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Micheli Thiri6n, Jordy

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FDI, regional development and structural change. The Case of three states in El Bajío, Mexico^{*}

Inversión Extranjera Directa, desarrollo regional y cambio estructural. El caso de tres estados en El Bajío, México

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*Jordy Micheli Thirión^{**}*

ABSTRACT

Regional development in contemporary economy rests, to a large extent, on investment by multinational companies and the growth of advanced services. This article describes the specific trajectories of three Mexican states that make up the El Bajío region, and that share an industrialization model based on FDI. Using structural indicators of development, the similarities and differences between Aguascalientes, Guanajuato, and Querétaro, are shown and compared. The exercise concludes that Guanajuato and Querétaro are similar in terms of the diversification of their manufacturing sector and the level of development of their tertiary sector, whereas Aguascalientes has a less developed tertiary sector and a more concentrated manufacturing sector. The relative importance of automotive FDI plays a role in the specificity of the regional paths to structural change.

Keywords: Foreign direct investment; structural change; advanced tertiarization; El Bajío.

JEL Classification: F21; F63; O14; R11.

RESUMEN

El desarrollo regional en la economía contemporánea descansa en gran medida en las inversiones de empresas multinacionales y el crecimiento de los servicios avanzados. Este artículo describe las trayectorias particulares de tres estados que componen la región de El

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^{**} Professor-researcher. Department of Economics. Universidad Autónoma Metropolitana Azcapotzalco, Mexico. E-mail: jordy.micheli@gmail.com.

Bajío, y que comparten un modelo de industrialización basado en Inversión Extranjera Directa. Se utilizan indicadores estructurales del desarrollo para analizar las similitudes y diferencias entre Aguascalientes, Guanajuato y Querétaro. El resultado del análisis arroja que existe una mayor similitud entre Guanajuato y Querétaro por la diversificación manufacturera y el avance del terciario avanzado, en tanto que en Aguascalientes tiene lugar una mayor concentración manufacturera y un menor avance del terciario avanzado. El texto también muestra el papel relevante que juega la industria automotriz en los tres casos estatales estudiados y su relación con las respectivas trayectorias de cambio estructural.

Palabras clave: Inversión Extranjera Directa; cambio estructural; terciarización avanzada; El Bajío.

Clasificación JEL: F21; F63; O14; R11.

INTRODUCTION

The aim of this article is to analyze the structural change in three Mexican states, Aguascalientes, Guanajuato, and Querétaro, that constitute the historical region known as El Bajío and that share an industrialization pattern based on Foreign Direct Investment (FDI). These states received an accumulated direct investment of USD \$27.6 billion in several manufacturing sectors (in the period from 1992 to 2017). Of this, 84.6% was allocated to the same manufacturing sectors in each state, and particularly to the automotive industry, a concentration that underlines the homogeneity of their industrialization model.

Structural change is defined as economic growth involving a transformation of production and employment structures from labor-intensive sectors to knowledge-intensive sectors. Kuznets (1973) argued that contemporary economic growth is based on accelerated structural change resulting from the transition from manufacturing to service sectors and the organizational modernization of production units characterized by increasing size and labor professionalization.

The analysis discussed in this article was done on a regional scale, although it is recognized that structural change adopts a diversity of forms and outcomes in the continuous and complex evolution of societies. When transnational factors are present, these become local processes when combined with national or regional processes, giving rise to specific structural transformation trajectories (Chenery, Robinson and Syrquin, 1986).

This article attempts to show the different trajectories of structural transformation of three Bajío states, with a regional industrialization model homogeneously based on FDI. The analysis is guided by the hypothesis that uniformity in the sectoral content, objectives and dynamics of FDI received in the three neighboring states is the driver of the industrialization process associated with a similar pattern of advanced tertiarization among the three states. This association is sought conceptually, rather than statistically and is based on an analysis of the

tertiarization of regional economic structures (Bailly and Maillat, 1989; Illeris and Philippe, 1993; Cuadrado-Roura, 2016; Micheli 2016, 2019). A similar pattern of structural change would show that advanced services are more dynamic than other sectors, including manufacturing. This difference between sectoral dynamics is a defining characteristic of a mode of regional economic development.

The article is divided in five parts: I) a brief review of the structuralist approach to development, II) a background of regional FDI concentration in El Bajío, III) the methodology used, IV) a structural description of El Bajío's industrialization, V) a description of advanced tertiarization and structural change in El Bajío.

I. FDI AND STRUCTURAL CHANGE: THE BACKGROUND

The structuralist tradition considers economic development as a process characterized by product growth and a mix of qualitative and quantitative changes in production and employment structures (Kuznets, 1973). Development is specific to concrete spatial realities (Kottaridi and Stengos, 2010; Syrquin, 1988). At the same time, globalization processes and the expansion of new tertiary sectors, two features of the contemporary phase of the economy, influence structural change at both the national and regional levels.

From the perspective of regional economic development, FDI is the quantifiable dimension of the local agglomeration of production capabilities that leads to industrialization via direct and indirect employment, human resources training, and the emergence of goods and services supply firms. FDI drives change processes, leading to higher added value in the targeted sectors and corporate modernization, both of which are significant elements of structural change at a regional level.

Therefore, the relationship between FDI and structural change is fertile ground for analyzing the role of multinational companies in the economic development of host countries. A micro-perspective provides an analysis of how the presence of foreign firms influences economic actors in the territory through commercial or knowledge relationships as well as through different types of externalities. A macro or structural approach identifies the effects of the process on production levels, employment, wages, etc., which allows for comparisons between countries or regions. Both approaches complement each other and shed light on the relationship between FDI and economic development since the activity of the multinational firm is reflected in the changes in production and employment structures that characterize certain territories.

A research line which incorporates both approaches, looks specifically at spillovers in developing countries. Kumar y Pradhan (2005) synthesize their findings and argue that results are not indisputable and should rather be considered as dynamic,

as MNEs that enter local socioeconomic contexts generate different relationships and spillovers over time due to the creation of local learning effects. This is key in exploring evidence of structural change.

The importance of FDI as a development factor connects with contemporary trends of economic tertiarization. Pineli, Narula, and Belderbos (2019) show that at a national level, structural change moves towards advanced services sectors when FDI is focused on manufacturing. This finding is like other global reports on the link between advanced sectors and manufacturing under a new production model (OCDE, 2000; UNCTAD, 2017). Service-led structural change has been a driving force in highly qualified jobs, as shown by Buera and Kaboski (2009), among others.

The growing presence of multinational companies at a regional level is one of the drivers of economic growth in a global economy; the complexity of the local effects of such a presence on employment, salaries, and business and knowledge spillovers has drawn the attention of academia, although so too has the lack of insight regarding the merit of such benefits and their longevity (Mullen and Williams, 2005; Jones and Wren, 2006).

The difficult relationship between industrial plants owned by multinational companies and local technical and human resources (and the resulting limitation of spillover effects) was analyzed by Dunning and Narulla (2010), who pointed out that multinational companies can generate certain indirect local benefits and promote the generation of local industrial development only when their internal activity results in positive externalities and when national firms have the capacity to seize these externalities.

In this sense, several studies of the Mexican experience have shown that the FDI model presents strong barriers for the development of local industrial potential, both for the integration and support of local suppliers (Benitez and Mungaray, 2000; Dussel, Galindo and Loría, 2003) as well as for the generation of knowledge spillovers (Contreras, Alonso and Carrillo, 2012). Case studies have highlighted an imbalance between the advancing trajectories of export manufacturing plants and the quality of the jobs they provide: technification and innovation are inversely proportional to the social progress of the plant's workers (Bensusán, Micheli and Carrillo, 2017).

This being so, the analysis of the sectoral structure in contemporary economy, whether at the national or regional level, should include new perspectives of the role of services that add dynamism in terms of productivity, employment, added value, and innovation. Their growing presence reflects a structural change that can be defined as the combined evolution of an advanced tertiary sector and a manufacturing sector in a functional relationship (Daniels & Bryson, 2002; Kallenberg y Oliva, 2003; Pilat & Wolf, 2005). From a qualitative analysis perspective, this process of regional advanced tertiarization poses the challenge of recognizing and analyzing the forms of interaction between the production of goods and services and their effect on a regional

economy. As pointed out by an already extensive body of academic literature, advanced services represent a development force at the local level (Bailly and Maillat, 1989; Illeris and Philippe, 1993; Cuadrado-Roura, 2016). The role of tertiarization as a transforming phenomenon in Mexican economic regions has been addressed, among others, by Coll-Hurtado and Córdoba (2006), Aguayo and Alvarez (2007), García (2011), Garza (2011), and Micheli (2019)

II. THE REGION: EL BAJÍO

It is worth recalling the dynamic role played by FDI in Mexico's industrialization model, as a result of the North American Free Trade Agreement (NAFTA) in 1994. These investments were mainly aimed at creating an export platform to the US market and were regionally distributed between the center of the country and the urban territories near the American border. Most FDI was concentrated in the automotive and electronics manufacturing sectors, followed by others such as food and aeronautics.

Recent data indicate that Mexico receives 4.2% of global FDI, occupying the tenth position in the ranking of countries by received FDI (World Bank, 2015). Its average annual FDI¹ was 24.4 billion dollars from 2000 to 2103 (see table 1), with the largest proportion of these investments directed to the sectors of manufactured goods (47.6%), financial services (16.3%), and commerce (8.0%). For the Mexican economy, FDI flows represented an average of 2.7% of the GDP in the period from 1999 to 2010.

El Bajío is a historically rooted social and economic region located in central Mexico (Bataillon, 1969). Although it is composed of eight states, Aguascalientes, Guanajuato, and Querétaro form the core of the region and its economic axis. These three states have been important recipients of foreign direct investment (FDI) and have been the center of the manufacturing industrialization process that has taken place over the last 20 years. The massive injection of foreign capital began in 1998, and the automotive industry has been one of the most favored by this. The three states received 8.4% of FDI in the Mexican manufacturing sector and 22.8% of FDI in the automotive industry during the period from 1992 to 2017 (figure 1). These investment flows created new production centers focused on the international market within the context of the North American Free Trade Agreement (NAFTA), signed in 1994.

¹ The accounting sense of FDI includes new investment flows as well as those derived from reinvestment. This difference is irrelevant in the case under study because FDI includes investment in production activities that create an agglomeration effect associated with the regional economy.

Figure 1
Location of the three states in El Bajío region and cumulative FDI (in Billions of dollars)



Source: Author's elaboration based on data gathered from the Ministry of Economy (2018).

These three states took their first steps toward an industrialization based on both traditional manufacturing and the integration of large companies looking to decentralize their facilities in the 1960s. Despite their different circumstances, the states thus shared common traits regarding their entry into the early globalization process. Their contemporary industrial base was built at the end of the 1960s and was driven by local policies within the framework of the last phase of the stabilizing development model, which sought exports and investment by multinational companies.

Literature that has analyzed the modernization of the industrial sector in the Bajío region includes authors such as Salmerón (1998), Gutiérrez and Gutiérrez (2006) and López (2017) in the case of Aguascalientes; Estrada (2006), Unger-Rubín (2011), and Vangstrup (2015) in the case of Guanajuato; and Delgado (1993) and Daville-Landero (2012) in the case of Querétaro. This has been enriched with recent studies on the industrialization of the Bajío region using different perspectives. Unger, Garduño and Ibarra (2014) studied certain advantages associated with the economic power of important cities in El Bajío at the municipal level, as a driver of regional development. Micheli (2016) developed a first approach to the structural change in two states of El Bajío, using service-manufacturing sensitivity ratios. García and Martínez (2018) showed that automotive FDI received by the state of Guanajuato has resulted in employment and export benefits supported by active policies by the local authorities.

III. METHODOLOGY

The methodology involved a statistical description in a traditional sequence of regional analyses: 1) identification of local agglomeration of production capacities, represented by FDI, 2) trajectory of concentration or diversification of the local production structure, and 3) sectoral change in production, employment, and labor income, in this case stressing the rise of an advanced tertiary sector.

We began by analyzing the evolution of the sectoral composition of FDI in the three states during the period 1992-2017, with the aim of showing the differences and similarities in the progression of the states and to determine the most important phases in each. Data were obtained from the Ministry of Economy (ME, 2018). The annual investment amounts represent the sum of three components: new investments, reinvestment of earnings, and inter-company debt (47.5%, 28.7%, and 23.8%, respectively, based on calculations by García and Martínez, 2018, p.107).

The paths of each state's concentration or diversification of the manufacturing production structure were then identified and compared in order to include a traditional indicator in the regional development pattern that would allow for an understanding of a classic issue in the regional economy: specialization versus diversification as driving processes for better economic performance.

The third tool of analysis was a comparison between the growth rates of three production variables (product, employment, average wage) between 2003 and 2013, in three sectors: the automotive industry, non-automotive manufacturing, and the advanced tertiary sector. The three variables and three sectors are indicators of the core process of structural change: the combined and unequal evolution of manufacturing and services. This reveals the patterns of local structural change in

economies subject to the dynamism of a predominantly automotive FDI. The data for these basic statistical exercises came from *Instituto Nacional de Estadística y Geografía* (INEGI, 1999, 2004, 2007, 2009, 2014)

In order to select the service activities considered to be advanced services, a similar classification to Guerrieri and Meliciani (2005) was used. These authors refer to a broad set of services necessary for firm activity that are characterized by their dynamism, productivity, and technological level: Financial, Communication, and Business (FCB) services. Thus, the tertiary activities included in the analysis come entirely from the following INEGI sectors: (51) mass media information, (52) financial and insurance services; (54) professional, scientific, and technical services; (55) corporate and enterprise management; (56) business support services and waste management and remediation services².

To contextualize the macroeconomic size of the advanced services sector that developed from the combination of the above five sectors, it is noted that between 1998 and 2013, the proportion of advanced services in the GDP increased from 19.0% to 21.5%, while the proportion of manufacturing decreased from 34.7% to 29.7%. This illustrates the structural transformation in Mexican macroeconomics.

IV. STRUCTURAL INDICATORS OF REGIONAL INDUSTRIALIZATION

This section describes the main structural features of the industrialization process in Aguascalientes, Guanajuato, and Querétaro thus far in the twenty-first century. The industrialization originated in structural changes as it is related to physical and human capital accumulation and shifts in the sectoral composition of economic activity.

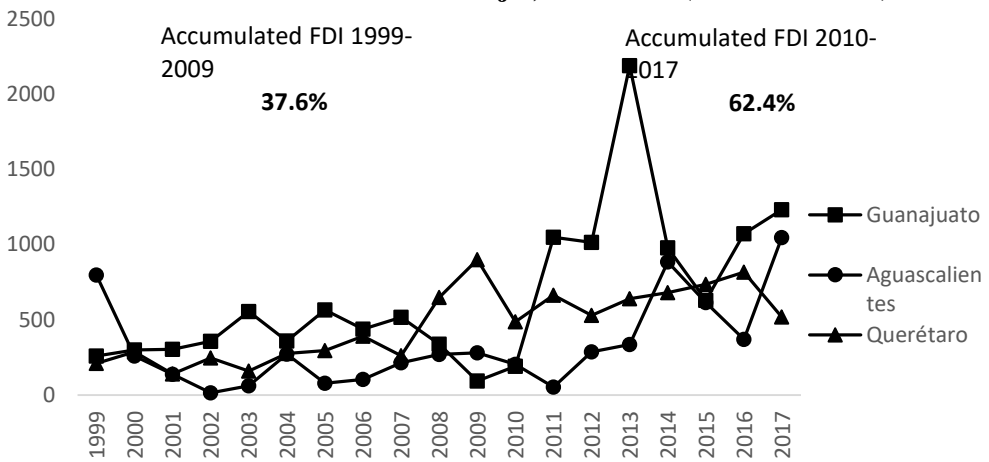
The massive entry of foreign investment in manufacturing activities in the region under study began in 1999. Although investment increased steadily in the three states from 1999 to 2017, as figure 2 shows, in each state the investment had a specific trajectory.

Figure 2 shows an overall increase in FDI in the three states during the second half of the period under study. Indeed, of the total FDI from 1999 to 2017, 37.6% corresponds to the period from 1999 to 2010, and 62.4% corresponds to the period from 2010 to 2017. These proportions suggest that the effects of FDI on structural change will probably be more notorious over longer periods than the timeframe used in the present study.

² INEGI (2007) describes the nature of labor in each sector; sector 51 operates using information, sector 52 uses assets, and personnel knowledge and experience are used in sectors 52, 54, and 56.

Table 1 shows the distribution of FDI in the Bajío by state and by industrial sector. Investment in the automotive industry was particularly notable, accounting for 47.4% of total accumulated FDI in the three states. It is also worth highlighting that, apart from the automotive industry, no other industry received significant investments in Aguascalientes.

Figure 2
FDI in the three states of El Bajío, 1999-2017 (Millions of Dls.)



Source: Author's elaboration based on data obtained from the Ministry of Economy (2018).

In addition to the automotive industry, Guanajuato has seen an influx of FDI for the tobacco and beverages, chemical, and food industries, while much FDI in Querétaro has been allocated to the plastic and rubber industry. In general terms, the table depicts a balance between Guanajuato and Querétaro as recipients of FDI in different sectors and the lesser role played by Aguascalientes. This information reflects a constant feature of this comparative exercise: Guanajuato and Querétaro have many similarities, while Aguascalientes is characterized by its unique profile.

Table 1**Distribution of FDI to El Bajío by state and by sector**

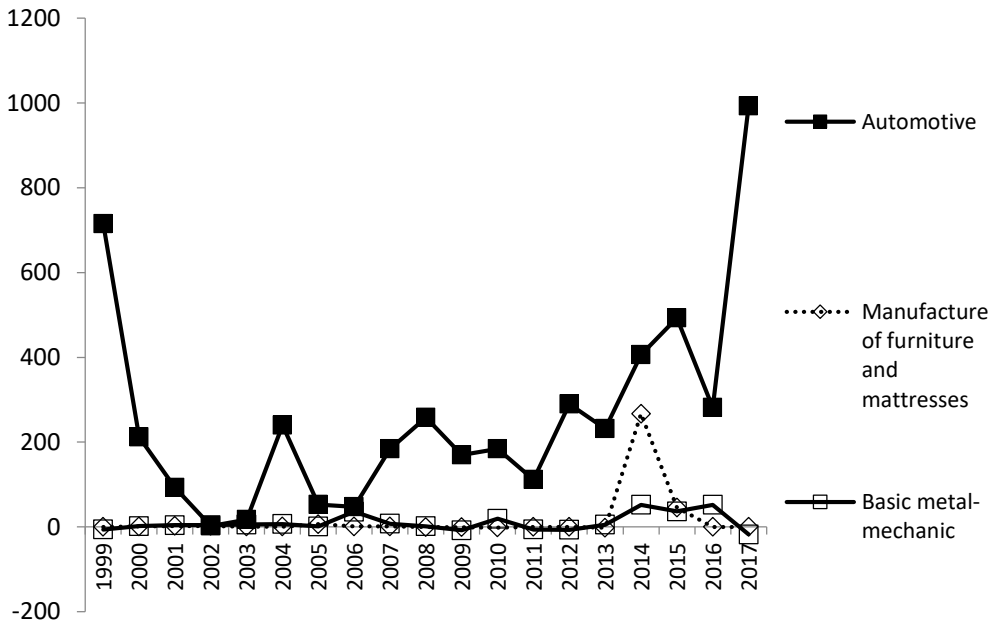
| Sector | Total (Millions of dollars) | Aguascalientes (%) | Guanajuato (%) | Querétaro (%) |
|---------------------|-----------------------------|--------------------|----------------|---------------|
| Automotive | 13,098.3 (100.0) | 38 | 39.1 | 22.9 |
| Beverages & Tobacco | 2,396.5 (100.0) | 3.3 | 72.1 | 24.6 |
| Chemical | 2,526.1 (100.0) | 3.2 | 62.6 | 34.2 |
| Rubber & Plastic | 2,774.7 (100.0) | 3.2 | 42 | 54.8 |
| Food | 1,881.9 (100.0) | 0.8 | 56.5 | 42.7 |
| Rest of industries | 4,943.8 (100.0) | 21 | 36.3 | 42.7 |

Source: Author's elaboration based on data obtained from the Ministry of Economy (2018).

Showing up next describes the sectoral composition of FDI flows over the 1999-2017 period in each of the three states. A graph is presented for each state, reflecting the dynamism of the three most important FDI recipient sectors, i.e., the graph shows the movement of the most significant FDI flows over time.

In Aguascalientes (figure 3) the automotive sector accounts for 79.2% of accumulated FDI in the state; furniture, mattresses, and blinds manufacturing activities represent 5.2% of the investment, and basic metal-mechanic activities represent 3.0%. These three sectors account for 87.4% of accumulated FDI in the state.

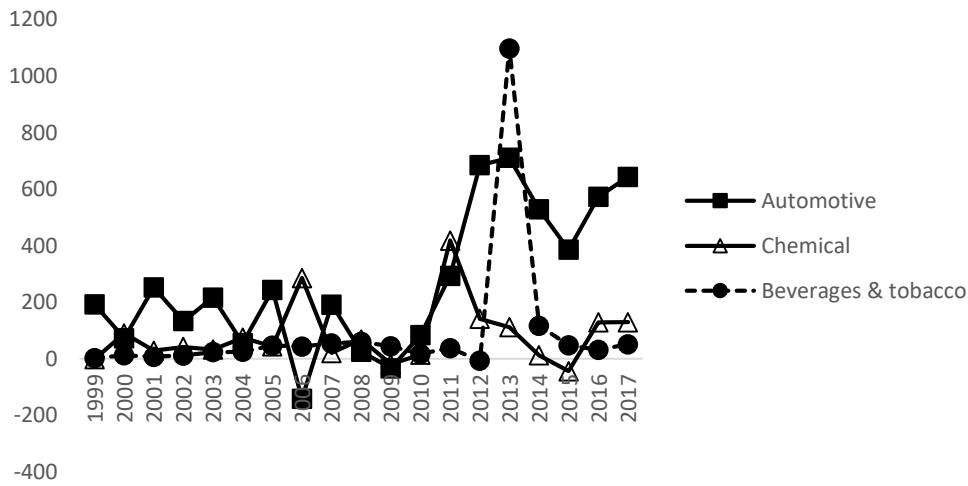
Figure 3
FDI in Aguascalientes, three main sectors, 1999-2017 (Millions of dollars)



Source: Author's elaboration based on data obtained from the Ministry of Economy (2018).

In the case of Guanajuato (figure 4), the graph includes the automotive (41.1% of FDI), beverages and tobacco (13.9%), and chemical (12.7%) industries. These three sectors account for 67.7% of accumulated FDI in the state of Guanajuato.

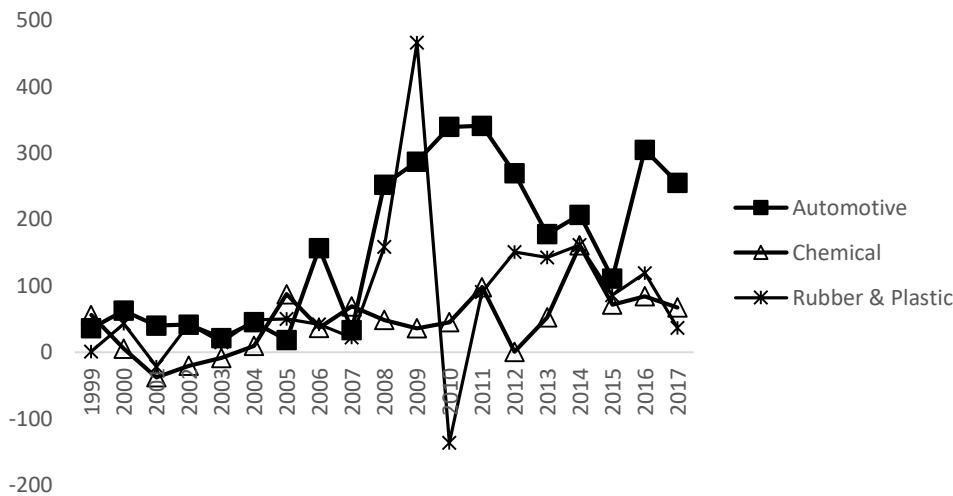
Figure 4:
FDI in Guanajuato, three main sectors, 1999-2017 (Millions of Dls.)



Source: Author's elaboration based on data obtained from the Ministry of Economy (2018)

Finally, in the case of Querétaro (figure 5), the three sectors receiving most FDI in the state are the automotive (33.8%), plastic & rubber (17.1%), and chemical (9.7%) industries, which together account for 60.6% of total FDI.

Figure 5
FDI in Querétaro, three main sectors, 1999-2017 (Millions of Dls.)



Source: Author's elaboration based on data gathered from the Ministry of Economy (2018).

These graphs show three different characteristics of manufacturing FDI in terms of flow and internal composition. Although the predominant feature of the economic region has been the presence of the automotive industry, the intensity and timing of this predominance differed in each state:

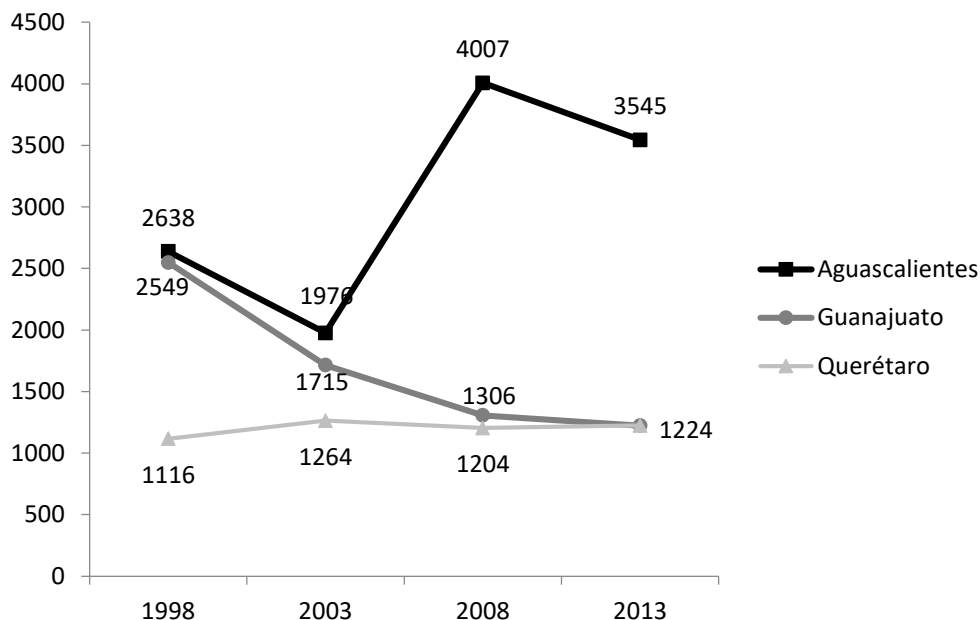
- Aguascalientes received an increasing concentration of automotive FDI.
- In Guanajuato, FDI flows began to increase in three main sectors from 2010, although the automotive sector predominates.
- In Querétaro, FDI increased significantly from 2008, especially in the automotive sector.
- Sectoral concentration of FDI is intense in the Aguascalientes automotive sector, whereas diversification is taking place in the other two states.

The use of the Herfindahl-Hirschman index reveals whether there is a tendency towards concentration or diversification of the manufacturing output structure. The HHI is a common measure of market concentration, as in essence, it is an indicator of structure concentration. The set of HHI values of a given structure across time shows whether concentration or diversification is the dominant tendency. This index uses values from 1000 to 10,000. The closer it is to the maximum value, the higher the concentration; while if the value is lower, it indicates a more balanced production structure. In this case, 100% represents the Gross Censal Added Value (GCAV) of the state, and the structural components are the 21 sub-sectors comprising sector “31-33 manufacturing industries” per the North American Industry Classification System (NAICS), including subsector “339 other manufacturing industries”.

As shown in figure 6, a sectoral concentration process can be observed in the case of Aguascalientes, while the process tends toward sustained diversification in Guanajuato, and Querétaro presents a stable trajectory. In sum, the latter two states converge in a diversified industrialization process, whereas Aguascalientes diverges from this trajectory.

The analysis of the regional industrialization process in the Bajío using agglomeration and concentration indicators confirmed the similarities between Guanajuato and Querétaro and the distinctive trajectory of Aguascalientes. The former two states have followed a path of industrial agglomeration driven by FDI in different sectors, whereas Aguascalientes has specialized in the automotive industry. Nevertheless, despite such concentration, most of the automotive FDI has been allocated to the first two states.

Figure 6
Sectoral concentration/ and diversification trajectories in each state, 1998-2013
(Herfindahl-Hirschman Index)



Source: Author's elaboration based on data from INEGI (1999, 2004, 2009, 2014).

V. TERTIARIZATION AND STRUCTURAL CHANGE TRENDS

We have thus far outlined the industrialization process in each state using indicators of FDI concentration, sectoral specialization, and manufacturing concentration. This section describes the trends of advanced tertiarization and their associated structural changes in the three Bajío states.

As we have already noted, the automotive industry has received the largest proportion of FDI in the three states. We have used this important characteristic as a reference to differentiate between automotive and non-automotive manufacturing and to compare the evolution of both, including the advanced service's element.

This was done by contrasting the rate of variation (average annual growth rate) of three variables indicative of development: production (represented by the Gross Censual Added Value), salaries per employed person, and employment. Three production groups and three development indicators are addressed. The three groups

are Automotive Manufacturing, Non-Automotive Manufacturing, and Advanced Services.

Figures 7, 8 and 9 present the evolution of the indicators for each state.

Figure 7
Trends of structural change, Aguascalientes, 2003-2013
(Average annual growth rate)



Source: Author's elaboration based on INEGI data (1999, 2004, 2009, 2014).

Figure 8:
Trends of structural change, Guanajuato, 2003-2013
(Average annual growth rate)



Source: Author's elaboration based on INEGI data (1999, 2004, 2009, 2014).

Figure 9:
Structural change trends, Querétaro, 2003-2013
(Average annual growth rate)



Source: Author's elaboration based on INEGI data (1999, 2004, 2009, 2014).

The previous figures show that the Automotive group is the most dynamic in Aguascalientes in terms of production, whereas the Advanced Services group is the most dynamic in Guanajuato and Querétaro. In all three states, the imbalance between the pace of production in automotive manufacturing and non-automotive manufacturing is significant: automotive manufacturing is the most dynamic while non-automotive manufacturing shows negative growth (a value of approximately 1). The state of Guanajuato shows remarkable growth in terms of employed personnel in the automotive industry. Mean wages, however, have decreased over time, especially in the case of Querétaro.

Thus, each state shows a different trend of structural change.

- Automotive manufacturing is highly dynamic, while non-automotive manufacturing shows a downward trend in the three states.
- Advanced services are the fastest growing group in Guanajuato and Querétaro, but not in Aguascalientes.
- In the three states, the three production groups have generally been dynamic in terms of employment, except for non-automotive manufacturing in Aguascalientes and Guanajuato, where growth has been low.
- Average salaries have fallen, at different rates, in the three states.

Despite individual differences in the composition of FDI, the automotive industry experienced growth to the detriment of non-automotive manufacturing production and employment. The only observable positive relationship between the two states tending towards a diversified manufacturing apparatus, Guanajuato and Querétaro, is the advanced tertiary sector.

CONCLUSIONS

In this case study two different paradigms of regional economic development converge. On one hand, the literature on FDI and development which suggests limits to the expansion of local productive forces in the presence of foreign investment, and on the other hand, the literature on modern services and regional economy that proposes the existence of a dynamic tertiarization process co-evolving with manufacturing. The studied region constitutes a suitable case for comparing both paradigms due to the constant flow of FDI received over almost three decades and its role in an export-oriented industrialization model, significantly led by the automotive industry.

The proposed structural indicators in this study have shown a different industrialization in each state despite the similarities in FDI flow patterns. This corroborates that development trajectories are space specific. Another relevant fact is

the presence of a process of structural change based on the dynamism of advanced tertiarization.

Specifically, Aguascalientes was found to have the highest industrial concentration, markedly specialized in the automotive industry. On the other hand, a more balanced pattern of FDI among manufacturing sectors can be observed in the cases of Guanajuato and Quereétaro. This initial characterization in terms of industrial agglomeration and industrial concentration is reflected by different structural movements.

The trend in Aguascalientes is an industrialization model that relies heavily on automotive investment, with the state presenting the most limited development of advanced services. On the contrary, production and employment in the advanced tertiary sector have grown in Guanajuato and Querétaro. However, a common feature of the three states is the trend towards decreasing mean salaries, which confirms that wage depreciation is a factor of the Mexican industrialization process.

This present paper offers two main contributions.

The first is the description and comparison of the three core Bajío states from the point of view of economic regionalization in the contemporary context of globalization and tertiarization. It is shown that the common identity of these states as recipients of important quantities of FDI, unfolds in three specific trajectories of structural change, revealing the weight of the automotive industry in the local structure as an important aspect of differentiation.

The second contribution is the method of regional analysis, starting from the argument that FDI is a territorial agglomeration factor and ending with the description of advanced tertiarization in structural terms. This method allowed for an understanding of the industrialization trajectories of the three states and revealed similarities between Guanajuato and Querétaro.

The purpose of this text has been to gather the basic data that can indicate a trajectory of structural change in a territory as the nucleus of a regional development characterized by industrialization and advanced tertiarization. The framework for that approach has been the theories of FDI as a driver of industrialization and structural change and the emergence of modern services generated by the industrial structure.

Obviously, the nature of the available data defines the study's limitations and the proposed method leads to stylized results. Nevertheless, it opens a door to academic work oriented to understanding the nature and scope of structural change in Mexican regions integrated into globalization during the neoliberal period.

REFERENCES

Aguayo, E. and Álvarez, L. (2007). Análisis econométrico del sector servicios en las regiones de México, 1993-2001. *Investigación Económica*, Vol. 61 (261):35 -60.

- Bailly, A. and Maillat, D. (1989). Servicios a las empresas y desarrollo regional. *Ekonomiaz, revista vasca de economía*. (13-14): 128-137.
- Bataillon, C. (1969). *Las regiones geográficas en México*, México: Siglo Veintiuno Editores.
- Bensusán, G., Micheli, J. and Carrillo, J. (2017). ¿Está realmente la innovación asociada con la mejora social? ¿Qué podemos aprender de los estudios de caso?, in Bensusán, G. Carrillo, J. and Micheli, J. (editors), *¿Es posible innovar y mejorar laboralmente? Estudio de trayectorias de empresas multinacionales en México*, México: Universidad Autónoma Metropolitana Azcapotzalco, 627-690.
- Buera, F. and Kaboski, J. (2009). The Rise of the Service Economy, *NBER Working Paper*, 14822, March.
- Chenery, H. B., Robinson, S. and Syquin, M. (1986). In Chenery, H. B., Robinson, S. and Syquin, M (eds.) *Industrialization and Growth. A Comparative Study*. Oxford: Oxford University Press.
- Coll-Hurtado, A. and Córdova y Ordoñez, J. (2006). La globalización y el sector servicios en México. *Investigaciones Geográficas* (61): 114-131.
- Contreras, O., Alonso, J. and Carrillo, J. (2012). Local entrepreneurship within global value chains: A case study in the Mexican automotive industry. *World Development*, Vol. 40(5): 1013- 1023.
DOI: <https://doi.org/10.1016/j.worlddev.2011.11.012>
- Cuadrado-Roura, J. (2016). Service Industries and Regional Analysis. New directions and Challenges. *Investigaciones Regionales-Journal of Regional Research*, (36):107-127.
- Daniels, P. and Bryson, J. (2002). Manufacturing services and servicing manufacturing: changing forms of production in advanced capitals economies. *Urban Studies*, 39 (5-6): 977-99.
DOI: <https://doi.org/10.1080/00420980220128408>
- Daville-Landero, S. (2012). La evolución de la industria de autopartes en Querétaro, 1993- 2008. *Economía, sociedad y territorio*, 12 (40): 689-727.
DOI:<http://dx.doi.org/10.22136/est00201266>
- Delgado, J. (1993). Querétaro, hacia la ciudad región. *Estudios demográficos y urbanos*, Vol. 8 (3): 655-699. DOI: <http://dx.doi.org/10.24201/edu.v8i3.889>
- Dunning J. and Narula, R. (2010). Multinational Enterprises, Development and Globalization: Some Clarifications and a Research Agenda. *Oxford Development Studies*, Vol. 38 (3): 263-287.
DOI: <http://dx.doi.org/10.1080/13600818.2010.505684>
- Dussel, E., Galindo L. and Loría E. (2003). *Condiciones y efectos de la inversión extranjera directa y del proceso de integración regional en México durante los años noventa: Una perspectiva microeconómica*. Buenos Aires: IDB Publications, Inter-American Development Bank.

- Estrada, S. (2006). Diferencias tecnológicas en la conducta tecnológica de las empresas manufactureras mexicanas: el caso de Guanajuato, *Economía, Sociedad y Territorio*, Vol. 5, No. 20, 821-869. DOI: 10.22136/est002006287
- García, R. (2011). Diagnóstico y perspectivas del sector terciario en las regiones mexicanas. *Estudios Regionales en Economía, Población y Desarrollo*. Ciudad Juárez: Universidad Autónoma de Ciudad Juárez.
- García, A. and Martínez, A. (2018). Trends in Automotive Industry FDI in Guanajuato, México. *Análisis Económico*, 33 (84): 89-122.
<https://www.redalyc.org/jatsRepo/413/41361009006/movil/index.html>.
(Accesed 1 December 2019).
- Garza, G. (2011). La revolución macroeconómica del sector servicios en Estados Unidos, México, Nuevo León y Guanajuato. In Adriana Martínez, Daniel Villavicencio Pedro López de Alba (Eds.). *Estrategias para la competitividad, empresas, sectores y regiones*. México: Concyteg, UAM X, Plaza y Valdes, 325 - 354.
- Guerrieri, P. and Meliciani, V. (2005). Technology and International Competitiveness: The Interdependence Between Manufacturing and Producer Services. *Structural Change and Economic Dynamics*, Vol.16 (4), pp. 489-502.
DOI:<https://doi.org/10.1016/j.strueco.2005.02.002>
- Gutiérrez, D. and Gutiérrez, P. (2006). Dinámica Industrial de Aguascalientes (1995-2000). *Investigación y Ciencia de la Universidad Autónoma de Aguascalientes*, Vol. 14 (34): 42-50.
- Illeris, S. and Philippe, J. (1993). Introduction: The Role of Services in Regional Economic Growth. *The Service Industry Journal*, Vol. 13 (2): 3-10.
DOI: <https://doi.org/10.1080/026420693000000025>
- INEGI (1999). Censo Económico 1999, available at
< <http://www3.inegi.org.mx/sistemas/saic/?evento=1999>>
- INEGI (2004). Censo Económico 2004, available at
< <http://www3.inegi.org.mx/sistemas/saic/?evento=2004>>
- INEGI (2007). Sistema de clasificación industrial de américa del norte (SCIÁN), Available at www3.inegi.org.mx/rnm/index.php/catalog/97/download/3888
- INEGI (2009). Censo Económico 2009, available at
< <http://www3.inegi.org.mx/sistemas/saic/?evento=2009>>
- INEGI (2014). Censo Económico 2014, available at
<http://www.beta.inegi.org.mx/app/saic/>
- INEGI (2017). Available at <http://www.inegi.org.mx/sistemas/bie/>
- Jones, J. Wren, C. (2006). *Foreign Direct Investment and the Regional Economy*. London: Routledge. <https://doi.org/10.4324/9781315582764>
- Kallenberg, R. and Oliva, R. (2003). Managing the Transition from Products to Services. *International Journal of Service Management*, Vol. 14 (2): 160-172.

DOI: 10.1108/09564230310474138

- Kottaridi, C. and Stengos, T. (2010). Foreign direct investment, human capital and non-linearities in economic growth. *Journal of Macroeconomics*, Vol. 32, Issue 3, September, pages 858-871, <https://doi.org/10.1016/j.jmacro.2010.01.004>
- Kumar, N. and Pradhan, J. P. (2005). Foreign Direct Investment, Externalities and Economic Growth in developing Countries: Some Empirical Explorations, in Graham E. M. *Multinationals and Foreign Investment in Economic Development*, International Economic Association Series. London: Palgrave Macmillan, pp. 42-84. DOI: https://doi.org/10.1057/9780230522954_3
- Kuznets, S. (1973). Modern Economic Growth, Findings and Reflections, *The American Economic Review*, vol. 63, No. 3, pp. 247-258.
<https://www.jstor.org/stable/1914358>
- López, J. (2017). Las políticas públicas del desarrollo industrial de Aguascalientes, México (1980-2014). *Revista de Economía. Universidad Autónoma de Yucatán*, Vol. 34 (89): 42-77. Doi:10.33937/reveco.2017.87.
- Micheli, J. (2016). Desarrollo regional y terciarización: los casos de Guanajuato y Querétaro, México, *Estudios Regionales en Economía, Población y Desarrollo*, Cuadernos de Trabajo de la Universidad Autónoma de Ciudad Juárez, N. 36, Available at
<http://open-apps.uacj.mx/RePEc/cjz/ca41cj/Cuadernos%20UACJ%2036.pdf>
(Accessed 15 September 2019)
- Micheli, J. (2019). Cambio estructural en los estados especializados en producción automotriz de México, 1998-2013. *Región y Sociedad*, Vol. 31, e1110, DOI: <https://doi.org/10.22198/rys2019/31/1110>
- Ministry of Economy, (2018). Información estadística de flujos de IED hacia México por entidad federativa desde 1999, Gob. Mx, Datos Abiertos, available at <https://datos.gob.mx/busca/dataset/informacion-estadistica-de-la-inversion-extranjera-directa> (accessed 25 September 2018)
- Mullen, J. and Williams, M. (2005). Foreign Direct Investment and Regional Economic Performance. *Kiklos international review for social Sciences*, 58 (2): 265-282. DOI: <https://doi.org/10.1111/j.0023-5962.2005.00288.x>
- Mungaray, A. and Benítez, C. (2000). Expansión global y desarrollo local de proveedores en Tijuana. *Frontera Norte*, Vol. 12 (24): 35-57.
- OECD (2000). The Service Economy, Business and Industry, Paris: Policy Forum Series
- Pilat, D. and Wölfl, A. (2005). Measuring the interaction between manufacturing and services. Paris: OECD Statistical Analysis of Science, Technology and Industry. STI Working Paper 2005/5.

- Pineli, A., Narula, R. and Belderbos, R. (2019). FDI, multinationals and structural change in developing economies, United Nations University, UNU-MERIT, Working Paper Series, #2019-004, Maastricht, The Netherlands.
- Salmerón, F. (1998). Intermediarios del progreso. Política y crecimiento económico en Aguascalientes, México, D.F.: Instituto Cultural de Aguascalientes, Antropología CIESAS.
- Syrquin, M. (1988). Patterns of Structural Change, in Hollis Chenery & T.N. Srinivasan (ed.), *Handbook of Development Economics*, edition 1, volume 1, chapter 7, pages 203-273 Elsevier. DOI: [https://doi.org/10.1016/S1573-4471\(88\)01010-1](https://doi.org/10.1016/S1573-4471(88)01010-1)
- UNCTAD (2017). “El papel de la economía y el comercio de servicios en la transformación estructural y el desarrollo inclusivo”. Nota de la Secretaría de la UNCTAD. Available at https://unctad.org/meetings/es/SessionalDocuments/c1mem4d14_es.pdf, Recovered 16/11/2109
- Unger, K, Garduño, R and Ibarra, J.E. (2014). Especializaciones reveladas y ventajas competitivas en el Bajío mexicano, *EconoQuantum*, vol.11, no. 2 <http://dx.doi.org/10.18381/eq.v11i2.2311>
- Unger-Rubín, K. (2011). Competitividad y especialización de la economía de Guanajuato: un acercamiento municipal, 1993-2003. *Economía, sociedad y territorio*, Vol. 11(36): 403-454. DOI: 10.22136/est002011111
- Vangstrup, U. (2015). Moroleón, la pequeña ciudad de la gran industria. *Espiral. Estudios sobre Estado y Sociedad*, Universidad de Guadalajara, Vol. 2 (4): 101-134. DOI: <https://doi.org/10.32870/espisal.v2i4.1040>
- World Bank (2015). Gross Domestic Product 2014. Available at <http://databank.worldbank.org/data/download/GDP.pdf> (Accesed 5 April 2016).