

## Economic integration and cross-border economic organizations: The case of San Diego-Tijuana

### Integración económica y organizaciones económicas transfronterizas: El caso de San Diego-Tijuana

Jorge Eduardo Mendoza Cota<sup>a\*</sup>  (<http://orcid.org/0000-0002-9555-9581>)

<sup>a</sup>El Colegio de la Frontera Norte, Department of Economic Studies, carretera Escénica Tijuana-Ensenada, Tijuana, Baja California, México, e-mail: emendoza@colef.mx

#### Abstract:

The economic integration between the United States and Mexico has affected the economic, political and social relations in the border region. The paper seeks to relate the increasing economic integration and business cycles of the economies of San Diego and Tijuana to the development of both national and binational economic organizations in the border region. The methodology of analysis uses both statistical estimations of the economic integration of San Diego and Tijuana and semi-structured interviews of economic organizations to analyze the increasing economic integration and the role and achievements of the cross-border economic organizations. The results showed that cross-border cooperation is predominately controlled by federal and state governments on both sides of the border. However, the main achievements of cross-border economic cooperation have been accomplished by local private organizations. The perspective of further local economic development greatly depends on both the possibility of increased involvement of federal governments and the growing encouragement of regional organizations.

Keywords: economic integration, border economics, business cycles, cross-border cooperation, economic organizations.

#### Resumen:

La integración económica de los Estados Unidos y México ha afectado las relaciones económicas, políticas y sociales en la región fronteriza. Este trabajo busca relacionar la integración económica y la sincronización del ciclo económico de las ciudades de San Diego y Tijuana con el desarrollo de or-

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\*Corresponding author: Jorge Eduardo Mendoza Cota, e-mail: emendoza@colef.mx



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organizaciones económicas tanto a nivel nacional como binacional en la frontera. La metodología de análisis utiliza estimaciones estadísticas así como entrevistas semiestructuradas a organizaciones económicas con el fin de analizar la intensificación de la integración económica y los logros de las organizaciones económicas en la cooperación transfronteriza. Los resultados muestran que la cooperación transfronteriza ha estado controlada por organizaciones estatales y federales de ambos lados de la frontera. No obstante, los principales logros han sido realizados por organizaciones económicas privadas locales. Las perspectivas de mayor desarrollo económico dependen de la posibilidad de mayor involucramiento federal y de la promoción de organizaciones económicas locales.

Palabras clave: integración económica, economía fronteriza, ciclo económico, cooperación transfronteriza, organizaciones económicas.

## Introduction<sup>1</sup>

The border between the USA and Mexico has experienced important changes as a result of the increasing economic interaction between the two countries. At the regional level, the economic integration of the border cities of San Diego and Tijuana can be conceived of as an expression of the economic forces that are encouraging strategic locations for the expansion of export process zones (Sassen, 2000). However, the trend towards increasing economic integration has also caused about the development of local social and political relationships and created important challenges for the governance of regional cross-border issues.

For some authors, the Tijuana-San Diego region has been functioning as a cross-border metropolis, especially by supplying complementary economic activities (Chang-Hee, 2005). San Diego specializes in high-tech activities, while Tijuana is oriented toward low-skill labor manufacturing and services. Thus, the border region of San Diego-Tijuana is characterized by marked differences of income and infrastructure endowments.

For others, the San Diego-Tijuana region does not correspond to a binational region (Sparrow, 2001). The author considers that the relationship between these cities is mainly determined by economic factors, particularly after the establishment of the North American Free Trade Agreement (NAFTA). Both cities correspond to two different nations that have important differences and asymmetries at the economic, political and cultural levels and also varying social and individual attitudes with respect to the other border city.

It's important to mention that in the last 50 years the border region between the US and Mexico has been growing more rapidly in terms of population (particularly on the Mexican side) and economic activity than the average growth of both countries. As pointed out by Anderson (2003), indicators of quality of life and educational attainment have experienced important gains on the US and Mexican border; in addition, poverty has been reduced on both sides of the border.

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Within this context, the border reflects the differences of the two urban areas in aspects such as language, culture, migration, etc.; on the other hand, however, it has become a porous place, where thousands of people cross daily to the other side. Particularly, the volume of Mexican workers crossing the border to work in San Diego County has increased substantially in the last twenty years. This process has been called *trans-migration* and is closely related to the geographical proximity of internationally related economic activities (Alegría, 1990). Additionally, business, tourism, work, medical services and cultural activities, among other things have continuously increased border crossings from the American side, determining what has been called a “blurred” border (Kada y Kiy, 2004).

As a result, the San Diego-Tijuana region has also seen a proliferation of cross-border public, private and non-profit organizations that have been created to confront different challenges that have arisen in the cross-border region. Such challenges arise not only from the increasing economic relations but also from the problems that are posed the proximity of the border and its impact on environmental, cultural and community activities.

In this perspective, the cooperation and governance institutions in the region, based on public and private collaboration and social and cultural interaction have increased economic and social integration of the two border cities, particularly since the expansion of globalization and the establishment of the NAFTA. In order to understand how this increasing interdependence has affected the organizations which contribute to the governance of the shared challenges and opportunities of the region, the following research is aimed at providing an economic context of the integration of the border region of San Diego and Tijuana, by presenting the economic structure of both cities and the links that have encouraged economic integration and by gathering information and analyzing the vision, obstacles and achievements of the main stakeholders in the cooperation and governance of the San Diego-Tijuana region. Particularly, the study focuses on the impact of economic integration, the establishment of the NAFTA and the economic recession of 2009 on the activities of different national and binational organizations that are working on economic, social and cultural activities in the border region. Particularly, the study focuses on the differentiated effects and social struggles derived from the economic environment and external impacts.

The paper is structured as follows: first section, introduction; second section presents the economic characteristics of the San Diego and Tijuana region; third section describes the methodology of analysis of the economic integration in the border region and describes the increasing economic relations between San Diego and Tijuana that derived in a synchronized business cycle in the region; in fourth section, the border relations and economic organizations in the San Diego-Tijuana region are studied and the problems that arise from two cities with large differences in income, economic development and infrastructure are analyzed. Fifth section discusses the different visions of the border from organizations for economic development, the local and federal government agencies and the local stakeholders seeking to improve the economic and social conditions at the border, particularly on the Mexican side. Finally, the concluding remarks are presented.

## Economic characteristics of the border region between San Diego and Tijuana

The economy of Mexico and the USA has seen an increasing level of economic integration based on the dynamics of foreign direct investment (FDI) in Mexico and the trade between these two countries. The establishment of NAFTA in 1994 was the instrument that generated the tariff reductions and the assurance for investors of the member countries, allowing an important surge in the economic relations between the two countries.

This economic integration has also had important repercussions in the regional economic dynamics at the border level. As a consequence of the rapid growth of the manufacturing plants and the production of manufactured goods in Mexico intended to be exported to the USA, the northern border region of Mexico has become an important destination for FDI and manufacturing production.

One of the border regions that has been deeply affected by the economic integration of the USA and Mexico is located in the states of California and Baja California. The border region, where the city of San Diego and Tijuana are located, includes the Southern California county of San Diego and the northern part of Baja California peninsula. In 2010, the population of that region reached 6 250 383 people, with 3 095 313 people living in San Diego and 3 155 070 people in the state of Baja California and Tijuana (Table 1).

**Table 1: San Diego-Tijuana border region socioeconomic aspects**

| Baja California Social Aspects          |           | San Diego County Social Aspects          |           |
|---|-----------|--|-----------|
| Population, (2010)                      | 3 155 070 | Population, (2010)                       | 3 095 313 |
| Male                                    | 50.54%    | Male                                     | 50.20%    |
| Tijuana                                 | 1 559 683 | Binational border population             | 6 250 383 |
| Female                                  | 49.55%    | Female                                   | 49.80%    |
| Population density per square kilometer | 44.16     | Population density per square mile       | 748       |
| Population aged 0 to 29                 | 56.20%    | Population aged 25 to 54                 | 42.70%    |
| Crude birth rate                        | 17.3      | Crude birth rate (2002)                  | 15.2      |
| Life expectancy                         | 76.2      | Life expectancy                          | 79.4      |
| Foreign born                            | 0.41%     | Foreign born persons, percent, 2008-2012 | 23.20%    |
| Total Households                        | 858 676   | Total Households                         | 1 067 462 |
| Average household size                  | 3.6       | Average household size                   | 2.82      |

Source: Instituto Nacional de Estadística y Geografía (Inegi), 2013 and United States Census Bureau (n.d.).

Other additional socioeconomic indicators show that the average population density per square mile is higher in the county of San Diego than in Baja California, showing that San Diego is an urban city that has attracted population for many years, whereas Baja California, in general, has a much lower population density. However, the state has seen an increase in population since the establishment of NAFTA in 1994. Particularly, the city of Tijuana has grown exponentially in the last 20 years. Finally, the Mexican side of the border shows a younger population, some of whom cross the border to supplement the labor force in the services and construction activities in San Diego.

Regarding the economic profile of the two cities, it is important to point out that the economy of San Diego is characterized by its high productivity and technological development. On the other hand, the economy of the city of Tijuana is based on the in-bond assembly manufacturing plants (maquiladoras), services and tourism, with a lower level of technology and skills within the labor force. Also, there is an important gap in the economic activities of both cities; in 2010, the gross domestic product (GDP) of San Diego County was \$1 222 500 million dollars, while the GDP of the state of Baja California was significantly lower at \$26 721 million dollars, of which approximately 40% corresponds to the GDP of Tijuana (Table 2). Nevertheless, both economies are highly interconnected and have created an important cross-border business region.

**Table 2: Economic indicators of the region San Diego-Tijuana, 2010**

|                      | San Diego | Baja California | Tijuana | San Diego-Tijuana |
|----------------------|-----------|-----------------|---------|-------------------|
| GDP million dls.     | 165 912   | 26 721          | 10 113  | 192 633           |
| Labor force employed | 1 222 500 | 1 353 025       | 535 513 | 2 575 525         |
| Unemployment rate    | 10.5      | 5.67            | 5.84    |                   |

Source: United States Department of Labor, Bureau of Labor Statistics (n.d.) and Inegi (2009).

Another significant difference is related to the labor markets of those cities. As a result of the economic recession of 2008-2009, the unemployment rate of the city of San Diego increased to a very high level of 10.5%. Since the unemployment rate of Tijuana is not published, the unemployment rate of the state of Baja California can be used as a proxy, showing a lesser increase in the period considered reaching a level of 5.7%. Therefore, even though the *per capita* income of the state of Baja California is significantly inferior to the neighboring city of San Diego in the state of California, Baja California and particularly the city of Tijuana are characterized by a high level of employment generated by the maquiladora industries, although the salary level and quality of the jobs are significantly lower than those in San Diego.

It is worth mentioning that a major economic linkage between California and Baja California has to do with the intense commercial flows between the two states. Around 16% of the exports of the US to Mexico come from California. Also, around 70% of the California exports to Mexico pass through Baja California. This activity is particularly relevant because an important share of that trade crosses the border between San Diego and Tijuana.<sup>2</sup>

<sup>2</sup> Own estimations based on data from the United States Department of Transportation, Office of the Assistant Secretary for Research and Technology, Bureau of Transportation Statistics, TransBorder Freight Data (n.d.).

### *The economic profile of San Diego*

The economy of San Diego is characterized by the development of economic clusters, which are agglomerations of related industries and businesses. The most important of those are in entertainment and tourism as well as in the high technology industries of communications, aerospace and biotechnology and biomedical products (Table 3). However, the structure of the economy is rather diversified and there are other economic activities that are significant to the dynamics of the city. Additional relevant economic clusters include publishing and marketing, clean technologies and horticulture.

**Table 3: Labor employment in the main economic clusters of the city of San Diego, 2010**

|  |         |
|--|---------|
| Entertainment and hospitality              | 149 352 |
| Information and communication technologies | 72 049  |
| Aerospace, navigation and maritime tech    | 32 099  |
| Biotechnology and pharmaceuticals          | 22 636  |
| Biomedical devices and products            | 12 012  |
| Publishing and marketing                   | 11 848  |
| Clean technologies                         | 7 986   |
| Horticulture                               | 6 013   |
| Advanced precision manufactures            | 4 416   |
| Fruits and vegetables                      | 4 241   |
| Action sports manufactures                 | 4 177   |
| Apparel manufactures                       | 2 870   |
| Specialty foods and microbreweries         | 1 717   |

Source: San Diego Association of Governments (SANDAG, 2012).

The emergence of highly technological activities have been based on the expansion of higher education and defense expenditures in the city of San Diego. In particular, defense contracts have encouraged activities with intensive innovative processes in the aerospace, software, communications, computers and electronics industries among others; also, universities and research institutes have been instrumental in the development of biotechnology, biomedical and pharmaceutical industries. These industries have shaped the profile of San Diego's economy today and will continue to evolve in the future (SANDAG, 2012). Other factors that have positively impacted the competitiveness of San Diego are its business-friendly tax structure, and its supply of both highly qualified and less qualified labor (Feinberg & Schuck, 2001).

With respect to the commercial activities of the city of San Diego, the city is ranked as number 17 in terms of exports in the USA in 2011. The urban area represents 9.9% of the exports of the state of California (Table 4). Additionally, it is significant that the main exports of the city are high technology manufactures such as electronic equipment, computers and transportation equipment. The state of California is one of the states with the highest levels of trade with Mexico. In this context, the urban region of San Diego also has Mexico as the main importer of its manufactures, followed by Canada, both economies members of the NAFTA.

**Table 4: Main exports of San Diego, 2011 (billions of dollars)**

| Sector                                 | Value | Share  | Main countries |       |        |
|--|-------|--------|----------------|-------|--------|
|  |       |        | Country        | Value | Share  |
| Miscellaneous manufactured commodities | \$5.0 | 28.70% | Mexico         | \$4.6 | 26.50% |
| Computer and electronic products       | \$2.9 | 16.40% | Canada         | \$929 | 5.30%  |
| Machinery, except electrical           | \$2.8 | 16.10% | China          | \$919 | 5.30%  |
| Chemicals                              | \$1.8 | 10.10% | Israel         | -     | -      |
| Transportation equipment               | \$1.0 | 6.00%  | India          | -     | -      |

Source: International Trade Administration, Department of Commerce (2011).

## The emerging economy of Tijuana

The state of Baja California and, in particular, the cities of Tijuana and Mexicali, are characterized by an important share of manufacturing industry in their GDP (Table 5). The manufacturing boom is directly related to the expansion of maquiladora activities in the state, which are oriented to the manufacture and assembly of temporarily imported inputs to be re-exported to the USA. As a result, the city of Tijuana has an important economic interaction with the state of California and particularly with the city of San Diego. The establishment of the NAFTA substantially strengthened the economic and social relations with California, based on maquiladoras and export oriented manufacturing production.

**Table 5: Labor employment in the main economic activities of the city of Tijuana, 2014**

|  |         |
|--|---------|
| <b>Total</b>   | 429 474 |
| Electronic components, computers and communication equipment | 45 837  |
| Other manufacturing industries                               | 43 682  |
| Food and beverages services                                  | 25 048  |
| Business support services                                    | 22 730  |
| Plastic and rubber products                                  | 17 965  |
| Metallic products  | 17 626  |
| Supermarket and convenience stores                           | 16 602  |
| Other manufacturing industries                               | 12 679  |
| Repair and maintenance services                              | 12 477  |
| Electric components and electrical generating equipment      | 11 269  |
| Furniture production   | 11 188  |
| Educational services   | 10 267  |

Source: Own elaboration with data from the Inegi (2014).

Additionally, the rapid growth of the manufacturing and maquiladora sectors has had important effects on the other economic sectors, since it has generated additional income in the border cities and, therefore, has increased trade and services activities in the border region (Mendoza, 2007). Table 5 shows the importance of manufacturing activities in the city of Tijuana, particularly electronic components, computers and communication equipment, which concentrate the largest share of labor with 45 837 workers. Other important manufacturing activities that exhibit relatively large shares of employment in the city are electric components and power generating equipment and furniture manufacturing. Additionally, Tijuana is characterized by economic activities that have to do with services and commerce. Food and beverages services have the largest share of employees in the services sector with 25 048 workers, followed by business support services, supermarkets and convenience stores and repair and maintenance services. Besides the more intensive manufacturing activities, the pull effect of the stronger economy and potential markets of the state of California has also encouraged the tourism and service sectors, attracting an important number of people to the coast of Baja California.

## The San Diego-Tijuana region economic relations

### *Methodological aspects*

The objective of the study is to understand which factors are determining the development of organizations aimed at increasing economic relations and growth at the border. In order to provide an economic context of the changes in the border region, an analysis of the structure and trends of the economic relations between San Diego and Tijuana is presented. The increasing synchronization of the economic activity on both sides of the border is documented by estimating the cyclical component of the GDP of the binational region. Additionally, with the goal of understanding the actors and their visions and efforts to develop economic activities, semi-structured interviews were applied. The resulting information was used for the analysis of the economic factors that are determining the expansion of economic organizations at the border, their struggles, and the accomplishments of the stakeholders considered in the sample of this study. By using the information from the interviews, a data base was constructed to study the economic aspects that are considered central for the activities that are developing at the border. This analytical technique is useful for studying the organizational context, and does not necessarily affect any previous assumptions established in the research. As a result, it can support the results from hard data used in the analysis of the effect of economic integration and business cycle synchronization on the development of cross-border economic cooperation and governance at the border between San Diego and Tijuana (Schmidt, 2004).

The interviews followed a pattern of questions based on theoretical and empirical findings regarding the process of economic integration and cross-border organizations. As a result, each interview consisted of a set of questions structured around the following themes: personal experience, organizational objectives, achievements of the organization, obstacles for the management of border governance and cooperation, identification of main actors, proposals to improve cross-border economic cooperation and governance, reflections on the border, opinions of NAFTA and its impact on the economy of the border region.

### *Manufacturing and trade*

The interaction between the two border cities increased considerably since the opening of the Mexican economy in the decade of the eighties and particularly after the establishment of NAFTA. Initially, a chief channel of economic interaction was developed through the FDI aimed at establishing maquiladoras (US-owned plants in Mexico that import inputs that are assembled by lower-paid workers into products to be re-exported to the USA). As a result, in 2010, the state of Baja California received \$815.6 million dollars of FDI, with 88.5% of those from the USA (Table 6). Hence, FDI and trade have been the driving forces of the economic integration of California and Baja California and have contributed to delineating the profile of the binational border region.

**Table 6: Foreign Direct Investment by country of origin in Baja California, 2010 (Millions of dollars)**

| Country | IED    | %     |
|---------|--------|-------|
| USA     | 721.45 | 88.5% |
| Mex/USA | 3.81   | 0.5%  |
| Japan   | 4.66   | 0.6%  |
| Canada  | 2.65   | 0.3%  |
| China   | 17.25  | 2.1%  |
| Korea   | 46.62  | 5.7%  |
| Taiwan  | 11.94  | 1.5%  |
| Others  | 0.44   | 0.1%  |
| France  | 6.77   | 0.8%  |
| Total   | 815.6  | 100%  |

Source: Secretaría de Desarrollo Económico de Baja California (Sedeco, n.d.).

The expansion of the manufacturing activities based on maquiladoras on the Tijuana side has also encouraged manufacturing employment growth on the San Diego side as well. However, it is important to point out that the importance of manufacturing in total employment is lower in San Diego. For example, in 2011, workers in that sector only accounted for 9.3% of total employment in the county of San Diego. On the other hand, in Baja California the employment in the manufacturing sector reached 21.5% in 2010 (Table 7). Those indicators show the importance of the manufacturing sector in Tijuana and reflect the vertical industrial trade and the expansion of the maquiladora activities with firms from the USA, Japan, Taiwan and South Korea (Sony, Samsung, Kenworth, LG, among others) looking for the comparative advantages of lower wages and the proximity to the US market.

**Table 7: Main economic activities shares to GDP in Baja California, 2010**

|                         |        |
|-------------------------|--------|
| Construction            | 8.71%  |
| Manufactures            | 21.50% |
| Food                    | 4.13%  |
| Textiles                | 4.84%  |
| Machinery and equipment | 9.14%  |
| Trade                   | 17.50% |
| Real estate             | 11.83% |

Source: Own elaboration with data from Inegi (n.d.).

One impact of this interaction in the manufacturing activities between San Diego and Tijuana is derived from the intense level of cargo transportation between the two cities. The value of the cargo trade at the Otay Mesa port of entry increased from 20.03 billion dollars to 29.46 billion dollars between 2004 and 2014.<sup>3</sup>

Additionally, the region has experienced rapid growth in business, social, familiar and cultural relations that have encouraged the expansion of border crossings from each side of the border. As results, an explosion of border crossings has occurred in the last ten years; in 2004 there were 10 577 148 vehicular border crossings at the Otay Mesa port of entry and 21 116 089 in San Ysidro; in 2014 the numbers increased to 12 040 318 and 43 733 555 respectively. With respect to pedestrian border crossings, the port of San Ysidro, which is the main pedestrian access of both cities, exhibited an increase from 7 925 371 to 12 486 850 border crossings in the same period.

The intensity of the border crossing at the San Diego-Tijuana border, one of the busiest international ports in the world, is mainly related to the purposes of shopping, working, visiting relatives and tourism. With respect to shopping, it has been pointed out that, historically, and due to differences in quality, variety and price, Mexican consumers from Tijuana with medium or higher income and passports tend to cross the border demanding retail goods, and entertainment (Muria & Chavez, 2011).

Other economic activities that have impacted the economic integration of the border region are related to the expansion of the health care sector. The Mexican border cities, and particularly Tijuana have experienced an increase of health services offered to American consumers that cross the border to acquire such services at lower costs than in the USA (Vargas-Hernández & Reza, 2010).

## Economic integration and the business cycle at the San Diego-Tijuana border

The border regions that have experienced economic integration have become important links between domestic and foreign markets. From this point of view, it is clear that economic integration has an important and direct impact on the border regions and urban areas. However, depending on specific border circumstances, border regions received different impacts of economic integration (Niebuhr & Stiller, 2002).

Economic theory have studied different angles on how economic integration has affected border regions. On one hand, the spatial impact of integration analyzes trading costs and its impact on regional readjustment; on the other, location theory and economic geography models have stated that trade generated by two neighboring countries might encourage the development of emerging manufacturing agglomerations by changing an inward orientation into an outward orientation of production. Furthermore, empirical studies have stressed the importance of border region cost advantages when trade increases between two neighboring countries.

In the case of the economic integration between Mexico and the USA, several authors (Krugman, 1991 and Hanson, 1996), have indicated that trade integration has affected

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<sup>3</sup> United States Department of Transportation (n.d.).

the economic activity more intensely at the border level. The reduction of tariffs and the lower labor costs derived from the relative proximity of markets across the border have attracted foreign direct investment and trade. The authors argued that the relatively small Mexican domestic economy changed from a domestic to an export oriented pattern of growth in order to access the larger markets of the USA. Besides, economic integration has also had an impact on the synchronization of business cycles as trade barriers are reduced. Therefore, increasing trade has played a role in the coordination of macroeconomic policies and, in the border region, in the specialization of economic activities oriented to external markets.

In the case of the US and Mexican border, the economic integration of recent years has affected both national and regional economic activities and generated additional short-term cyclical conditions that have impacted the economy at the border level. Particularly, a number of studies have found effects of the impacts of regional business cycles on commercial electrical consumption and cross-border cargo-vehicle flows (Fullerton, 2003). Additionally, it has been demonstrated that there is a synchronization of business cycles of the GDP of the border states of the USA and Mexico (Mendoza, 2013). As a consequence of a similar cyclical component of the GDP series of San Diego and Tijuana, the movements in the unemployment rate are roughly parallel on both sides of the border region. Therefore, the changes in the macroeconomic variables of the binational region indicate that the northern border states of Mexico are greatly affected by the economic activity in the southern border states of the US.

It is possible to apply statistical estimations of the degree of synchronization of the business cycles of San Diego and the state of Baja California during the period 2003-2013. Considering that the city of Tijuana concentrates around 50% of the economically active population, the results show additional evidence of the degree of integration of the two border cities.

In order to determine the degree of the correlation of the business cycle of both local economies initially the cyclical components of the series of the economic activities considered, the Hodrick-Prescott filter was applied; subsequently correlations coefficients were estimated. The results showed that both the GDP of San Diego and the state of Baja California showed a high and positive correlation of 0.94 (Table 8). Also, it stands out that the volatility of the cyclical component of Baja California is higher than the volatility of the GDP of San Diego of 1.67.

The high correlation between the GDPs of the border region is related to a variety of economic activities that have interconnections on both sides of the border. Particularly, the transportation and the manufacturing sector exhibited a high correlation, with the San Diego GDP supporting the perception that trade and investment between San Diego and the state of Baja California is becoming an important source of growth in the city of Tijuana. The coefficient of volatility shows that these two sectors are more volatile than the GDP in Baja California. Regarding the service sector, the subsector of lodging and restaurants has a positive and high correlation with San Diego's GDP; however, the real estate subsector did not present a high correlation, probably because the most important expansion is related more to housing projects than real estate for tourism.

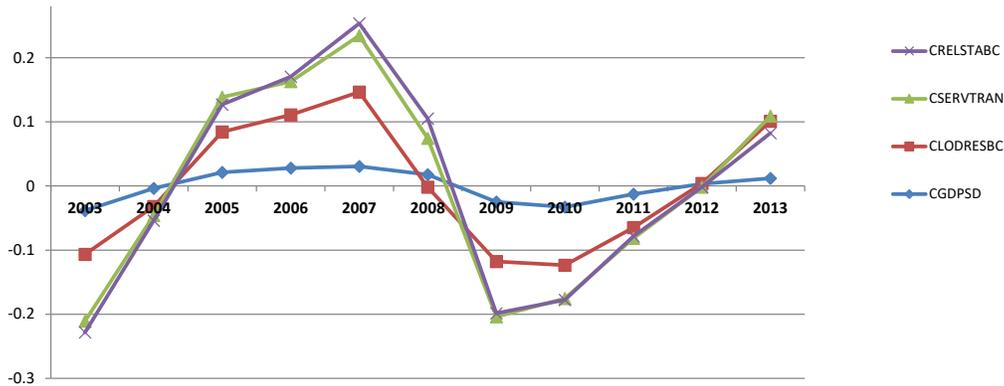
**Table 8: Correlation of cyclical components of San Diego GDP and Baja California main economic sectors**

|   | Correlations                          | Volatility |
|---|---------------------------------------|------------|
|   | <b>San Diego GDP</b>                  |            |
| Baja California GDP                     | 0.9414                                | 1.672474   |
| Baja California manufacturing           | 0.894                                 | 2.186358   |
| Baja California electronics             | 0.558                                 | 3.151106   |
| Baja California lodging and restaurants | 0.889                                 | 3.103914   |
| Baja California transportation          | 0.95                                  | 2.610027   |
| Baja California real state              | 0.348                                 | 0.662782   |
|   | <b>San Diego manufacturing sector</b> |            |
| Baja California manufacturing sector    | 0.277                                 | 1.519828   |
| Baja California electronics             | 0.262                                 | 2.190465   |
| Baja California transportation          | 0.422                                 | 1.814339   |

Source: Own elaboration with information from the INEGI (n.d.) and Bureau of Economic Analysis, United States Department of Commerce (2015).

Finally, correlations were estimated to corroborate the effect of the San Diego GDP on the manufacturing of the state of Baja California (Figure 1). The results showed positive but low correlations between that sector and the subsector of electronics which is an important manufacturing activity in the city of Tijuana. The explanation relies on the fact that the manufacturing sector in Tijuana is more related to investment form Asian economies that are using the proximity of the city as a mean to reduce transportation costs. For that reason, the economy of San Diego and the state of Baja California are integrated in trade, services and in manufacturing activities closely related to the maquiladora industry (Figure 2). Therefore, the synchronization of the business cycles of San Diego and the state of Baja California *has created a space of opportunity* for the development of cooperation of business organizations on both sides of the border.

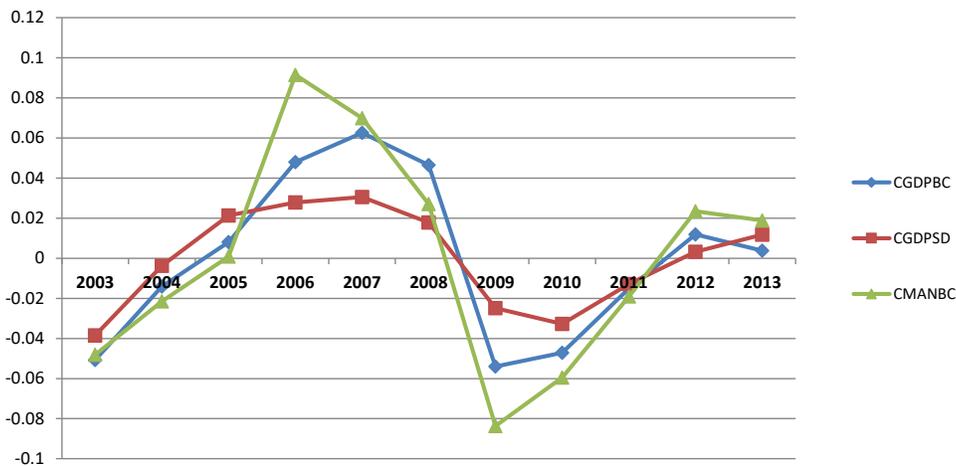
**Figure 1: Cyclical components of San Diego GDP and economic subsectors of Baja California, 2003-2013**



Note: CGDPSD=GDP of San Diego, CRELSTABC= real estate subsector of Baja California, CSERVTRAN= transport subsector of Baja California, CLODRESBC= lodging and restaurant services subsectors of Baja California.

Source: Own elaboration with data from INEGI(n.d.) and Bureau of Economic Analysis, United States Department of Commerce (2015).

**Figure 2: Cyclical components of San Diego and Baja California GDP and manufacturing sector, 2003-2013**



Note: CGDPSD=GDP of Baja California, of San Diego, CMANBC=manufacturing sector of Baja California.

Source: Own elaboration with data from INEGI (n.d.) and Bureau of Economic Analysis, United States Department of Commerce (2015).

### Border relations and economic organizations in the San Diego-Tijuana region

The binational region of San Diego-Tijuana is not exempt from the major problems that derive from two cities with a large gap in income and infrastructure endowments. Additionally, the increasing economic integration encouraged by the establishment of NAFTA has added new complications related to environmental issues, immigration and resource management (Brunet-Jailly, Payan & Sawchuk, 2008).

Accordingly, there are increasing challenges that are imposed by both the differences in economic development of the two cities and the need for regional or binational interaction regarding economic activities, communications infrastructure, environmental problems, health issues, and educational, social and cultural projects. In order to manage those challenges, the actions aimed at promoting and enhancing cross-border cooperation and governance have become imperative.

Although the economic relations between San Diego and Tijuana are predominant in the continuous interaction of the border region, the general framework of the border region shows additional important bonds between Tijuana and the southern cities of the San Diego county (San Ysidro, Chula Vista and South San Diego). This is caused by the important expansion of the Mexican and Hispanic population in the county and its effect on the population of San Diego. But most importantly, the strong commercial and economic links have encouraged the development of economic and business connections of important segments of the population in the border region.

The different challenges associated with the intense economic relations within the border region have encouraged the emergence and development of different types of cross-border organizations, especially since the nineties. However, the progress in developing a regionalism based on the idea of a much broader trans-border region with common interests has faced important challenges and obstacles (Taylor, 2007).

Initially, the interest in cross-border planning began during the sixties when the *Border Area Plan* was established in San Diego. Throughout the mid-seventies the deepening of the ties between the two cities encouraged new initiatives to bring together public and private stakeholders that resulted in more frequent conferences and meetings for planning the development of infrastructure in the border region. Examples of that were the plans for the San Diego Trolley line expansion to San Ysidro, and the expansion of the customs offices at the border. During the nineties, there was a new upsurge in the development of new plans for improving the border area of the two cities. One in particular that stands out is the SANDAG established in 1996, and its Committee on Binational Regional Opportunities (COBRO) which includes elected officials, and representatives of academia, business and community organizations (SANDAG, 2015). The main objective of the committee has been the coordination of planning for watershed research, energy, transportation, data collection, environment, and other border-related issues in the region.

The events of September 11, 2001 had a negative impact on the US-Mexico economic integration at the border level. In the case of the San Diego-Tijuana border region, both private and public stakeholders were constrained from continuing to plan and promote diverse projects in order to fulfill the new objective of securing the border (Herzog & Sohn, 2014). The focus of the federal government was redirected at enhancing the security system of the US-Mexico border by exponentially increasing the financial resources spent on the construction of 670 miles of border fence, increased personnel of the Homeland Security Department and additional technologically enhanced technology for surveillance (Koslowski, 2011).

Cooperation and governance in the San Diego-Tijuana border region have been subject, on the one hand, to the effect of the border enforcement expansion, and on the other, the increasing economic integration encouraged by the establishment of NAFTA (Ackerman, 2011). Hence, the border between San Diego and Tijuana

has been the scenario of a conflict between national security and the increasing and strong economic forces of globalization and liberalization of the markets, which tend to encourage the integration of regions and economic interactions at the border.

In this context, both governmental and civil organizations have had to deal with restrictive control of the border flows that has limited the economic, social, environmental and cultural exchanges. Therefore, trade and investment business activities are restrained by the economic, social and political environment and by the external shocks associated with the international economic recessions that have slowed down the cross-border cooperation and governance. Since the economies of the border states of the US and Mexico are integrated, any economic recessions in the US are rapidly transmitted and affect the main economic variables of their neighboring states in Mexico (Mendoza, 2013).

### Economic organizations in the San Diego-Tijuana border region

In order to understand how the economic forces of integration of the border region have encouraged and influenced the development of business and economic stakeholders, eleven business and governmental organizations were interviewed. The five business organizations considered were: Smart Border Coalition, Mexico Business Center of San Diego Regional Chamber of Commerce, Economic Development Council of Tijuana (*Consejo de Desarrollo Económico de Tijuana*, CTD), San Ysidro Chamber of Commerce and the Economic and Industrial Development of Tijuana DEITAC-EDC (Table 9). In general terms, these organizations bring together leading academic, business and civic communities from both sides of the San Diego-Tijuana border region to develop databases and special events and programs for promoting economic growth of the cross-border economy. They are non-profit organizations financed by state and municipal governments, and the private sector. They also do project planning and implementation for urban development to support economic and social growth. Two of the six organizations are from Tijuana another two from San Diego and two are binational.

The main objectives of the US stakeholders are networking, public awareness and community promotions that generate opportunities to participate in activities and discussions that focus on cross-border commerce, international presence, and economic opportunities that support the economic and social growth of its members. From the Mexican side, the stakeholders are non-profit organizations financed by state and municipal governments, and by the private sector (CDT). Its objectives are planning and implementation for city development and linking actors and interests between California and Baja California regarding economic issues. Particularly, the organization promotes areas such as infrastructure, education, environment, industry and services.

**Table 9: San Diego-Tijuana Border stakeholders interviewed**

| Stakeholders interviewed   | Description  | Area       | Sector           | Origin     |
|--|--|------------|------------------|------------|
| 1. Smart Border Coalition  | Catalyst to bring together leading academic, business and civic communities from both sides of the San Diego/Tijuana International region to develop databases and special events and programs for promoting growth of the cross-border economy. | Business   | Private          | Binational |
| 2. San Diego Association of Governments, SANDAG  | Regional Planning Agency. Association of 18 cities and county Governments of the San Diego region.   | Government | Public           | American   |
| 3. Economic Development Council of Tijuana ( <i>Consejo de Desarrollo Económico de Tijuana</i> ) CDT | Non-profit organization financed by state and municipal governments, and the private sector. Project planning and implementation for city development.   | Business   | Public & Private | Mexican    |
| 4. Economic and Industrial Development of Tijuana DEITAC-EDC   | Non-profit organization formed by Mexican and American companies that provide information services for the business sector.  | Business   | Private          | Binational |
| 5. Mexico Business Center of San Diego Regional Chamber of Commerce                                  | Offers businesses activities and discussions that focus on cross-border commerce, international presence, and economic opportunities.  | Business   | Private          | American   |
| 6. San Ysidro Chamber of Commerce  | Created to support the economic and social growth of its members through networking, public awareness, and community promotions.   | Business   | Private          | American   |
| 7. Binational Affairs, xx City Hall Tijuana  | Municipal City Hall of Tijuana.  | Government | Public           | Mexican    |
| 8. Consulate General of Mexico in San Diego  | The Mexican diplomatic representation or consular post in San Diego.   | Government | Public           | Mexican    |
| 9. Binational Affairs, City of San Diego   | Municipal City Hall of San Diego.  | Government | Public           | American   |
| 10. Mexican Ministry of Foreign Affairs  | To broaden and deepen Mexico's political, economic, cultural and cooperative relationships with all regions.   | Government | Public           | Mexican    |
| 11. Binational Affairs, Baja California State  | This area belongs to Baja California state government and links actors and interests between California and Baja California in economic, social, political, cultural and academic issues.  | Government | Public           | Mexican    |

Source: Own elaboration with information from stakeholder interviews.

It is important to underline the importance of a binational organization called the Smart Border Coalition. The organization describes itself as a facilitator that helps to coordinate leaders of San Diego and Tijuana and includes members from enterprises such as SIMSA Health Care, Kiocera, Sempra, RA Capitol Advisors, Calimax supermarkets, Grupo ATISA and Solar Turbines Caterpillar. It also, embraces public institutions such as the Mayor of Tijuana, the Mayor of San Diego and the Consulates of Mexico and the USA. Its stated objectives are to bring together leading academic, business and civic

communities from both sides of the San Diego-Tijuana International region to develop databases and policy positions, deliver special events and programs, and to encourage growth of the cross-border economy.

With respect to the six governmental organizations oriented to promoting economic development, the following three are the most important: San Diego Association of Governments (SANDAG), Binational Affairs of Baja California State and the Binational Affairs of Tijuana XX City Hall. These types of governmental units are aimed at promoting economic development in the border region. On the US side, the organizations that stand out are both the Municipal City Hall of San Diego and the Regional Planning Agency of the Association of 19 cities and county SANDAG. In particular, SANDAG has a program oriented at promoting economic development along the border. The organization has a Borders Committee (which provides oversight for planning activities that impact the borders of the San Diego region with representatives from the cities in the San Diego and the city of Tijuana and state of Baja California. Their main objectives are to coordinate the planning and delivery of projects for transportation infrastructure and to improve the efficient movement of people, goods, and services between the United States and Mexico.

Other stakeholders interviewed were the San Ysidro Chamber of Commerce and the Mexico Business Center. The first organization was created to support the economic and social growth of its members through networking, public awareness, and community promotions. On the Tijuana side, a governmental organization that stands out is the office of Binational Affairs of Baja California State that links actors and interests between California and Baja California in economic, social, political, cultural and academic issues. Another important organization is the DEITAC, an institution oriented to assist both foreign and Mexican companies planning business ventures in and from Mexico and to find partnerships willing to do business on the Mexican side. Additionally, Mexican companies can be assisted in the promotion of their products in international markets by using a Directory Classified Listing and a Directory Web Page.

## Visions and achievements of the economy of the border

### *Methodological aspects*

The objective of the study is to understand which factors are determining the development of organizations aimed at increasing economic relations and growth at the border. Semi-structured interviews were applied to obtain information for the analysis of the economic factors that are determining the expansion of economic organizations at the border, their struggles, and the accomplishments of the stakeholders considered in the sample of this study. By using the information from the interviews, a data base was constructed to study the economic aspects that are considered central for the activities that are developing at the border. This analytical technique is useful for studying the organizational context, and does not necessarily affect any previous assumptions established in the research. As a result, it can support the results from hard data used in the analysis of the effect of economic integration and business cycle synchronization on the development of cross-

border economic cooperation and governance at the border between San Diego and Tijuana (Schmidt, 2004).

The interviews followed a pattern of questions based on theoretical and empirical findings regarding the process of economic integration and cross-border organizations. As a result, each interview consisted of a set of questions structured around the following themes: personal experience, organizational objectives, achievements of the organization, obstacles for the management of border governance and cooperation, identification of main actors, proposals to improve cross-border economic cooperation and governance, reflections on the border, opinions of NAFTA and its impact on the economy of the border region.

### North American Free Trade Agreement, business synchronization and the emergence of economic organizations

As mentioned previously, geographical proximity has allowed closer economic relations at the border between the USA and Mexico. With the establishment of NAFTA in 1994, the business cycle synchronization between the countries at the regional level greatly intensified. Both FDI and trade have been giving an important boost by NAFTA that has deepened the already existing economic ties between San Diego and Tijuana; this agreement has become an important external shock to the region that has encouraged the formation of economic organizations in the border region.

Regarding the visions of the border, some organizations for economic development consider the border as a “Mega-region” that contrasts with the concept of the national governments of the USA and Mexico. The US government has created a border based on national security criteria, increasing the obstacles for the border crossings and moving away from the integrated vision of the economically linked border region that local actors have encouraged.

For stakeholders supporting business and economic activities that span the border, NAFTA has supported cross-border trade in the region, especially for companies that have operations on both sides of the border. According to one business organization “when NAFTA was signed, the border industries were primarily maquiladoras; however, over time some of them have been transformed into second and third generation manufacturing plants.”

However, for other types of cross-border cooperation related to social, cultural and environmental themes, the parallel agreements and the Committee on the Cooperation of North America that were created to counteract the harmful effects of NAFTA on communities and the environment have not functioned properly. These agreements and commissions have insufficient resources, and their recommendations have not had much response from the federal government.

### *Organizational capacities*

The private organizations generally are organized with Board of Directors and Council and organized by strategic commerce and business plans. Binational organizations include both USA and Mexican senior business members of companies that have plants on both

sides of the border. There is also a working committee with stakeholders governmental officials from both sides of the border.

Regarding the CDT, the general assembly is presided over by the Mayor (*Presidente Municipal*) of Tijuana and the Secretary of Economic Development of the city is the secretary. The government of Tijuana has a great importance for the organization because, even though it is not an official institution, the CDT receives funding from the local government for managing different projects.

Generally, the impact of the organizational capacities is related to the amount of financial funds received by members from the local governments on both sides of the border. The resources are also used for promoting infrastructure projects such as the Otay 2 port of entry (Mexico Business Center) and also for promoting economic sectors such as medical appliances and aerospace manufactures (DEITAC). Therefore, it can be concluded that organizations on both sides of the border are looking to improve the economic infrastructure to allow more intense trade, investments and of people flows between the two urban areas at the border and to encourage economic activities to take advantages of geographical proximity and low wages provide by the city of Tijuana and capital and technology provided by the economy of San Diego.

### *Achievements of economic organizations in the border region*

The stakeholders have generated important achievements that have been concentrated in the economic field. As a result of their efforts, a variety of accomplishments have taken place. With respect to infrastructure projects, the new port of entry called El Chaparral in San Ysidro was built and a second port of entry in Otay has been promoted at the local binational level. In addition various international events have taken place, such as Tijuana Innovadora, with the purpose of promoting alliances that would benefit residents of both sides of the border.

A second important achievement of business cooperation has to do with the development of the international bridge that will connect the Tijuana airport to the USA, called the *Cross Border Express*. With support from the Smart Border Coalition, the development is planned to be finished in 2015 and was funded with investments from both side of the border in collaboration with the Grupo Aeroportuario del Pacífico, which is the enterprise that manages the Tijuana airport. This project will add to the economic interaction between San Diego and Tijuana by providing an opportunity for expanding the number of flights for both San Diego and Tijuana. The facilities will include areas for passengers and guests, retail, food and beverages, and short- to long-term parking and an office of the U.S. Customs and Border Patrol.

In terms of legislative achievements, Senate Bill Initiative 12228 was sponsored by local stakeholders, with the goal of obtaining financial funds for border infrastructure to support businesses located in the area. Also, various agreements have been signed in order to encourage collaboration among the regional chambers of commerce. A central aspect of cross border management is related to the binational cooperation for the development of infrastructure. Joint lobbying both in San Diego and Tijuana (CDT) and at the federal level have been undertaken by American, Mexican and binational organizations in order to establish and operate a railroad that could cross between San Diego and Tijuana.

Therefore, the major projects in the border region have been established mainly to coordinate action to develop infrastructure and encourage new investments in Tijuana

to take advantage of lower costs derived from the proximity to the USA market and the relatively lower wages paid in Tijuana. In particular, important efforts have been made in area such as the electronics, energy, automotive and aerospace industries.

### *Challenges and obstacles for managing cross-border economic cooperation*

The business synchronization of the US and Mexican economies implies that the economic recessions in the USA can have important negative effects in the dynamics of the economic activities which are directly linked to that economy, such as FDI, export manufacturing industries and trade. As a result, the downturn of the US economy in 2008-2009 severely reduced the economic activity in the border region and slowed down the consolidation of economic organizations.

Within this context, stakeholders pointed out that additional obstacles for the economic organizations have been the lack of monitoring agreements, projects and programs due to changing local and federal governments. The negotiations that impact the border are made in Washington D.C. and Mexico City, but there is a lack of knowledge on the part of government agencies about local border issues and problems. Local actors do not have decision-making power because the border is a federal domain closely linked to the issue of national security in the United States, where local actors have no great influence.

Other important obstacles mentioned by the stakeholders are the perception of violence on the Mexican side of the border, the “warnings” to caution the American people not to travel to Baja California, the long daily border crossing delays that increase costs within the local economy, the different languages and the lack of knowledge about cultural practices on both sides of the border.

On the other hand, some stakeholders acknowledge that the border is a region where two cultures and thinking systems meet and diverge. Additionally, it is a border region that is highly unequal where the economic gap is large. Finally, on the one hand, the border region shares ecosystems and on the other hand the economic activity of the maquiladora industry. This requires important cross-border cooperation in order to solve the conflicting interests that can arise from pollution from that industry.

### *Proposals to improve the border cooperation*

The American stakeholders considered that it would be important to have a representative in Mexico, in order to support American firms in promoting economic growth on the Mexican side of the border. They stated that it is important that the economies on both sides of the border have economic growth in order to increase business activity in the border region as a whole. Another significant issue for increasing border cooperation and governance has to do with enhancing the efficiency of border crossings. Regarding this, a proposal could be made to increase the entry ports with rapid access, such as SENTRI and Ready Lane. Also a program to develop improved driving licenses with radio frequency chips could be put into place, similar to what has been implemented in Canada.

On the Mexican side, stakeholders considered that the border “mentality” should be incorporated by the Mexican public officers; the Tijuana major should create a Borders

Public Office. It is necessary that both local governments reach agreements that allow people to move across the border faster and easier. Additionally, a relevant aspect of cooperation at the border has to do with the exchange of students of both countries.

Stakeholders that represent economic associations consider that entrepreneurial cooperation could arise from developing integrated enterprises, such as “CareFusion” which is a firm with a corporate office in San Diego and a manufacturing plant in Tijuana. Another proposal that is related to the economic development of the border region is the establishment of a “migration fund” which could be used to support returned migrants. The financial resources would be used to cover the costs of providing shelter and help migrants to return to their regions of origin in Mexico and could be funded by both the local and federal governments.

In summary, the proposals for better economic cooperation are concentrated on solving the border crossing problems that slow down the possibility of better flows of capital, commodities, and labor, as well as the development of strategic projects to improve economic conditions that would encourage business activities. Therefore, the possibility of solid cross border cooperation is closely associated to the cooperation and synchronization of local and federal public agents and private organizations and businesses, with the aim of making the border more efficient in terms of the economic flows that link both sides of the border.

## Conclusions

The trend towards economic integration between the us and Mexico has affected the economic and social relations in the border region. Given the size of the economy of California and its increasing economic interaction with Baja California, the San Diego-Tijuana border has become one of the most important regions with cross-border economic relations.

The process of economic integration has created a region where on the one hand, the city of San Diego specializes in high-tech activities and, on the other hand, Tijuana provides low-skill labor manufactures and services. However, the degree of development of both cities shows noticeable differences and asymmetries at the economic, political and cultural level. Within this context, the border has become a porous place with intense flows of workers, investments, and trade. The increasing business activities have created a blurred border from the economic perspective.

The statistical correlations of the cyclical components of the GDP and other macroeconomic indicators of San Diego and Baja California were estimated. The results showed positive correlations of Mexican economic indicators such as GDP, manufactures and the service sectors with the GDP of San Diego, and also a high volatility on the Mexican side. It can be concluded that the intensity of the economic activities at the border have interconnections on both sides. Particularly, the transportation and the manufacturing sectors are closely related to the economic activity of San Diego.

The synchronization of the business cycle of the two border cities has been the main force that has encouraged the creation of business organizations. Economic organizations emerged in both border cities and in some cases they were created as binational organizations. The development of those organizations meets the need for cooperation in economic areas and infrastructure projects that contribute to the economic development on both sides of the border.

The private organizations are generally organized by senior business members of companies that have economic activities on both sides of the border, with the participation of governmental officials from both sides of the border. The regional impact of these organizations is related to their capacity for business management and the financial funds of the organizations. The main achievements have occurred in the area of development of economic infrastructure. The positive effect of these improvements is related to the facilitating of trade, investments and people flows between the two urban areas of the border.

It can be concluded that cross-border cooperation is predominately controlled by federal and state governments on both sides of the border. However, the main achievements of cross-border economic cooperation have been accomplished by local private organizations. Therefore, the perspective of further local economic development greatly depends on both the possibility of increased involvement of federal governments and the growing encouragement of regional organizations.

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Jorge Eduardo Mendoza Cota

Mexican. PhD in Economics, Researcher in Departamento de Estudios Económicos at El Colegio de la Frontera Norte (El Colef). Research areas: impacts of economic integration between Mexico and the United States and the phenomenon of migration. Member of the National System of Researchers with Level 3. Publications: *Economía regional moderna: Teoría y práctica* (2006) and *El TLCAN, la frontera y la integración México-Estados Unidos: Aspectos económicos* (Coord.), (2007).