	**Software publishers**	1.35	28,892
2383	Building finishing contractors	1.19	26,965
3152	**Cut and sew apparel manufacturing**	2.17	24,514
5417	**Scientific research and development services**	1.15	24,433
3342	**Communications equipment manufacturing**	1.84	22,424
5313	Activities related to real estate	1.14	19,794
5613	Employment services	1.02	18,170
6216	Home health care services	1.06	18,056

(continued)

TABLE 9 (continued)
GREATEST EXCESS EMPLOYMENT BY SUBSECTOR, INDUSTRY GROUP, AND INDUSTRY, FOUR BORDER STATES AS A WHOLE, 2011
Excluding the Agriculture and Government Sectors

NAICS	Title and Tradability*	Location Quotient	Excess Employment
	INDUSTRIES		
541214	Payroll services	2.17	131,132
423690	**Other electronic parts and equipment merchant wholesalers**	1.96	63,906
512110	**Motion picture and video production**	2.98	59,842
213112	**Support activities for oil and gas operations**	2.05	53,368
561320	Temporary help services	1.07	43,212
522292	**Real estate credit**	1.65	33,408
722211	Limited-service restaurants	1.04	31,499
561612	Security guards and patrol services	1.21	29,782
511210	**Software publishers**	1.35	28,992
211111	**Crude petroleum and natural gas extraction**	2.11	27,852
213111	**Drilling oil and gas wells**	2.15	25,108
237120	**Oil and gas pipeline and related structures construction**	1.84	24,790
721110	**Hotels (except casino hotels) and motels**	1.07	23,281
541330	Engineering services	1.11	22,316
334220	**Broadcast and wireless communications equipment**	2.21	21,932
541712	**Research and development in the physical, engineering, and life sciences (except biotechnology)**	1.17	21,524
333132	**Oil and gas field machinery and equipment manufacturing**	3.12	20,636
423430	**Computer and computer peripheral equipment and software merchant wholesalers**	1.39	20,316
334413	**Semiconductor and related device manufacturing**	1.85	19,353
621610	Home health care services	1.06	18,056

*** Bold, shaded**: high proportion of tradable activity;
Bold, not shaded: moderate proportion of tradable activity;
Not bold, not shaded: low proportion of tradable activity

Source: Calculated from U.S. Department of Commerce, Census Bureau, Business Patterns, 2011.

- Information. About 30-to-40 percent of this sector is tradable. The LQ ranges from 1.1 to 1.2 across the three measures. Based on GDP and employment, a significant excess is present in the motion picture and sound recording subsector, which has the highest excess employment among subsectors with high tradability. Most of this is in the motion picture and video production industry. Lesser excesses occur in software publishing, data processing, and Internet services. Based on GDP, only California has a sectoral (or subsectoral) LQ greater than 1. California's figure exceeds 1 in each of the four subsectors.
- Finance and insurance. About 30-to-40 percent of this sector is tradable. The LQ ranges from 0.8 to a little less than 1. A moderate excess is present in the nondepository credit intermediation industry group, largely in the real estate credit industry. A small excess is present in the funds and trusts subsector. Each of the four states has a sectoral LQ less than 0.9 based on GDP.
- Real estate and rental. Estimates of tradability range from 15-to-35 percent. The LQ is close to 1.1 based on each of the datasets. Based on GDP and employment, a large excess is present in the real estate subsector, spread across various activities, including property management. A small excess exists in the rental and leasing subsector, mostly in the industrial and commercial machinery industry group. Based on GDP, only California has a sectoral LQ greater than 1.
- Professional, scientific and technical services. Only 10-to-20 percent of this sector is considered to be tradable. The LQ is 1.1 based on all three datasets. A very large employment excess is present in the accounting, tax preparation, bookkeeping, and payroll services industry group (mostly in the payroll services industry). The excess is moderate in architectural and engineering services (mostly in the engineering services industry) and in scientific research and development — in the biotechnology and other physical, engineering, and life sciences industries. Small excesses are present in other industry groups, including computer system design. Based on GDP, only California has a sectoral LQ greater than 1.
- Management of companies. Estimates of tradability range from 25-to-50 percent. The LQ ranges from 0.7 to 0.9 across the three datasets. Each of the four states has a low LQ based on GDP.
- Administrative support and waste management. Estimates of tradability range from 35-to-50 percent. The LQ is a little more than 1 based on each dataset. The excesses are in the administrative and support services subsector, with the largest employment excesses in the not-basic investigation and security services and employment services industry groups. A smaller excess is present in travel arrangement. Each of the four states except New Mexico has a sectoral LQ of about 1.1 based on GDP.
- Educational services. Approximately one-fifth of this sector is tradable. The LQ is 0.8 based on each of the three datasets. Small excesses are present in some industry groups. None of the four states has a sectoral LQ greater than 1 based on GDP.
- Health care and social assistance. Only one-tenth of this sector is an export activity. The LQ is between 0.8 and 0.9 based on each of the datasets. An excess is not present in any of the four subsectors, but the home health care services industry group and industry appears among the leaders in Table 9. None of the four states has a sectoral LQ greater than 1 based on GDP.

- Arts, entertainment and recreation. Approximately 15-to-25 percent of this sector is an export activity. The LQ is about 1 based on the two employment datasets and 1.1 based on GDP. A small excess based on GDP and employment is present in the grouping that includes performing arts, spectator sports, agents, and independent artists. Amusement parks and gambling also provide small excesses. Based on GDP, the sectoral LQ is nearly 1.5 in California but is 0.8 or less in the other three border states.
- Accommodation and food services. Estimates of tradability range from 10-to-25 percent. The LQ is slightly less than 1 according to each of the three datasets. The limited-service eating places industry group and the hotels and motels industry appear in Table 9. The sectoral LQ is a little below 1 in each of the four states based on GDP
- Other services. Estimates of tradability range from 5-to-20 percent. The LQ ranges from 0.9 based on Business Patterns employment to slightly more than 1 based on GDP. The repair and maintenance subsector provides a small excess. Based on GDP, the sectoral LQ is slightly greater than 1 in California and Texas but is only about 0.8 in Arizona and New Mexico.
- Government. Hardly any of this sector is considered to be an export activity by either model. However, the federal government, both civilian and military, should be considered to be largely an export activity in the border states. At a local level, even some state government can be considered to be export. The overall LQ is a little less than 1. The military LQ is close to 1, but the federal civilian LQ is only 0.8. The state government figure also is 0.8 while the local government LQ equals 1. Based on GDP, only New Mexico has a sectoral LQ of more than 1, with a figure above 1 in each of the subsectors.

Based on the excesses in economic activities with moderate-to-high tradability, a variety of activities are important to the combined economy of the four border states:

- Oil and gas. The most important oil and gas activities are in the mining sector, including drilling wells, extraction, and support of operations. Smaller excesses are present in various other sectors, including the construction of pipelines; transportation via pipeline; the manufacturing activities of refineries, basic chemicals, and oil and gas field machinery and equipment; and the wholesaling of petroleum products. Though primarily in Texas, activities related to oil and gas help drive the New Mexico economy.
- Computers and electronics. A large excess is present in the manufacturing of goods such as semiconductors, communications equipment, and instruments. While most of the manufacturing excess occurs in California, each of the other border states has an excess in certain products. The wholesaling of electrical and electronic goods has a large excess, again mostly in California, but also in Arizona and Texas. Wholesaling of computers and software (California) also contributes. Data processing (mostly in Texas, but also in Arizona and California), Internet services (California), and software publishing (California) in the information sector, and computer systems design (California) in the professional, scientific and technical services sector are related activities with an excess.
- Motion picture and video production. The large excess in this activity is entirely in California.
- Scientific research and development. This activity is important in California and New Mexico.

- Other manufacturing. Aerospace is important in Arizona and California; Texas also has a small excess. Other activities with an excess are centered in California: apparel, beverages (wineries), and medical equipment and supplies.
- Other wholesaling and transportation. The wholesaling of apparel industry group has an excess, due to activity in California. Freight arrangement, in California and Texas, provides an excess.
- Tourism. Small excesses are present in air transportation (in Arizona and Texas), travel arrangement (mostly in Arizona but also in Texas), hotels and motels (California, Arizona and New Mexico) and in some activities in the arts, entertainment and recreation sector (primarily in California).

Economy of the U.S. Border Region Versus the Balance of the Border States

Based on BEA employment, the border region accounts for only 10 percent of the employment in the border states. The share ranges from 8 percent in Texas to 20 percent in Arizona.

Significant differences in the location quotients are present between the border region and the balance of the border states, as seen in Table 6. Based on the BEA employment measure, the overall location quotient in the border region is 0.89, less than the 0.97 figure in the balance of the border states. The LQ in the border region is higher than in the balance of the state in California, but lower in the other three states.

The location quotient in the border region is lower than in the balance of the border states in most sectors, with considerably lower figures in mining, wholesale trade, information, management of companies, and administrative support. The border region LQ is marginally higher in retail trade and health care and social assistance. Government is the only sector with a notably higher LQ in the border region, due to the federal civilian and military subsectors. Thus, the economy in the balance of the border states is more diverse than in the border region, with several sectors having a LQ of at least 1, but the LQs for the federal government subsectors are considerably below 1 in the balance of the border states.

Economy of the U.S. Border Region

The amount of employment varies widely across the four states and 37 counties of the border region. Based on the BEA data, the border region of California accounts for half of the employment in the entire border region; Texas accounts for 30 percent. San Diego County alone accounts for 48 percent of the border region total; the four largest counties account for 79 percent and the top 10 for 94 percent.

In general, populous counties in the border region tend to have an industrial mix not too different from the national average, while lightly populated counties frequently have mixes much different from the national average, generally dependent on some combination of agriculture, mining, and the federal government.

The overall location quotient based on BEA employment is 1 or higher in most border region counties with employment of less than 5,000 but less than 1 in most of the larger counties. For those counties for which GDP is available, the location quotient generally is lower based on GDP

than on BEA employment. San Diego County is a notable exception to each of these two general conclusions.

The border region economy is highly dependent on the federal government, with a location quotient of 3.2 for the military subsector and 1.6 for the federal civilian subsector. The LQ for accommodation and food services is 1, but the figure is below 1 in each of the other sectors. Excess employment in the military subsector is nearly three times as much as in the federal civilian subsector. Local government also provides excess employment in the border region.

The federal government subsectors have high location quotients in the border region of each of the four border states. A number of sectors have a LQ of 1 or more in California's border region, but few sectors have a LQ this high in any of the other three border states' border region.

Government

Government employment is not available from the Business Patterns dataset; the BEA reports employment for four subsectors: federal civilian, military, state, and local. The GDP dataset combines the state and local subsectors.

Only seven border region counties (six of which border México) have a military LQ greater than 1, but the figure is 4.7 or higher in five of these counties. Each of the seven counties is mid-sized or larger based on total employment.

In contrast, the high border region location quotient in the federal civilian subsector results from a high figure in 29 of the 37 border region counties. Ninety-one percent of the 22 counties sharing a border with México have a federal civilian LQ of more than 1, compared to 60 percent of the 15 other border region counties. Of those counties with a federal civilian LQ greater than 1, half have a figure greater than 2.

The larger-than-average number of federal civilian government jobs in most border region counties presumably is largely due to the presence of the Border Patrol; a significant number of Border Patrol employees frequently are present even in counties not directly on the international border. In those counties with border crossings, the operation of the ports of entry is another significant source of federal civilian employment. A large number of federal civilian workers are associated with the operation of a military base, so this is a significant factor in the seven counties with one or more military bases. Federal prisons can be another source of considerable federal civilian employment, but there are only three federal prisons in the border region. National parks, national forests, and Native American reservations also may contribute to the excess of federal civilian employees in some border region counties.

Local government (counties, cities, school districts, and special districts) generally is not considered to be a driving economic activity since so much of the funding comes from local taxpayers. Yet, all of the Texas counties in the border region have a local government location quotient of more than 1, with a median value of 1.6. State government location quotients are not particularly low in these Texas counties, so the high local figure does not appear to result from a shifting of government responsibilities from the state to local level. Only five of the other 10 border region counties have a local government LQ greater than 1, with none above 1.5. The

magnitude of the local government location quotient is negatively correlated with population size and with population density. Thus, the large areal size of many of the border region counties compared to the national norm, combined with the low population in most of these counties, boosts expenses and local government employment on a per capita basis.

Similarly, state government generally is classified as an activity supporting the local population. However, an excess of state government employment in a county may be perceived to be a base activity, particularly if it results from a major facility such as a state university or prison that is disproportionately large in a county. Only nine border region counties have a state government LQ greater than 1, with most of these lightly populated; a state university is the primary cause in three of these counties while a state prison is the main factor in three other counties.

Agriculture, Mining, and Utilities

These are the other sectors in which a number of border region counties have a location quotient of more than 1. Twenty-nine counties, including all of those with employment of less than 20,000, have a location quotient of more than 1 in the farm subsector of agriculture. (The other subcategory for which data are available has been labeled as agriculture support, but it also includes forestry, fishing, hunting, and trapping.) The farm LQ exceeds 2 in almost all of these counties, with LQs of 5 or more common. A few of the more populous counties, most notably Imperial, California and Yuma, Arizona, also have high LQs in agriculture. However, the agriculture LQ for the entire border region is substantially less than 1.

Similarly, the border region LQ is substantially below 1 for mining, though 11 of the 23 counties with less than 20,000 employees, and a few other counties, have a LQ greater than 1, with several of these having a LQ greater than 10. Most of these counties are in Texas, with the mining activity dominated by oil and gas.

About half of the border region counties, but disproportionately those with total employment of less than 15,000, have a LQ greater than 1 in the utilities sector, but the figure for the border region is less than 1. In several counties, the utilities LQ exceeds 2. While the high LQs result from varying activities across the counties, the most common are natural gas distribution and electrical power distribution.

Trade and Transportation and Warehousing

Despite the substantial cross-border traffic that should contribute to wholesale trade, transportation and warehousing, and retail trade businesses located in the border region, the location quotients are not particularly high in these sectors in the border region. Only one border region county has a LQ above 1 in wholesale trade in both of the employment datasets; three others have a LQ above 1 in one of the two datasets. Only four of the 37 border region counties have a transportation and warehousing LQ above 1 based on both datasets; 10 others have such a figure based on one of the two datasets. In retail trade, the LQ exceeds 1 in four counties based on both datasets; nine others have a figure above 1 based on one of the two datasets.

Among the 18 counties with border crossings, five have a transportation and warehousing LQ greater than 1, two have a wholesale trade LQ of at least 1, and three have a retail trade LQ of at least 1.

Looking below the sectoral level, using data from the Business Patterns dataset, three activities within the transportation and warehousing sector are conceptually linked to the border crossings. Yet even at this detailed level, LQs are greater than 1 in a minority of counties with border crossings: four counties in the trucking subsector, four counties in the warehousing subsector, and seven counties in the freight transportation arrangement industry group. At the industry group level within the wholesale trade sector, few cases of LQs greater than 1 exist within the counties with border crossings; the industry groups with such figures vary by county.

In the case of retail trade, further analysis was undertaken. It was hypothesized that the general lack of location quotients greater than 1 despite other evidence of cross-border shopping was a result of the generally low per capita personal income found in the border region. That is, the residents of the county spend less per person than average because of their low incomes, offsetting the sales made to Mexicans crossing the border.

The analysis was conducted on a dataset of those counties in the four border states not in the border region. Data for 2011 were used. A regression was run in which per capita personal income was used to explain the variations in per capita retail employment. The initial results were unsatisfactory due to the wide variation in the data in the less populous counties. Limiting the dataset to counties with a population of more than 25,000 —based on the assumption that a less populous area does not have enough demand to support a full range of retail trade establishments — produced more usable results. Per capita personal income is measured by the U.S. Department of Commerce, Bureau of Economic Analysis. The BEA also produces a measure of the cost of living — regional price parity — for metropolitan areas and for the nonmetro portion of each state. Per capita personal income adjusted for living costs was used in the regression analysis.

The regression equation was used to predict the amount of per capita retail employment in the 15 counties of more than 25,000 residents with a border crossing. (Though not technically appropriate, the regression equation also was applied to the three less populous counties with a border crossing.) Actual employment was higher than predicted employment in 13 of the 15 counties using the employment figures from Business Patterns and in 10 of the counties using BEA employment. Since actual employment on average should be higher in only half of the counties, this suggests that cross-border shoppers are boosting retail trade in some of the counties with a border crossing. However, the higher-than-predicted retail employment could be due to other factors than Mexican shoppers. For example, tourists and/or seasonal residents are numerous in a few of the border counties and may be responsible for the relatively high retail employment.

Trade-related activities in the 18 counties with a border crossing are summarized in Table 10. Santa Cruz County, Arizona and Webb County, Texas (Laredo) are the mostly highly tied to international trade. Four other Texas counties — El Paso, Maverick (Eagle Pass), Hidalgo (McAllen), and Cameron (Brownsville) — have more moderate cross-border links. Despite the presence of a border crossing, little if any perceptible effect from border trade is present in several counties. The location quotients are correlated to the per capita border crossing data discussed in Volume IV: those counties with high per capita traffic generally also have high location quotients in the affected trade and transportation activities. Imperial County, California

TABLE 10
SUMMARY OF LOCATION QUOTIENTS IN TRADE-RELATED ACTIVITIES, U.S. COUNTIES WITH BORDER CROSSINGS, 2011

	Transportation and Warehousing				Wholesale Trade					Retail Trade
	Total	484	4885	493	Total	Cate-gory	Loc Quot	Cate-gory	Loc Quot	Adjustment
San Diego, CA	.52	.37	.99	.38	1.06	4232	1.06	4234	1.36	.03
						4236	3.61	4239	1.04	
						4243	1.05	4249	1.34	
Imperial, CA	.62	.76	1.54	.54	.57	4245	1.69	4247	1.01	.10
						4249	2.42			
Yuma, AZ	.41	.46	.45	.57	.65	4239	1.01	4244	1.46	.08
						4245	1.85	4247	1.29	
						4249	1.89			
Pima, AZ	.58	.42	.42	.68	.39					.15
Santa Cruz, AZ	2.32	2.11	11.31	6.74	2.15	4244	3.45	425	9.96	.36
Cochise, AZ	.27	.34	.39	.27	.16					.04
Hidalgo, NM	.67	1.54	.00	.00	.10	4247	1.21			.21
Luna. NM	.41	.49	.10	.00	.61	4247	2.35	4248	11.48	.12
Doña Ana, NM	.43	.28	.30	.24	.31	4235	1.02	4248	1.02	-.00
El Paso, TX	1.11	1.83	3.10	.93	.66	4243	2.06	4247	1.07	.11
Hudspeth, TX	.06	.14	.00	.00	.00					-.61
Presidio, TX	.28	.76	.55	.15	.09	4245	4.42	4247	2.30	-.17
Val Verde, TX	.68	.84	.92	1.57	.19	4248	1.17			.12
Maverick, TX	.89	1.51	4.80	.18	.18	4233	1.08			.26
Webb, TX	3.85	4.32	36.42	1.76	.50	4231	1.04	4239	1.15	.32
						4247	1.60			
Starr, TX	.14	.12	.11	.18	.10					-.07
Hidalgo, TX	.59	.79	1.99	.72	.54	4244	1.34			.22
Cameron, TX	.77	.93	2.37	1.33	.46	4239	3.03			.16

Note: See following page for explanations

Source: Calculated from U.S. Department of Commerce, Census Bureau, Business Patterns 2011.

TABLE 10 (continued)
SUMMARY OF LOCATION QUOTIENTS IN TRADE-RELATED ACTIVITIES, U.S. COUNTIES WITH BORDER CROSSINGS, 2011

Transportation and Warehousing:
484: Truck transportation subsector
4885: Freight transportation arrangement industry group
493: Warehousing and storage subsector

Wholesale Trade: Of the 19 industry groups, only those with a location quotient greater than 1 are displayed. A list of those counties with a location quotient greater than 1 is included below.

Category: Subsector or Industry Group:	
4231: Motor vehicle and motor vehicle parts and supplies	Webb
4232: Furniture and home furnishings	San Diego
4233: Lumber and other construction materials	Maverick
4234: Professional and commercial equipment and supplies	San Diego
4235: Metal and mineral, except petroleum	Doña Ana
4236: Electrical and electronic goods	San Diego
4237: Hardware, plumbing and heating equipment and supplies	none
4238: Machinery, equipment, and supplies	none
4239: Miscellaneous durable goods	San Diego, Yuma, Webb, Cameron
4241: Paper and paper products	none
4242: Drugs and druggists' sundries	none
4243: Apparel, piece goods, and notions	San Diego, El Paso
4244: Grocery and related products	Yuma, Santa Cruz, Hidalgo TX
4245: Farm product raw materials	Imperial, Yuma, Presidio
4246: Chemical and allied products	none
4247: Petroleum and petroleum products	Imperial, Yuma, Luna, El Paso, Presidio, Webb
4248: Beer, wine, and distilled alcoholic beverage	Luna, Doña Ana, Val Verde
4249: Miscellaneous nondurable goods	San Diego, Imperial, Yuma
4251: Wholesale electronic markets and agents and brokers	Santa Cruz

Loc Quot: Location Quotient

Retail Trade:
Adjustment: the amount of the location quotient adjusted for per capita personal income (see text) relative to the unadjusted figure.

is an exception, ranking second on the per capita number of individuals, and fourth on the per capita number of trucks, crossing the border but without high location quotients.

Other Sectors. The LQ is greater than 1 in less than 10 of the 37 counties in each of the other sectors. Generally, these location quotients do not exceed 1 by a wide margin and frequently occur in sectors that generally support the local population. For example, in Texas, several of the mid-sized or larger counties have high location quotients in two health care and social assistance activities: home health care and social assistance for the elderly and disabled. In contrast, tourists and travelers, who represent a basic activity, boost the LQs in the accommodation and food services sector and in the arts, entertainment and recreation sector in some counties.

Economy of the Six Mexican Border States

The location quotients by sector for the Mexican border states as a whole calculated from each of the three datasets are shown in Table 11. The overall LQ exceeds 1.2 based on two of the three measures, demonstrating that a significantly higher per capita level of economic activity is present in the border states than in the balance of the country. While variations in the LQs are present across the three measures, particularly in the agriculture and mining sectors, the LQs are reasonably consistent in most sectors. For the border states taken together, the average LQs of the three measures are particularly high in the manufacturing, utilities, and construction sectors, each part of the secondary category. The LQs also exceed 1 by more than a slight amount in transportation and warehousing; real estate and rental; information; educational services; and health care and social assistance.

Excess activity by sector for the border states as a whole calculated from each of the three datasets are shown in Table 12. The excesses based on both value added and employment reported from the 2009 economic census are far higher in manufacturing than in any other sector. Other sectors with at least moderate excesses — listed in order of the average rank of the value added and economic census employment measure, without considering tradability — include construction; trade (wholesale); transportation and warehousing; utilities; health care and social assistance; real estate and rental; information; educational services; and professional, scientific and technical services.

Based on the 2009 economic census and value added, the overall LQ is considerably higher in Nuevo León than in the other border states; it is the only state with a LQ greater than 1 based on each of the three datasets (see Chart 36). The high figures in Nuevo León result from the activity in the greater Monterrey area, which is outside the border region. Each of the border states has an overall LQ greater than 1 based on at least one of the three measures.

Value Added

Focusing on the value added measure, the location quotient in the border states as a whole is greater than 1 — and therefore higher than in the balance of the nation — in 12 of the 19 sectors (see Table 13). In particular, the border states have high LQs in the utilities and manufacturing sectors. The value added in pesos in the six border states taken together is included in the table in order to highlight the wide range in size across the sectors.

TABLE 11
LOCATION QUOTIENTS BY SECTOR, SIX MEXICAN BORDER STATES AS A WHOLE

	Six Border States			Border Region		Balance of States	
	Value Added*	Employ-ment**	Employ-ment***	Employ-ment**	Employ-ment***	Employ-ment**	Employ-ment***
TOTAL	1.23	1.02	1.29	1.04	1.33	1.02	1.26
Primary (Agriculture)	1.21	0.53		0.40		0.62	
Secondary	1.40	1.33	1.83	1.50	2.28	1.21	1.55
Mining	0.69		1.51		1.31		1.63
Utilities	1.80		1.34		0.95		1.59
Construction	1.37		1.51		0.98		1.84
Manufacturing	1.72		1.92		2.57		1.50
Trade	1.20	1.00	1.03	1.00	0.97	1.00	1.07
Wholesale			1.19		0.89		1.38
Retail			1.00		0.99		1.01
Services	1.14	1.01	1.10	0.99	0.95	1.03	1.20
Transportation and Warehousing	1.38		1.27		1.09		1.38
Information	1.07		1.34		1.38		1.31
Finance and Insurance	1.07		0.66		0.28		0.90
Real Estate and Rental	1.17		1.27		1.26		1.27
Professional, Scientific & Technical Services	1.07		1.15		0.81		1.37
Management of Companies	0.86		0.59		0.00		0.97
Administrative Support & Waste Managemt	0.97		1.23		0.81		1.50
Educational Services	1.31		1.10		0.83		1.26
Health Care & Social Assistance	1.07		1.27		1.24		1.30
Arts, Entertainment and Recreation	0.95		1.13		0.89		1.28
Accommodation and Food Services	0.84		0.91		0.97		0.88
Other Services	0.98		1.12		1.11		1.13
Government	0.90						

Note: a blank indicates that the data are not available

* Value added portion of Gross Domestic Product, 2012
** Employment, 2010 Census
*** Employment, 2009 Economic Census

Source: Instituto Nacional de Estadística y Geografía.

TABLE 12
EXCESS ACTIVITY BY SECTOR, SIX MEXICAN BORDER STATES AS A WHOLE

	Value Added*	Employment**	Employment***
TOTAL	629,583	165,532	1,027,348
Primary (Agriculture)	18,521	-471,095	-1,871
Secondary	388,650	601,865	846,978
Mining	-74,011		12,839
Utilities	35,806		14,282
Construction	81,526		63,136
Manufacturing	345,329		756,721
Trade	85,192	-3,376	36,925
Wholesale Trade			37,634
Retail Trade			-709
Services	222,412	38,138	145,316
Transportation and Warehousing	64,861		33,840
Information	4,560		17,420
Finance and Insurance	6,061		-29,115
Real Estate and Rental	53,295		11,178
Professional, Scientific & Technical Services	4,133		15,194
Management of Companies	-2,229		-1,896
Administrative Support & Waste Management	-2,729		55,836
Educational Services	27,026		10,746
Health Care & Social Assistance	4,215		28,352
Arts, Entertainment and Recreation	-564		4,408
Accommodation and Food Services	-9,182		-27,410
Other Services	-1,330		26,763
Government	-10,896		

Note: a blank indicates that the data are not available

* Value added portion of Gross Domestic Product, 2012, in millions of pesos
** Employment, 2010 Census
*** Employment, 2009 Economic Census

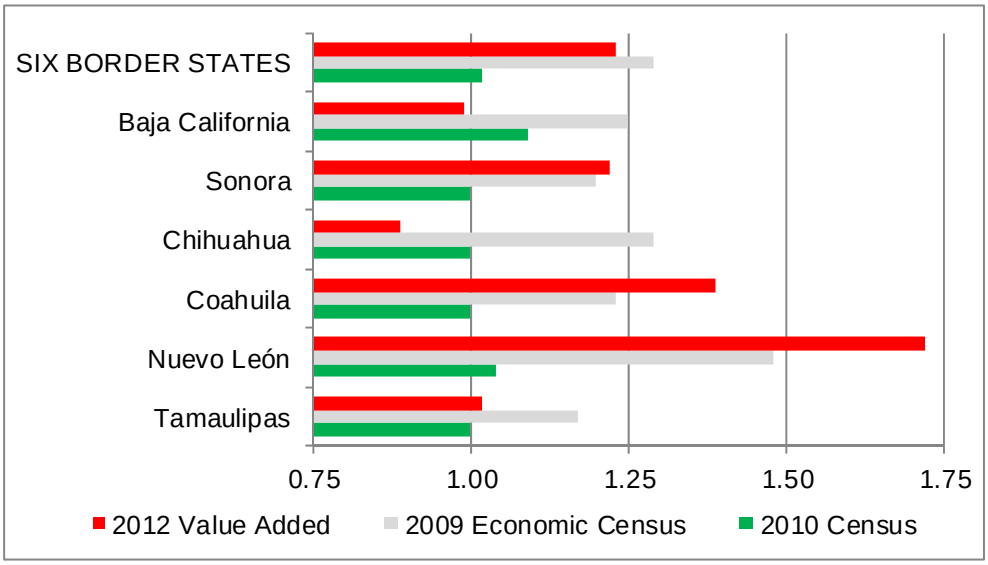
Source: Instituto Nacional de Estadística y Geografía.

Among the 19 sectors, manufacturing has the highest location quotient in the border states as a whole. It accounts for one-fourth of the value added of the border states, compared to a share of 16 percent in the balance of the nation. Since most manufacturing activities are tradable, this sector is of particular significance.

Other than manufacturing, four sectors have a value added sectoral share in excess of 7 percent in the border states — trade, real estate and rental, construction, and transportation and warehousing — and each has a location quotient in excess of 1.15. The share exceeds that in the balance of the nation in the construction and transportation and warehousing sectors. The latter sector consists in part of tradable activities, as does the wholesale trade portion of the trade category.

In 14 of the 19 sectors, Nuevo León has the highest LQ of the six border states. Each of the states has a LQ greater than 1 in between six and 10 sectors, except for Nuevo León with 15. All six

CHART 36
OVERALL LOCATION QUOTIENT BY ECONOMIC MEASURE AND MEXICAN BORDER STATE



Source: Instituto Nacional de Estadística y Geografía.

states have a LQ above 1 in the utilities, manufacturing, educational services, and health care and social assistance sectors. At least one border state has a location quotient greater than 1 in each of the sectors.

The only subsectoral data available by state for value added is in the manufacturing and mining sectors. Among the border states, the mining of oil has a location quotient greater than 1 only in Tamaulipas. The LQ for other mining is extremely high in Sonora and very high in Chihuahua.

The values of the value added of the 12 manufacturing subcategories are of widely varying size (see Table 14). The location quotient exceeds 1 in the six border states taken together in eight of the 12 subcategories. The number with a LQ of more than 1 ranges from three in Tamaulipas to 10 in Nuevo León. At least one border state has a LQ greater than 1 in each of the 12 subcategories except apparel. All six have a figure above 1 in the subcategory including machinery, computers and electronics, electrical, and transportation equipment; five have a LQ of more than 1 in the furniture and "other" subcategories.

Four subcategories account for more than 80 percent of the manufacturing value added nationally and in the six border states:

- Machinery, computers and electronics, electrical, and transportation equipment: The LQ in the border states as a whole is 2.8, far higher than in the balance of the nation. This subcategory accounts for 66 percent of the excess value added in the manufacturing sector in the six border states as a whole. Each of the border states has a LQ greater than 1, with a very high figure in Coahuila and Nuevo León and figures of at least 1.8 in Baja California, Chihuahua, and Sonora.

TABLE 13
VALUE ADDED BY SECTOR AND MEXICAN BORDER STATE, 2012

		Location Quotient							
	Six Border States*	**Baja California**	**Sonora**	**Chihua-hua**	**Coahuila**	**Nuevo León**	**Tamaul-ipas**	**Six Border States**	**Balance of Nation**
TOTAL	3,319	0.99	1.22	0.89	1.39	1.72	1.02	1.23	0.95
Agriculture	109	0.96	2.52	1.78	0.99	0.31	1.22	1.21	0.96
Mining	161	0.03	2.15	0.52	0.45	0.30	1.05	0.69	1.07
Utilities	81	2.27	1.62	1.43	1.62	2.12	1.58	1.80	0.83
Construction	301	1.47	1.29	0.73	1.21	2.18	1.00	1.37	0.92
Manufacturing	827	1.14	1.35	1.08	3.15	2.44	1.02	1.72	0.84
Trade	506	1.04	1.15	0.87	0.96	1.90	0.97	1.20	0.96
Transportation and Warehousing	234	0.85	0.75	0.66	1.64	2.37	1.56	1.38	0.92
Information	67	0.93	0.95	1.10	0.73	1.61	0.82	1.07	0.98
Finance and Insurance	90	0.71	0.70	0.64	0.84	2.25	0.69	1.07	0.98
Real Estate and Rental	368	1.14	0.97	1.10	1.16	1.37	1.17	1.17	0.96
Professional, Scientific and Technical Services	63	1.00	0.61	0.53	0.61	2.30	0.72	1.07	0.98
Management of Companies	14	0.14	0.00	0.05	0.10	3.48	0.04	0.86	1.03
Administrative Support & Waste Management	106	0.59	0.66	0.50	1.23	1.97	0.48	0.97	1.01
Educational Services	114	1.30	1.32	1.22	1.29	1.52	1.11	1.31	0.93
Health Care & Social Assistance	63	0.95	1.10	0.84	0.99	1.29	1.18	1.07	0.98
Arts, Entertainment and Recreation	12	1.11	1.00	0.44	0.73	1.69	0.45	0.95	1.01
Accommodation and Food Services	48	1.07	0.91	0.66	0.64	0.92	0.79	0.84	1.03
Other Services	54	1.01	0.84	0.88	0.69	1.28	0.96	0.98	1.01
Government	101	1.04	0.99	0.84	0.87	0.89	0.81	0.90	1.02

* In trillions of pesos

Source: Instituto Nacional de Estadística y Geografía.

TABLE 14
VALUE ADDED BY SECTORAL SUBCATEGORY AND MEXICAN BORDER STATE, 2012

Subcategory (NAICS Code)*	Six Border States**	Location Quotient							
		Baja California	Sonora	Chihua-hua	Coahuila	Nuevo León	Tamaul-ipas	Six Border States	Balance of Nation
Mining:									
Oil	65	0.00	0.00	0.00	0.48	0.26	1.27	0.33	1.14
Other	97	0.15	12.20	2.94	0.34	0.47	0.02	2.33	0.71
Manufacturing:									
Food (311)	106	0.72	1.03	0.54	0.66	1.95	0.32	0.94	1.01
Beverages and Tobacco (312)	32	1.08	1.49	0.68	2.92	1.57	0.76	1.38	0.92
Textiles (313-314)	6	0.42	1.04	0.52	1.20	1.43	0.57	0.89	1.02
Apparel (315-316)	10	0.51	0.59	0.46	0.89	0.90	0.27	0.62	1.08
Wood Products (321)	9	0.34	0.39	8.14	0.38	0.82	0.18	1.78	0.83
Paper and Printing (322-323)	20	2.23	0.42	0.99	2.30	2.50	0.60	1.58	0.87
Petroleum, Chemicals and Plastics (324-326)	79	0.27	0.29	0.15	0.53	1.42	2.11	0.86	1.03
Nonmetallic Minerals (327)	40	0.94	0.96	0.94	3.81	2.92	0.58	1.74	0.84
Primary and Fabricated Metals (331-332)	129	0.76	3.31	0.41	7.47	4.93	0.37	2.87	0.59
Machinery, Computers & Electronics, Electrical, and Transportation Equipment (333-336)	357	1.80	1.97	2.18	6.45	3.23	1.38	2.79	0.61
Furniture (337)	11	3.53	1.03	1.59	2.93	1.83	0.66	1.91	0.80
Other Manufacturing (339)	27	6.03	1.65	3.30	0.36	1.46	1.41	2.37	0.70

* The subsector codes from the North American Industry Classification System are shown in parentheses.
** In trillions of pesos.

Source: Instituto Nacional de Estadística y Geografía.

- Primary and fabricated metals: At 2.9, the LQ in the border states as a whole is far higher than in the balance of the nation. This subcategory accounts for 24 percent of the excess value added in the manufacturing sector in the six border states as a whole. Only three of the border states have a LQ greater than 1, but the figure exceeds 3.3 in Coahuila, Nuevo León, and Sonora.
- Food: The location quotient is slightly lower in the border states as a whole than in the balance of the nation, though Nuevo León has a high value.
- Petroleum, chemicals, and plastics: The location quotient is lower in the border states as a whole than in the balance of the nation. Tamaulipas and Nuevo León have LQs greater than 1.

Economic Census

For subsectoral detail beyond the 12 manufacturing and two mining subcategories, the 2009 economic census must be used. Since it is limited to employees of companies and accounts for less than half of all workers, it may not be representative of the economy as a whole. Even without these limitations, the base study using the economic census is based on employment and therefore will differ from the results based on gross domestic product.

Manufacturing. Using the economic census data, the location quotient for the border states as a whole exceeds 1 in 16 of 21 manufacturing subsectors and is greater than 1.5 in 11 subsectors. It is at least 2 in the primary metals and fabricated metals subsectors and is more than 3 in machinery; computer and electronic products; electrical equipment, appliance, and components; and transportation equipment. In each of these six subsectors, the LQ exceeds 1 in nearly all of the border states, with figures greater than 2 common. Other subsectors in which most states have a high LQ include plastics and rubber, and miscellaneous manufacturing. In contrast, the LQ for the border states as a whole is less than 1 in three of four subsectors related to textiles and apparel and in the manufacturing of food and of chemicals.

Excess employment in the six border states taken together is highest in transportation equipment at 217,000. Electronics is next at 193,000, followed by electrical equipment at 94,000, miscellaneous at 76,000, fabricated metals at 64,000, machinery at 40,000, and plastics and rubber at 33,000. Also exceeding 10,000 is primary metals, nonmetallic minerals, and furniture.

Agriculture. Only a small portion of the agricultural employment is included in the economic census, limited to aquaculture, fishing, and a portion of agricultural support. The overall location quotient in the six border states taken together is 0.9; Sonora and Tamaulipas have a figure greater than 1. The LQ for the six border states taken together exceeds 1 in aquaculture and agricultural support. Excess employment is 4,000 in aquaculture and 400 in agricultural support.

Mining. The location quotient from the economic census of 1.5 for the border states as a whole is substantially higher than the 0.4 based on gross domestic product. Based on employment, the mining of metals is the primary activity in the border states, with location quotients above 2 in Sonora, Chihuahua, and Coahuila. Excess employment in the six border states as a whole is 15,000 in metal mining and 2,000 in mining support.

Utilities. The location quotient from the economic census is 1.3 for the border states as a whole, with a figure above 1 in each of the six states. The LQ exceeds 1 in each of the two subsectors in every state. In the six border states as a whole, excess employment is 9,000 in the subsector for the generation, transmission and distribution of electricity and 5,000 in the subsector including water and natural gas.

Construction. The location quotient from the economic census is 1.5 for the border states as a whole, with a figure above 1 in each of the six states, corresponding to the above-average growth rate in the border states. The LQ exceeds 1 in each of the three subsectors in nearly every state. In the six border states taken together, excess employment is 36,000 in the construction of buildings, 15,000 in heavy and civil engineering construction, and 12,000 in specialty trade contractors.

Wholesale Trade. The data from the economic census indicates that the location quotient in the border states as a whole is 1.2 for wholesale trade. Nuevo León is primarily responsible for the above-average activity, with a LQ of 1.8, including more than 1 in all seven subsectors, but this activity largely occurs outside the border region. Sonora has a LQ of 1.2 in wholesale trade, with the highest figure in the food and beverages subsector. Excess wholesale trade employment in the six border states as a whole is 16,000 in food and beverages, 14,000 in agricultural products, 10,000 in machinery and equipment, and small amounts in automotive products and in the brokers and agents subsector.

Retail Trade. The data from the economic census indicates that the location quotient in the border states as a whole is 1.0 for retail trade. The retail trade LQ is close to 1 in each state. Each of the border states has a LQ above 1 in the automobile, gasoline station, and electronics and appliance subsectors, but each state has a LQ below 1 in some subsectors. In the six border states taken together, excess employment is a high 72,000 in the automotive subsector and 26,000 in the gasoline station subsector, indicating the greater reliance on automotive transportation in the border states than in the rest of the country. The excess is 14,000 in the electronics and appliance subcategory. Small excesses are present in the hardware stores, health, and nonstore (purchases made by catalog or the Internet) subsectors.

Transportation and warehousing. The location quotient of 1.3 in the border states as a whole from the economic census is misleading because of the figure of 2 in Nuevo León, which predominantly is due to activity outside the border region. Three of the other five states have a LQ less than 1. The LQ is greater than 1 in Chihuahua (in contrast to the under 1 figure according to value added) and Tamaulipas. The high figure in the latter state is largely due to the water transportation subsector. Each of the border states except Baja California has a LQ greater than 1 in the trucking subsector; the figure for the border states as a whole is 1.9. In the six border states taken together, excess employment is 31,000 in trucking, less than 5,000 in transportation support, transit, and rail transportation, and minimal in water transportation and the postal service.

Information. The location quotient is 1.3 in the border states as a whole based on the economic census. Four of the six subsectors have a LQ above 1 — publishing, radio and television, telecommunications, and data processing — but the latter is the only subsector with a figure

considerably above 1. It has high LQs in Chihuahua, Sonora, and Baja California. Excess employment in the six border states as a whole is 11,000 in data processing, 5,000 in telecommunications, and smaller amounts in publishing and radio and television broadcasting.

Finance and Insurance. The location quotient based on the economic census is less than 0.4 in five of the border states. The figure is 2 in Nuevo León, but is only 0.2 in that state's border region. Of the four subsectors, only the securities and investment subsector has a LQ above 1 (with excess employment of only 1,000) in the border states as a whole, primarily due to a high figure in Baja California.

Real Estate and Rental. The location quotient from the economic census is 1.3 for the border states as a whole, with a figure above 1 in each of the six states. The LQ for real estate exceeds 1 in each state and the LQ for the rental and leasing subsector is more than 1 in five states. Excess employment in the six border states as a whole is 8,000 in real estate and 3,000 in rental and leasing.

Professional, Scientific and Technical Services. The location quotient from the economic census is 1.2 for the border states as a whole. Only Nuevo León has a figure much above 1. No subsectoral information is available.

Management of Companies. The location quotient from the economic census is very low in each of the border states except Nuevo León (outside of the border region). No subsectoral information is available.

Administrative Support and Waste Management. The location quotient from the economic census is 1.2 for the border states as a whole, with a figure above 1 in three of the six states, primarily Nuevo León outside of the border region. The waste management LQ exceeds 1 in five states. Excess employment in the six border states as a whole is 52,000 in the administrative support subsector and 4,000 in the waste management subsector.

Educational Services. The location quotient from the economic census is a little above 1 in the border states as a whole, largely due to Nuevo León outside of the border region. Excess employment is 11,000 in the border states as a whole. No subsectoral information is available.

Health Care and Social Assistance. The location quotient is 1.3 from the economic census for the border states as a whole, with a figure above 1 in five of the six states. The LQ for the border states as a whole exceeds 1 in each of the four subsectors. Excess employment is 14,000 in ambulatory health care, 8,000 in hospitals, and less than 5,000 in social assistance and in nursing care facilities.

Arts, Entertainment and Recreation. The employment location quotient from the economic census is 1.1 for the border states as a whole (but the value added figure is less than 1), with a figure above 1 in three of the six states, primarily Nuevo León outside of the border region. Each of the three subsectors has a figure of a little more than 1 in the border states as a whole. Excess employment is 4,000 in the amusement, gambling and recreation subsector and less than 1,000 in the performing arts and spectator sports, and the museums and zoos subsectors.

Accommodation and Food Services. The location quotient from the economic census is less than 1 for the border states as a whole, with a figure below 1 in five of the six states (Baja California is the exception with a LQ barely above 1). The LQ for the border states as a whole is less than 1 in the accommodation and food services subsectors.

Other Services. The location quotient from the economic census is 1.1 for the border states as a whole, with a figure above 1 in five of the six states. The LQ for the border states as a whole is at least 1 in each of the three subsectors. Excess employment is 21,000 in the repair and maintenance subsector, 6,000 in laundry and personal care services, and minimal in the organizations subsector.

Government. Information on the public sector is not available from the economic census.

Economy of the Border Region of México

For the 78 municipios that comprise the border region, the economic base analysis is limited to the four broad categories available from the 2010 census and sectoral data from the 2009 economic census. The location quotients for the border region are compared to those in the balance of the border states in Table 11. The location quotients from the economic census are higher than those from the 2010 census overall and in the secondary category in the border region, and overall and in each of the categories that can be compared in the balance of the states.

The economy in the border region is somewhat different from that of the balance of the border states based on the four major categories. Based on the two employment datasets, the location quotient in the border region of the secondary category is moderately to significantly higher; the LQ of agriculture is lower. Little difference is present in the trade and services categories based on the 2010 census, but the LQs in the border region are lower based on the 2009 census.

The differences between the border region and the balance of the border states are greater at the sectoral level. In 16 of the 19 available sectors, the location quotient in the border region is lower than in the balance of the border states. The LQs are slightly higher in the border region in the information and accommodation and food services sectors and much higher in the manufacturing sector. Manufacturing is by far the most important secondary activity in the border region, while each of the four secondary sectors have moderately high LQs in the balance of the states. Wholesale trade has a high location quotient in the balance of the states but not in the border region. Among the services, transportation and warehousing is more important outside of the border region and the balance of the states has a location quotient greater than 1 in more sectors. Thus, the border region's economy is not as varied, with manufacturing being especially important.

The economy in the border region of Nuevo León stands out as being different from the economy in the border region of the other states. It is the only state with a location quotient greater than 1 in agriculture and it has the lowest LQ in the secondary category. It is the only state not to have a manufacturing LQ greater than 1 in the border region.

At the municipio level, location quotients are highly correlated to the amount of employment. Municipios with substantial employment typically have an overall location quotient greater than 1, while few of those with less than 10,000 employees have a LQ that high. Few of the municipios with employment of more than 10,000 have a LQ greater than 1 for agriculture; most have a LQ greater than 1 for the secondary category. In contrast, nearly all of the municipios with fewer than 5,000 employees have a high agriculture LQ (a median of 1.9) and few have a high LQ in the secondary category (a median of 0.8). The location quotients of the trade and services categories also are related to employment size. The largest municipios have LQs close to 1 while those with the least employment have LQs of only about 0.5.

Thus, the smallest municipios tend to have an economy that is highly dependent on agriculture, while the largest municipios have a much more diverse economy. In most of the larger municipios, manufacturing has a leading role.

For many of the municipios in the border region, the location quotient frequently exceeds 1 in several sectors that have very low shares of tradable activities, particularly real estate and rental, health care and social assistance, and other services.

Economic Base Summary for the Border Area of México

Based on both employment and value added, excesses in the six border states taken together are largest by a wide margin in manufacturing. Construction and trade have the next largest excesses, but are largely not tradable. Transportation and warehousing is among the leaders and has a moderately high tradable share. Other sectors with excesses — utilities, real estate and rental, health care and social assistance, information, and educational services — have low or moderately low tradable shares.

Given its export orientation, size, and the highest LQs of any sector, manufacturing is of particular importance in the border states, particularly in the border region. Within manufacturing, the employment LQ exceeds 1 in 16 of the 21 subsectors. Excess employment in the six border states taken together exceeds 30,000 in seven subsectors: transportation equipment, electronic equipment, electrical equipment, miscellaneous manufacturing, fabricated metals, machinery, and plastics and rubber. Only four subsectors outside of manufacturing have excess employment of this magnitude: grocery stores (little of which is export), administrative support, construction of buildings (little of which is export), and trucking.

Thus, manufacturing is the primary economic base activity in the border states. Based on employment, various other activities contribute lesser amounts, including certain wholesale trade and transportation activities, administrative support, metal mining, agriculture, and data processing.

The economy in the border region differs from that of the rest of the border states, with a much higher employment location quotient in the border region in the manufacturing sector, but a lower LQ (by at least 0.1) in 13 of the other 18 sectors. In eight sectors, the LQ is less than 1 in the border region but greater than 1 in the balance of the border states. Thus, while the overall LQ in the border region is marginally higher than in the balance of the border states, the border

region is highly dependent on manufacturing while a diversified economic base is present in the balance of the border states.

Excess employment in the border region exceeds 500,000 in manufacturing but is less than 10,000 in every other sector. In contrast, in the balance of the border states, excess employment in manufacturing is barely more than 250,000, by far the most in the balance of the border states, but just half of the amount in the border region despite the size of the economy being larger in the balance of the border states. Eight other sectors have an excess of more than 10,000 in the balance of the border states.