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Employment Associated with Exports in the State of Chihuahua, Mexico

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Introduction

In the 1980s, Mexico changed its foreign trade policies from a long period of protectionism and industrialization based on import substitution (ISI), to an open market economy. Since 1986, after becoming a member of the General Agreement on Tariffs and Trade (GATT), Mexico adopted an export promotion strategy to foster economic development. The following endorsement and implementation of a series of trade agreements with diverse countries prompted the Mexican processes of trade liberalization and economic integration.[1]

Currently, the Mexican economy is the 17th largest in the world, with a national Gross Domestic Product (GDP) of $1,143 billion.[2] The dollar volume of exports in Mexico ($380.6 billion) accounts for about one-third of its GDP, of which about 80 percent is traded with the United States (U.S.).[3] Chihuahua, one of the six states adjacent to the U.S., has the largest dollar volume of exports of all Mexican states. In 2015, Chihuahua exported $40.3 billion worth, which represents 10.6 percent of the national total (Fig. 1). [4]

Implementing export expansion as an economic growth strategy in several countries motivated the study of this relationship; exploring the links between exports and economic growth became a relevant issue by the end of the 1960s. Later, researchers specifically focused on the effects that exports of manufactured goods have on the economic growth of a nation. They also have studied the behavior of employment as an economic performance factor. Interestingly, research results provide mixed conclusions depending of the country's development and the type of good being exported.

With this background in mind, the current study assesses the exports of mining and manufactured goods vis-à-vis employment for the State of Chihuahua, as the leading exporting state in Mexico. The development of Input-Output (I-O) tables for Chihuahua is convenient for conducting a regional analysis because it reveals state inter-sectorial links that other methodologies do not provide. Such tables were built considering the productive linkages between 19 economic sectors, for years 2008 through 2015. Findings of this analysis indicate that the employment associated with Chihuahua's exporting activities represent a substantial portion of the total formal employment in the State (between 44 and 64 percent). In terms of job generation, 591,697 employees were associated, directly and indirectly, to Chihuahua´s exporting activities in 2015 in the State.

This study is organized into five sections. While the first section explores some economic indicators of Chihuahua as background, the second reviews the economic growth literature and its relationship to exporting activities. The third section describes the methodology employed and the model development. The fourth section summarizes the empirical results, and the last section presents a discussion, as well as further research questions to be analyzed.
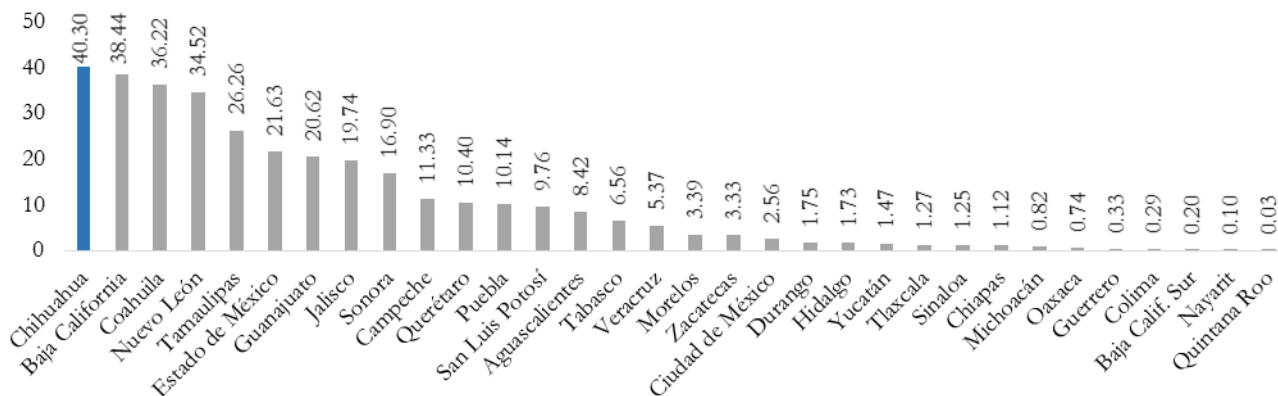

Figure 1
Mexican Exports by State, 2015 (in billions of dollars)
Source: *Instituto Nacional de Estadística y Geografía (INEGI).*

Chihuahua, El Estado Grande en México

Geographically, Chihuahua is located in Northwestern Mexico, and it is bordered by the States of Durango to the South, Coahuila to the East, Sinaloa to the Southwest, and Sonora to the West. Additionally, Chihuahua has an international frontier with the U.S. bordering the States of New Mexico and Texas to the North and the Northeast. This strategic location favors the international trade with the U.S., becoming the Mexico's largest trade partner.

The population in Chihuahua was 3.76 million in the fourth quarter of 2016, which represents slightly over 3 percent of the total population in Mexico (Table 1). Estimates indicate that about three quarters of the total population in Chihuahua are at their working age (above 15 years old). With an Economically Active Population (EAP) of 1,674,505, and Total Employed Population of 1,634,976 Chihuahua experienced a relatively low unemployment rate (2.38 percent) during the last quarter of 2016; the most recent figure available. [5]

Chihuahua has a relatively diversified economy, with three major economic centers: Chihuahua City, the State capital; Ciudad Juárez, an international manufacturing center; and Delicias, the State's main agricultural hub. The Manufacturing and Commerce sectors generate the largest number of jobs in the State with 497,941 and 290,698 respectively. The Agriculture, Forestry, Fishing and Hunting sector follows, with 146,685 employees, as several agricultural hubs across the State generate a considerable number of jobs in Chihuahua (Table 2). Chihuahua produces large volumes of pecans, apples, and oatmeal within several agricultural hubs across the State, such as Delicias, Cuauhtémoc, Guerrero, and Jimenez.[6] In terms of employment, the overall number of jobs in the State of Chihuahua has experienced a consistent growth of about 28 percent since 2010 (Fig. 2).

The State of Chihuahua is the 10th largest economy in Mexico. About 3 percent of Mexico's GDP is attributable to the Chihuahua economy (Fig. 3).[7] Chihuahua serves as crucial commercial route for Mexico, with billions of dollars entering the economy as a benefit from Mexican international trade agreements, such as the North American Free Trade Agreement (NAFTA). In fact, Chihuahua has the largest dollar volume of exports in the country with $40.3 billion, 10.6 percent of the national total.

Table 1
Population Figures, the State of Chihuahua and National, 2016

	Chihuahua (A)	National (B)	% of Nat. (A/B)
Total Population	3,759,864	122,746,451	3.06
Population Under 15 Years Old	1,009,715	32,269,331	3.13
Working Age Population (WAP)	2,750,149	90,477,120	3.04
Economically Inactive Population (EIP)	1,075,644	36,442,320	2.95
Economically Active Population (EAP)	1,674,505	54,034,800	3.10
Employed Population	1,634,976	52,123,674	3.14

Source: *Encuesta Nacional de Ocupación y Empleo (ENOE); Fourth Quarter 2016.*

Table 2
Employment Figures, the State of Chihuahua and National, 2016

	Chihuahua (A)	National (B)	% of National (A/B)
Employed Population	1,634,976	52,123,674	3.14
Agriculture, Forestry, Fishing, and Hunting	146,685	6,920,547	2.12
Mining, Electricity, and Water	18,762	379,300	4.95
Manufacturing	497,941	8,528,629	5.84
Construction	120,972	4,346,696	2.78
Commerce	290,698	9,802,437	2.97
Accomodations and Food Services	92,570	3,848,043	2.41
Transport and Warehousing	53,676	2,647,569	2.03
Professional, Financial, and Corporate Services	91,817	3,565,476	2.58
Social Assistance	107,396	4,170,171	2.58
Other Services	131,100	5,407,012	2.42
Public Administration and International Institutions	58,246	2,217,975	2.63
Not Specified	25,113	289,819	8.67

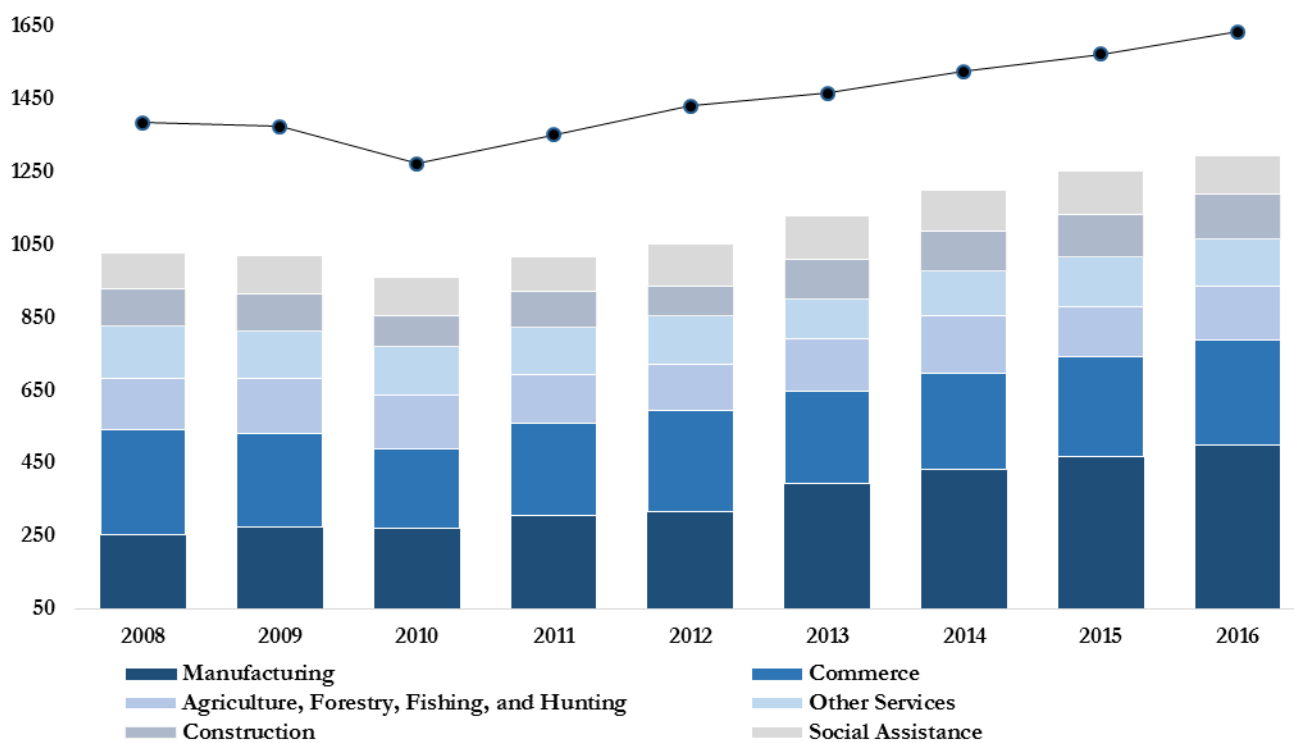**Source**: *Encuesta Nacional de Ocupación y Empleo (ENOE); Fourth Quarter 2016.*

Figure 2
Chihuahua's Employment by Sector, 2008 – 2016 (in thousands)
Source: *Encuesta Nacional de Ocupación y Empleo (ENOE); Fourth Quarter, each year.*
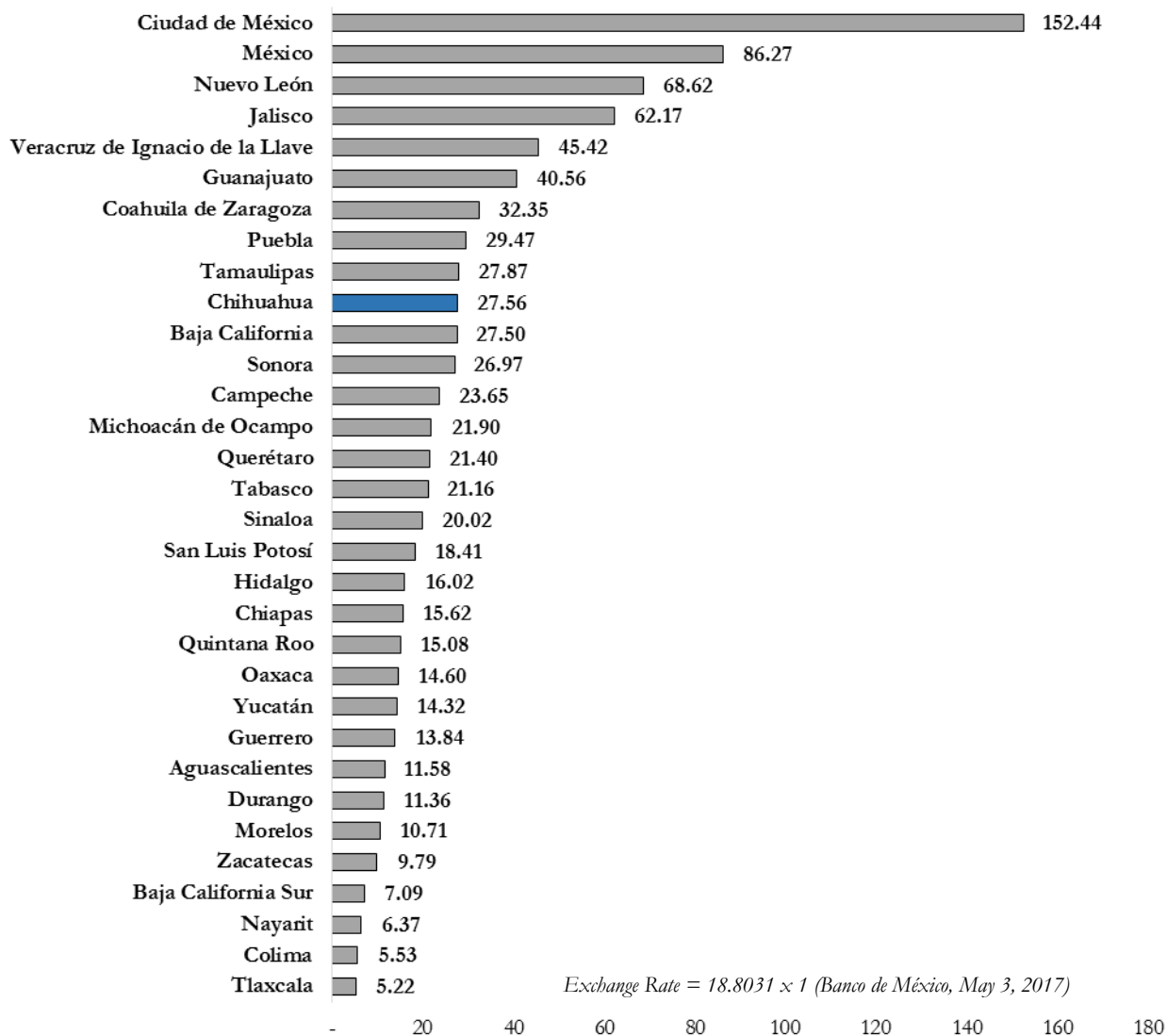
Figure 3
Gross Domestic Product in Mexico by State, 2015
(in millions of U.S. dollars, current prices)
Source: *Instituto Nacional de Estadística y Geografía (INEGI).*

Economic Growth and Exports

The relationship between economic growth and exports appears well documented in the economic development literature.[8] Yet, this relationship seemed unclear during the 1960s, as it was difficult to determine if there was an interdependent or unilateral relationship. Several studies supported the idea that exports function as a key factor in stimulating economic growth; such that, countries eager to advance their economic growth should implement export-oriented policies.[9]

Export-oriented policies can produce diverse results in different countries. For instance, evidence found by *Michaely* indicates that export performance affects economic growth only once a country reaches a minimum level of economic development.[10] *Syron and Walsh* found that, in general, underdeveloped countries expect a smaller impact from exports on growth than developed countries due to their weak institutional framework.[11] However, this positive relationship does not prevail in all studies.[12] Contrasting evidence from *Xu* shows that exports do not cause growth in every nation.[13]

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Alternative approaches to gauge the effects of exports on economic growth incorporate new variables of interest such as manufacturing exports, investment, and manufacturing output.[14] Although findings support the notion that exports have a positive effect on economic growth, the impact depends on the product composition and volume of exports.[15] For instance, *Fosu* found that if a distinction is made between exports of primary and manufacturing goods of less developed countries, positive impacts are associated, almost entirely, with the manufacturing portion of exports.[16] Such type of findings encourages countries to support manufacturing exports over primary goods exports, as a means of maximizing their benefits.

By the end of the 1990s, a widespread consensus arose among economic growth researchers. They coincide that manufacturing exports stimulate economic growth and technological progress.[17] Therefore, manufacturing exports and its relationship with different measures of economic performance, such as employment, are further evaluated. *Radelet*, for instance, found that the magnitude of impact on employment can be determined by the relative size of the manufacturing sector of a country. In many instances in developing countries, export platforms do not create a sufficient number of jobs because a relatively small share of overall employment is related to the manufacturing sector.[18]

Export oriented policies highly influence domestic employment and unemployment rates, due to the increase of demand (domestic and foreign markets together).[19] Changes in the type and volume of exports influence the production of domestic goods, stimulating growth, development, and employment.[20] Thus, export analysis is critical when selecting an economic development strategy; furthermore, studying the relationship between exports and employment becomes relevant for countries who encourage trade as an economic development strategy. These type of studies have been completed

for several nations such as Asian-Pacific countries (Korea, Indonesia, Japan, and China), the Economic Community of West African States (ECOWAS), the European Union, and Latin American countries.[21]

The relationship between exports and economic performance has also been studied in Mexico, particularly, after structural changes associated with the NAFTA. Namely, evidence from *Moreno-Brid et al.* indicated that an increase in exports of manufacturing goods resulted in mild growth in employment and the overall Mexican economy.[22] If an export strategy is used to stimulate employment, a detailed analysis should be performed in advance to determine which specific sectors of the economy would experience the largest impacts from exporting activities.[23]

The most common technique used to study employment via sectorial analysis is the I-O modeling. The nature and structure of this methodology allow the researcher to conduct a detailed analysis at the disaggregated level by industry sector. This type of analysis at the country level has been conducted in several countries, such as in China and Japan, with valuable conclusions as a result.[24]

The effects of international trade on employment by sector using I-O modeling technique have also been examined at the national level in Mexico. For instance, *Aroche et al.* found a large generation of jobs supported by domestic demand, with exports showing only a minimal or even negative effect on local employment when final demand[i] was disaggregated.[25] Similarly, *Ruiz-Napoles* reported that a large percentage of jobs created in Mexico between 1995 and 2000 was attributable to the domestic market, rather than exports, with overall employment impacts (direct and indirect) less than what was expected after the first years of NAFTA.[26] Although sectorial trade impacts on employment using I-O modeling have been studied at the national level in Mexico and other countries, regional studies of this nature do not abound.

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[i] Final demand was disaggregated into its components (domestic demand, exports, and imports) before been analyzed.

Some of the few studies that employ regional I-O modeling were completed using state level data for the U.S. and Mexico. *Coughlin and Cartwright* examined the impact of exports on employment in the U.S. in several states. Their results indicated a positive relationship between exports and employment in most states.[27] *George and Taylor* explored employment impacts from merchandise exports to Mexico at the state level in Texas via I-O modeling. They concluded that merchandise exports to Mexico resulted in only a small fraction of employment growth in Texas.[28] *Ayala et al.* calculated the output and employment multipliers for some states in the Northeast of Mexico, to then estimate the employment associated with their exporting activities with the U.S. and Canada. Their findings indicated that exports to the States of Texas, Michigan, and California generated the largest output and employment impacts of all States in both the U.S. and Canada at the Northeast States of Mexico.[29]

An I-O modeling technique is appropriate for identifying multiplier effects derived from structural changes in the economy, such as an increase in total exports. Given that the I-O model provides detail of the interrelationships among industries, the direct and indirect employment effects associated with exporting activities can be identified. Direct employment accounts for the number of jobs associated with exporting companies; indirect employment accounts for the number of jobs associated with all commercial relationships in the supply chain of exporting companies.

Methodology

The I-O modeling technique is an analytical framework developed by Wassily Leontief in the late 1930s. The fundamental purpose of the I-O modeling technique is to examine the interdependence of industries in an economy.[30] I-O analysis employs sectorial purchase/sales relationships to illustrate how industries and institutions are linked by the intermediate inputs they provide one another to produce a final output. An I-O model, essentially, captures all rounds of inter-industry/institutional relationships that form the production processes of industries in a given economy.[31] Therefore, an I-O model can be used to estimate economic impacts derived from a particular change or shock in a region's economy, such as a new construction project or a change in public policy being implemented.

Although I-O modeling studies have been conducted for several states in Mexico, this research project is the first one of its kind that examines the State of Chihuahua using a multi-year evaluation. The process that describes the generation of I-O tables for the State of Chihuahua, and the use of those tables to estimate direct and indirect employment associated with State exports requires a mathematical calculation that involves four stages.

In the first stage, the INEGI national I-O tables available (2008 and 2012) are used to produce a complete time series from 2008 through 2015. Although national I-O tables are not developed on a yearly basis, INEGI provides complementary data (e.g. gross production, gross value added, intermediate demand and consumption) that can be used to produce tables for intermediate years via the RAS methodology. The RAS methodology, or "biproportional" matrix balancing approach, is a non-survey technique commonly used to update I-O tables' coefficients using a given year as basis of estimation.[32] This method was originally designed by *Stone and Brown*, and extensively tested by *Bacharach* to solve the problem of updating a given old I-O table to a more current, or even future period for which only row and column totals are given.[33] While the 2009-2011 national I-O tables are produced using 2008 as base year in this study, the 2013 - 2015 tables use 2012 as year estimating origin.

In the second stage, the State I-O tables for Chihuahua are produced from the corresponding national tables generated in the first stage. This process follows the FLQ approach, or Flegg location quotients, to estimate state figures from national data via regional specialization.[34] State GDP, as well as

some national figures, such as average propensity to import and effective taxes on products, are used to derive the I-O tables for Chihuahua. These tables consist of a 19x19 matrix where the relationships between each one of the 19 sectors of the economy are detailed.

In the third stage, the technical coefficients matrix is calculated as a proportion of output per sector and total gross production. Such calculation is applied to all 19 sectors of the economy. The technical coefficients matrix (19x19) represents the sectorial relationship of production and output for all 361 links in the State economy.

In the fourth stage the output and employment multiplier matrices are developed. The output and employment multipliers have a final row for each sector, known as the column vector summation. This figure represents the increase in output or employment, respectively, resulting from an additional unit incorporated into any sector in the economy, while considering the interindustry relationships.

The employment multiplier is used in this study to calculate the total employment (direct and indirect) associated with state exports in Chihuahua, Mexico. Total exports of the mining and manufacturing sectors are multiplied by the respective employment multiplier column vector summation to generate the number of employees in each supplier sector of intermediate inputs associated with the amount of exports. The amount of exports in Chihuahua is reported by INEGI in millions of U.S. dollars at a yearly basis, and only includes the Mining and Manufacturing sectors of the economy. This figure was converted to Mexican pesos using the Banco de Mexico average annual exchange rate for each year included in the study. The calculation detailed above is made for the eight years examined in this study, 2008 through 2015.

Empirical Results

According to INEGI, the State of Chihuahua exported $643,631 million pesos worth of mining and manufacturing products to the rest of the world in 2015. The results in this study indicate that such volume of exports supported 591,697 formal sector employees (direct and indirect) in the State in that same year (Table 3). The distinction between formal and informal sector employees is pertinent because the informal employment in Mexico is relatively large. In 2016, it was estimated that about 35.4% of the employed population in Chihuahua has an employee in the informal sector. Since estimates of formal sector employees in the State of Chihuahua accounted for 1,161,777, 50.93 percent of formal employment in Chihuahua was associated with the State exporting activities during that year. Employment associated with exports in the State increased from 427,969 in 2008, to 671,322 in 2014 (about 57 percent). Then, this employment amount fell about 12 percent during 2015, reaching 591,697 jobs (Table 4). The uncombined estimates for the manufacturing and mining exports are available in the Appendix (Table A1).

The difference between manufacturing and mining exports in Chihuahua is substantial; manufacturing exports represented 97 percent, or more of these two sectors. Therefore, the associated employment with manufacturing exports was studied individually. Employment associated with manufacturing exports totaled 576,369 during 2015, almost 35 percent higher than the 2008's volume of 427,694, but about 11 percent lower than the 2014's number (646,623).

Finally, employment associated with manufacturing exports can be disaggregated in direct and indirect employment estimates. Direct employment associated with manufacturing exports in the State of Chihuahua accounts for 78.3 percent of the total associated employment in 2009, and grows to 84.4 percent by 2015 (Table 5).

Table 3

Exports, Employment and Associated Employment in the State of Chihuahua, 2008 - 2015

	2008	2009	2010	2011	2012	2013	2014	2015
Exports, Mining and Manufacturing sectors[a] (million of pesos)	$ 310,955	$ 336,201	$ 438,124	$ 480,030	$ 548,112	$ 562,769	$ 609,366	$ 643,631
Estimated Number of Formal Employees in Chihuahua[b]	970,009	911,504	951,056	906,503	979,700	1,105,407	1,143,416	1,161,777
Employees Associated with Exports[c] (Mining and Manufacturing sectors)	427,969	423,739	557,028	580,766	566,830	638,881	671,322	591,697
Percentage of Employment Associated with Exports (Direct and Indirect)	44.12%	46.49%	58.57%	64.07%	57.86%	57.80%	58.71%	50.93%

Source:
[a]: Instituto Nacional de Estadística y Geografía (INEGI);
[b]: Encuesta Nacional de Ocupación y Empleo (ENOE);
[c]: Author's own calculations.

Table 4

Employment Associated with Manufacturing and Mining Exports in the State of Chihuahua, 2008 - 2015

	2008	2009	2010	2011	2012	2013	2014	2015
Manufacturing and Mining Sectors								
Agriculture	12,210	16,098	23,961	27,779	25,371	23,098	20,609	13,854
Mining	595	2,260	5,549	4,198	6,035	14,486	34,025	18,980
Utilities	998	689	1,239	1,520	2,130	1,520	884	890
Construction	71	62	121	149	108	180	216	234
Manufacturing	383,139	352,543	467,176	500,793	485,599	539,718	548,239	501,893
Retail and Wholesale Trade	16,399	29,261	37,719	25,041	27,955	37,945	44,568	35,919
Transportation and Warehousing	2,036	2,574	3,048	2,187	2,685	2,587	4,122	2,926
Information	309	414	457	579	319	509	419	345
Finance and Insurance	254	419	860	780	368	542	382	453
Real Estate and Rental and Leasing	79	147	108	117	63	151	133	180
Professional, Scientific & Technical Services	5,018	4,597	3,114	3,006	3,451	3,001	1,705	2,356
Management of Companies and Enterprises	286	-	46	53	-	61	34	-
Administrative and Support, Waste Mgmt & Remediation Services	3,401	10,170	9,067	10,375	9,327	9,787	11,410	9,250
Educational Services	15	6	8	6	6	7	8	6
Health Care and Social Assistance	-	-	-	-	-	-	-	-
Arts, Entertainment, and Recreation	1	6	9	2	2	3	5	8
Accommodation and Food Services	1,266	1,643	1,498	1,322	1,502	1,919	1,586	1,192
Other Services (except Public Administration)	1,890	2,847	3,046	2,858	1,906	3,366	2,968	3,205
Public Administration	1	2	3	2	1	2	9	7
Total	**427,969**	**423,739**	**557,028**	**580,766**	**566,830**	**638,881**	**671,322**	**591,697**

Source: *Authors' own calculations.*

Discussion

This analysis examines the relationship between employment and exports in the State of Chihuahua. It indicates that about half of the formal employment in the State can be directly or indirectly associated with exporting activities. In fact, during 2011 the percentage of formal sector employment peaked at almost two-thirds (64 percent) of total formal sector employment (Fig. 4).

Employment associated with manufacturing exports represents the vast majority (more than 97 percent) of the State's total estimates. After disaggregating employment into direct and indirect figures, the share of indirect employment appears relatively low, at or below 22 percent. Moreover, the indirect employment share shows a downward trend across the examined years, reaching its lowest point in 2015, the most recent observation, with 15.61 percent (Fig. 5).

A low indirect employment share with respect to total employment denotes that the amount of intermediate inputs used for the completion of products (or services) is brought from outside of the economy under analysis. The indirect employment share associated with manufacturing exports in Chihuahua (22 percent or less), implies that such volume of raw materials or intermediate inputs were imported from outside the State. Employment associated with manufacturing exports does not create a significant link with other sectors of the economy, because intermediate inputs are mostly imported. Such tendency, rather than being reverted, has been exacerbated in the most recent years. This is the result of local producers not having the opportunity of providing demanded inputs related to manufacturing exports.

Exporting activities, particularly manufacturing exports, are crucial for the economic development of the State of Chihuahua. The number of employees in the State associated with exporting activities is substantial. Additionally, a relatively large number of employees working in the formal economy in Chihuahua is associated with the extensive exporting activities. Chihuahua's informal employment estimates represent about 35 percent of the total, while states with low exporting activities exhibit larger informal employment, of 50 percent or higher.[35] Having a large number of employees working in the formal economy represents additional benefits to state and federal governments due to a greater tax payer base.

Encouraging manufacturing exports may be a prosperous strategy for stimulating the economic development of the State of Chihuahua. However, incorporating local suppliers of products and services into the supply chain of exporting related businesses in the State remains a challenging task and a key priority for the future. It can be the case that local suppliers are not aware of the potential business expansion they could obtain from incorporating their products or services into the Chihuahua supply chain of exporting related businesses. Conversely, local suppliers may not fulfill the requirements for incorporating into the supply chain. In any case, State government should attend local businesses' conditions, and encourage them to participate in the supply chain of exporting related businesses. If this type of collaboration can be achieved, the State could maximize the benefits of a natural geographic condition, and improve the Chihuahua's economic development.

A natural extension to this study would be to quantify the contribution of exports to the creation of formal employment in Chihuahua under alternative definitions, such as workers that have access to social security. Also, it would be interesting to assess the generation of employment derived from other demand components such as household consumption, investment, and public expenditure.

Table 5.

Employment Associated with Manufacturing Exports in the State of Chihuahua, 2008 - 2015

|	2008	2009	2010	2011	2012	2013	2014	2015
Employees Associated with Manufacturing Exports	427,694	420,654	550,930	574,544	559,882	626,677	646,623	576,369
Employees Associated with Manufacturing Sector; Direct	349,393	329,327	440,882	471,557	453,403	506,946	525,542	486,415
Employees Associated with Manufacturing Exports; Indirect	78,301	91,327	110,048	102,987	106,479	119,730	121,081	89,954
Percentage of Direct Employment Associated with Manufacturing Exports	81.69%	78.29%	80.02%	82.07%	80.98%	80.89%	81.27%	84.39%
Percentage of Indirect Employment Associated with Manufacturing Exports	18.31%	21.71%	19.98%	17.93%	19.02%	19.11%	18.73%	15.61%

Source: *Author's own calculations.*
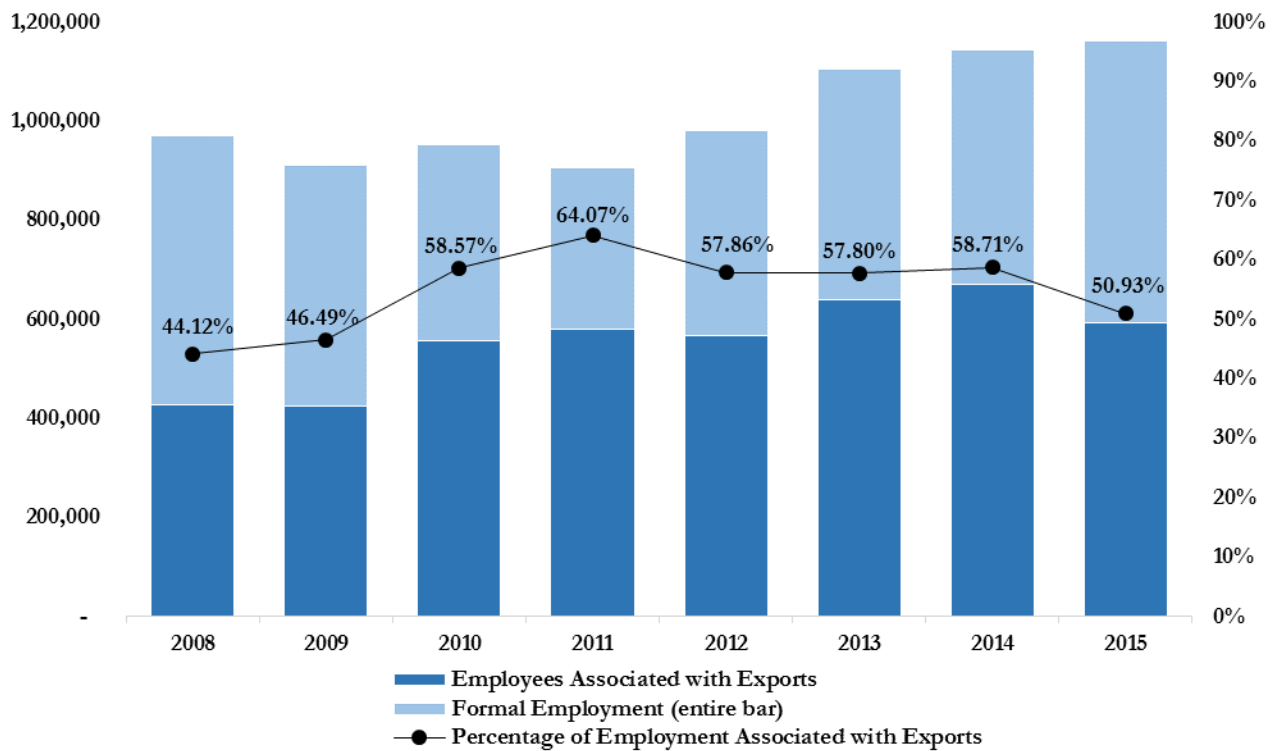
Figure 4

Associated Employment with Manufacturing and Mining Exports as a Share of Formal Employment in Chihuahua, 2008-2015

Source: *Author's own calculations.*

Figure 5
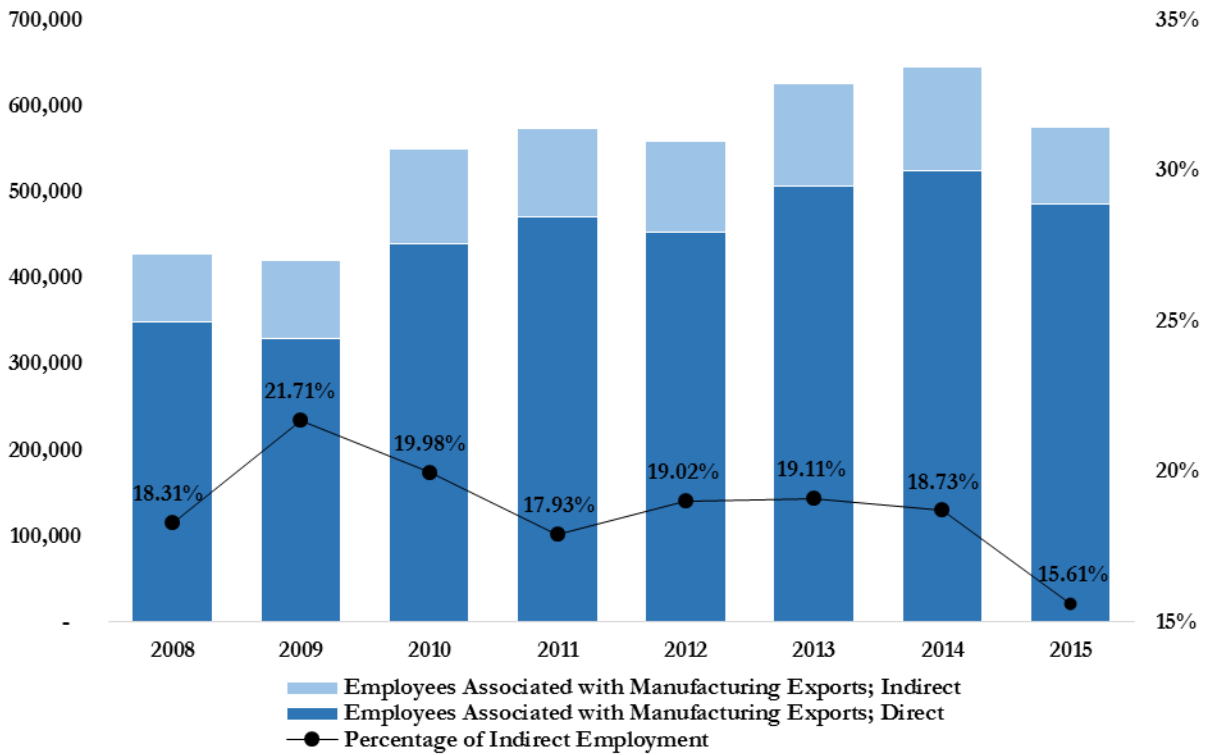**Direct and Indirect Employment Associated with Manufacturing Exports in Chihuahua, 2008 - 2015**
Source: *Author's own calculations*

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Appendix.

Table 1A

Employment Associated with Manufacturing and Mining Exports (uncombined)

in the State of Chihuahua, 2008-2015

	2008	2009	2010	2011	2012	2013	2014	2015
Manufacturing Sector								
Agriculture	12,209	16,086	23,937	27,735	25,324	23,061	20,592	13,844
Mining	472	776	1,739	1,111	2,007	5,439	11,967	5,806
Utilities	996	676	1,207	1,460	2,038	1,459	856	854
Construction	69	48	84	90	72	123	153	162
Manufacturing	383,101	352,286	466,717	500,007	484,704	538,844	547,786	501,555
Retail and Wholesale Trade	16,377	28,878	37,044	24,361	27,248	37,024	43,545	35,145
Transportation and Warehousing	2,032	2,534	2,986	2,125	2,624	2,530	4,037	2,869
Information	308	402	439	544	300	480	399	327
Finance and Insurance	252	391	786	688	333	494	349	417
Real Estate and Rental and Leasing	79	143	103	110	59	141	126	170
Professional, Scientific, and Technical Services	4,972	4,252	2,815	2,614	3,089	2,702	1,542	2,144
Management of Companies and Enterprises	282	-	40	44	-	52	29	-
Administrative and Support, Waste Mgmt & Remediation Services	3,387	9,846	8,693	9,776	8,895	9,355	10,933	8,888
Educational Services	15	6	8	6	6	7	8	6
Health Care and Social Assistance	-	-	-	-	-	-	-	-
Arts, Entertainment, and Recreation	1	6	9	2	2	3	5	8
Accommodation and Food Services	1,259	1,561	1,398	1,189	1,380	1,771	1,470	1,110
Other Services (except Public Administration)	1,884	2,762	2,922	2,682	1,801	3,190	2,821	3,057
Public Administration	1	2	3	2	1	2	9	7
Total	**427,694**	**420,654**	**550,930**	**574,544**	**559,882**	**626,677**	**646,623**	**576,369**
Mining Sector								
Agriculture	1	12	24	44	47	37	17	9
Mining	124	1,484	3,810	3,087	4,028	9,047	22,058	13,175
Utilities	2	13	33	59	92	61	28	36
Construction	2	14	37	59	37	57	63	71
Manufacturing	39	258	458	787	895	874	454	338
Retail and Wholesale Trade	22	383	675	680	707	921	1,023	774
Transportation and Warehousing	3	40	62	62	61	57	86	57
Information	1	12	18	34	20	29	20	18
Finance and Insurance	2	28	74	92	35	49	33	37
Real Estate and Rental and Leasing	-	5	5	8	5	10	7	11
Professional, Scientific, and Technical Services	47	346	298	392	362	299	163	212
Management of Companies and Enterprises	5	-	6	9	-	8	4	-
Administrative and Support, Waste Mgmt & Remediation Services	14	324	374	599	432	431	477	361
Educational Services	0	-	-	-	-	-	-	-
Health Care and Social Assistance	-	-	-	-	-	-	-	-
Arts, Entertainment, and Recreation	0	-	-	-	-	-	-	-
Accommodation and Food Services	7	82	100	133	122	148	117	82
Other Services (except Public Administration)	6	85	124	176	105	176	147	148
Public Administration	0	-	-	-	-	-	-	-
Total	**274**	**3,085**	**6,098**	**6,221**	**6,948**	**12,205**	**24,699**	**15,328**

Source: *Author's calculations.*

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