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Basave Kunhardt, Jorge

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Foreign Direct Investment of large Mexican companies in the United States

Jorge Basave Kundhart^a

^a National Autonomous University of Mexico (UNAM), México.

Email address: basave@unam.mx

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Abstract

This article analyzes the determinants of Foreign Direct Investment (FDI) of large Mexican companies in the United States (US). On the macroeconomic level, the level of Mexican FDI in the US fluctuates according to domestic and international economic conjunctures. The result is two “waves” of FDI with differentiated determinants: the first wave that began in the 1970s, and the second which began with the opening of the Mexican economy at the end of the 1980s and was affected by the 2008 global financial crisis. Due to the business practices and economic activities of Mexican firms, the factors which determine the spatial location of Mexican FDI in the US are the parent company's proximity to actual and potential markets and their participation in global production chains.

Keywords: Foreign Direct Investment (FDI); multinationals; large Mexican firms; investment; technology.

1. INTRODUCTION

A characteristic of Mexico's Foreign Direct Investment (FDI) is the level to which it is aligned with the United States (USA). In December of 2018, 26 of Mexico's largest multinational companies (MNC) held investments in the US with 105 subsidiaries¹ - just below the total of the 165 located in Latin America and the Caribbean (Basave and Gutiérrez-Haces, 2020, pp.4, 18-19 and 26).

The main objective of this article is to analyze the location determinants of the largest MNC's FDI in the US and to map these investments in the US, by their sector of economic activity. In order to provide context for the results of this article, the cycles or waves of Mexican investment and their causes, preferred forms of investment and tendencies and trends in flow of international FDI are evaluated.

Since the 1990s until the first decade of the XXI, when what are known as Multilatinas began their international expansion, Mexico's FDI differed from the rest of the continent because investments were made in a more developed economy, the USA. Meanwhile, countries such as Brazil, Argentina and Chile placed almost all their capital in neighboring economies that were either on a par with their own or less developed.

The goals of Mexican MNCs' FDI have changed over time in response to a variety of international developments, to the economic sector they are located in, and their own strategies. However, with regards to investments in the US, some major lines of expansion are common to all: market diversification, the advantage of sharing a border and the opportunity to scale up technology that is offered by a developed economy.

Mexican MNCs' international expansion was not due to a national FDI development strategy, as was the case in several Asian countries, especially China (Cheng and Tong, 2003, p.8; Von Zedtwitz, 2005, pp. 5-7; Mathews, 2006). Nor did they receive financial support structures to achieve growth, as was the case with Brazil in Latin America (Fleury and Leme, 2009). Instead, it was as a result of business initiatives and strategies based on a series of property advantages, notably their oligopolistic quality and financial strength (Garrido, 1999, pp.235-236; Goldstein, 2007, pp 71 and 85-86; Dussel, 2012, pp. 4-7; Basave, 2016, pp.64-68). In so far as macro-economic factors that favored expansion, the most relevant was the over-valuation of the Mexican peso during the last decade of the past century and most of this century, as this encouraged acquisitions as the preferred way to achieve market penetration.

The first point, already addressed by many theoretical and empirical works, pertains to the following question: “How is it possible that a company from a developing economy can make a direct investment in a developed economy and be competitive?”

Theorists from the International Business School recognized that oligopolistic companies exist in developing countries and that, having gathered years of experience dominating their own markets, they have a competitive advantage for expansion abroad, using innovative methods of penetration (Cuervo Cazorra, 2008; Guillén and García-Canal, 2009; Ramamurti, 2012). These are specific ownership advantages, according to the eclectic paradigm (Dunning, 1988; Narula, 1996), which also defines location advantage. Location advantage is one of the theoretical foundations for this study, as well as the favorable (and attractive) factors that foreign countries and regions present to corporate investment (Dunning, 2000, p.164).

When looking at large Mexican companies, studies such as Goldstein (2007, pp. 85-86), Dussel (2012, pp. 4-7) and Garrido (1999, pp. 235-236 and 238-239) highlight their experience in very tough markets and their efficient distribution systems as advantages for competing in international markets.

Another advantage for Mexican MNC'S WAS the financial solidity they acquired towards the end of the 1980s (Basave, 2016 pp.39-40 and 64-68), and their ability to borrow in foreign markets.

A direct investment by a Mexican company in the USA is attractive and prospectively profitable due to the size of the market and its proximity, among other factors. Entrepreneurs are usually familiar with the market due to exports, and a growing demand from the Latino population for certain products such as food and drink. Other advantages were accrued with time, such as Mexican businesses participating in value chains that cross the border in both directions, and commercial treaties being signed from 1994 onwards.

The speed with which MNC's from developing countries, among them Mexico, have scaled their technological skills using partnerships, mergers and acquisitions (M&A) in developed nations has allowed them to compete successfully in these economies during the 21st Century. These are known as *catch up* strategies (Mathews, 2002; Von Zedtwitz y Gassman, 2002; Von Zedtwitz, 2005; Child and Rodríguez, 2005; Bonaglia *et al.*, 2007, pp. 370-372; Williamson and Zeng, 2009; Chen and Cuervo-Cazurra, 2012; Di Mini *et al.*, 2012; De Beule and Duanmu, 2012) which will be addressed later.

Methodology and Text Structure

Throughout this article, there will be a distinction between two FDI cycles. The initial cycle, which will be referred to very briefly, corresponds to what FDI theorists coming from economies in development called "the first wave", which began in the 1970's, and a second cycle ("the second wave") which arose in response to changes in international production and the opening up of economies in development in the 1990s.

Second, the difference between investment objectives and intentions will be noted; one aims to expand markets and diversify risk internationally, the other seeks the vertical integration of the business conglomerate and wants to increase technological capacity through learning. The latter is qualitatively superior in terms of its ability to impact on the MNC's competitive capacity and generally includes the first two points.

It is important to mention that reference large business consortia with Mexican capital will be made constantly, and that information comes directly from them. The selected sample is 28 MNC's ²: eight of which are diversified (ALFA, CARSO, ELEKTRA, Elementia, FEMSA, KUO, Grupo México and XIGNUX), seven are in the food and beverage sector (ACCEL, Arca-Continental, Bachoco, BIMBO, Casa Cuervo, Gruma, and LALA), four in non-metallic minerals (Cementos de Chihuahua, CEMEX, Inter ceramic and VITRO), two in the steel and metal production sector (Altos Hornos and Industrias CH) and one in each of the telecommunication sectors (América Movil), paper and carboard (Biopappel), commerce (Chedraui), chemicals and petrochemicals (Mexichem), petroleum and gas (PEMEX), car parts (Rassini) and construction (Rotoplás).

It is hard to know how many small and micro businesses are owned by Mexicans residing in the US, especially in the food and service industries, they are probably in their thousands. These, however, are not this article's purview.

There is a considerable disparity in the information on Mexican FDI depending on the source consulted, the same can be said with regards to flow and investment *stock*. The information used in this article- especially in the last section- was taken directly from businesses' financial statements and their respective notes. Other information was obtained from official Mexican organizations and multilateral organizations. For historical information relating to Mexico's FDI in the USA, the US Department of Commerce, the Bureau of Economic Analysis (BEA) and Survey of Current Business (SCB) databases and publications were consulted.

The main contribution that this article seeks to provide, is the analysis of the spatial location of the largest Mexican MNC's FDI in the US since their international expansion began more than three decades ago until 2018. Using direct sources, companies, the sectors that they belong to and the location of their subsidiaries in the US are identified.

The article is structured as follows: after the introduction, section two deals briefly with the first phase of FDI flowing from Mexico to the US until it petered out in the 1980s. Section three looks at the internal and international economic factors of a "second wave" of investment until the 2008 financial crisis. Section four covers the predominant form of investment that was born of this crisis, and in good measure, due to it. Finally, section five puts forward and analyzes the specific spatial location results of the sample's Mexican MNC's in the United States, by number and economic sector; these are the results of the empirical research that support the interpretation of this phenomenon.

2. THE FIRST "WAVE" OF MEXICAN FDI'S

Without considering isolated cases, the first cycle of Mexican FDI took place during the 1970s.³ This cycle was a consequence of investment inertia during long periods of sustained economic growth: an average of 6.5% from 1970 to 1979 (Banco de México, several years) as well as an annual average of 7.9% in the export/GDP ratio (Moreno Brid and Ross, 2009, pp. 269-270). The FDI was an immediate complement to the export penetration achieved by Mexican manufacturers in the Latin American and North American markets since the 1960s.

By 1979 it was estimated that 20 to 22 large Mexican manufacturers had subsidiaries abroad (Wells, 1983; Basave, 1996) and almost 50% of those were located in the USA⁴: three in the food and beverage sector, two in mining, two in car parts, one in electrical cables and one in chemicals (Basave, 1996, p.172).

Mexican FDI in the US diverged from the predominant investment model in other developing countries during the "first wave". These focused on countries that shared borders but were either as, or less developed. For example, in 1978 more than 90% of Argentina's FDI was in other Latin

American economies and in the case of South Korea, 60% of their FDI in the manufacturing sector was in Southeast Asia (Lall, 1983, p.92).

This first investment cycle or "wave" was abruptly interrupted when Mexican businesses faced a severe financial crisis at the beginning of the 1980's (Basave, 2016, pp. 49-50). The businesses took on losses and, with few exceptions, gave up their interests abroad.

3. THE SECOND "WAVE" UNTIL 2008

Key Factors

A handful of large Mexican companies began a decisive foray into internationalization from 1988⁵, and this became more intense at the beginning of this century.

The Latin American market, and more particularly the Central American market, were where business consortiums directed their investments when conditions for market penetration were favorable, not only due to their commercial experience⁶, but also due to having several ownership advantages over their competitors in the region (Basave, 2016, pp.37-40). Specifically, those linked to holding monopoly power, in the way that was initially identified by Hymer (1960) and by theorists of Industrial Organization: Bain (1963), Caves (1982) and Porter (1986), and which largest Mexican business consortiums had consolidated in the internal market.

There are also the advantages related to the competency of the firm's administrators (Dunning, 2000, pp. 168-169) and their considerable experience working in markets that had complicated and changing business environments (Cuervo Cazorra, 2008; Guillén and García-Canal, 2009, pp. 28-32; Ramamurti, 2009, pp.404-410). Especially their efficient distribution systems (Goldstein, 2007, pp.71 and 85-86; Basave, 2000, pp. 270-271; Garrido, 1999, pp.235-236 and 238-239; Dussel, 2012, pp. 7-9) and their exceptional financial abilities, acquired during the 1980s (Basave, 2016, pp.64-69).

However, their explosive move abroad cannot be fully explained without including various authors who include the contingency factor (Ramamurti, 2009, pp. 10-16; Goldstein, 2007, pp. 79-81). It was, therefore, about business decisions made in a specific national and international economic context.

This contingency factor refers to specific contexts, such as immediate conversion determinants of businesses into MNC's. These were events that were external to the firms, specific situations that were varied in nature, generally unpredictable as alluded to in modern evolutionism (Nelson and Winter, 1982, pp. 15-19) to aid the understanding of some business decisions.

With regards to Mexico, the contingency variable was the economy's sudden opening due to the economic reforms applied at the end of the 1980s and the beginning of the nineties. Mexican entrepreneurs aptly appraised that this would create an imminent risk of being absorbed by foreign capital coming into the country. The defensive response (Basave, 2016, pp.35-37 and 54-58) consisted in immediate international growth, increasing competence capacities of several Mexican businesses that had ownership advantages and the financial ability to achieve it.

Investment Dynamism Towards the US

The growth of this "second wave" took place during the consolidation of the transformation of international production methods. Due to their segmentation of developing countries were able to insert themselves into production chains led by the large MNC's of developed countries. This was the case for the Mexican car part businesses that entered directly into the US automobile production chain. In other cases, the main investment objective in the US was vertical integration: CEMEX (construction) acquired concrete suppliers and GRUMA (food) maize and wheat flour suppliers, both in the South of the US (Basave, 2000, pp. 273-275).

We must also take into consideration that ethnic and cultural affinities impact on specific markets in certain US states. This influenced decision making for investment decisions from the outset. Potential consumers were considered for the food and beverage sectors, bulk buying, and food services; these have a large market in the Latin population in the US, due to uninterrupted immigration for over a century.

The first 12 years, which encompass the entire decade of the 1990's⁷ have been, to date, the most dynamic in the history of Mexican FDI in the US. The *stock* multiplied more than 18 times between 1998 and 2000, going from \$US545 million to US\$9 854 million, whilst the assets of Mexican businesses located in the US, went from US\$3 664 million in 1991 to US\$19507 million in 2000, representing an increase superior to 400% in nine years (see table 1).

Table 1. FDI (stock) and Mexico's assets in the USA.**Years selected 1998-2006 (US\$ millions)**

	<i>Stock</i>	<i>Assets</i>
1988	545	nd
1991	1 157	3 664
1995	3 127	9 661
2000	9 854	19 507
2006	11 769	18 640

Source: stock: SCB (Survey of Current Business) July 1993: 83-84; Sept 1998: 106-107; Sept 1999: 53-54; BEA (Bureau of Economic Analysis) 2000 and 2006 US Department of Commerce FDI stock & employment comparison by country All Industries-Total www.select USA.gob/data activos: Zeile William (1994) SCB July 1994:75; Fahim-Nader Malnaz and William Zeile (1997) SCB June 1997:77; Zeile William (2002) SCB August 2002:149-165; Zeile William (2009) SCB Nov. 2009:64.

Direct operation in the US market, during a growth period in the global economy⁸, was extremely successful for Mexican businesses: sales there increased 390% over the same period, almost in keeping with assets which grew from US\$3 321 million in 1991, to US\$16 278 million in 2000 (Zeile, 1994, p. 175 and 2002, pp. 149-166). Only the Mexican economic recession from 1994-1995 had a negative impact on FDI. The flow abroad that had been increasing since 1988, was negative in 1995 (US\$263 million) and 1996 (US\$47 million) (Lowe, 1999, pp. 41-49 and 53). This was because of the need to provide fresh resources for the parent company in Mexico, to compensate for the recession. Funds were obtained from subsidiaries abroad⁹ as shown in 1996, the year in which financial transfers from their subsidiaries totaled US\$ 282 million (Lowe, 1999, pp.41-49 and 53).

By 2002, the US Department of Commerce registered 64 Mexican affiliated businesses¹⁰ in the US (SCB, 2002, p.13). Annual sales showed an increase above 100% over 15 years, between 2000 when they represented US\$16 278 million and 2015 in which they reached US\$32 808 million (Zeile, 2002, pp. 149-166; Stutzman, 2017, pp. 10-11)¹¹. This led to an increase of Mexican MNC's already established in the US's FDI, but mainly in new businesses investing in the USA. Mexico's total assets in North America reached a total of US\$46 514 million by 2018 (see table 2).

Table 2 Mexican (stock) and assets in the US.**Years selected 2008-2018 (US\$ millions)**

	<i>Stock</i>	<i>Assets</i>
2008	29 331	36 988
2012	27 807	44 198
2015	34 390	46 514
2018	37 234	nd

Source: stock: BEA (Bureau of Economic Analysis), 2008, 2012, 2015 and 2018, US Department of Commerce, FDI Stock & Employment Comparison by Country, All Industries-Total, www.select USA.gob/data activos: Anderson Thomas (2010), SCB, Nov 2010:45-48; Stutzman Sarah (2017), SCB, August 2017:10-11.

This was the result of a significant increase in FDI flows from Mexico, which averaged close to US\$2 300 million annually, between 2011 and 2014 (Hansen and Limes 2015, pp. 16-26). The positive results achieved in the US meant that the FDI was able to grow during 2012 and 2014, due to US subsidiary profits being reinvested. The average amount reinvested during those three years was above US\$2 000 million (Hansen and Limes, 2015, pp. 16-26). It took three decades for these companies to reinvest profits to finance their FDI. Before 1995, this sector did not exceed US\$50 million annually, and before 2000 didn't reach US\$200 million. (SCB, 1993, pp. 68-79; Lowe, 1999, pp. 41-49 and 53).

4. EXPANSION THROUGH MERGERS AND ACQUISITIONS (M&A)

The financial crisis that began in 2007 and took hold completely in 2008 caused changes in the flow of FDI globally, over the next ten years. This happened in three ways: *i)* the total was reduced *ii)* the FDI flow from developing economies increased *iii)* M&A became the preferred method for growth for MNC's in developing economies.

Over one decade, the recipient participation of countries with developing economies increased from 19 to 54% of total FDI flow (WIR, 2012, pp.2-10 and 38).

Investments pivoting towards more stable developing economies, as they sought greater security and improved performance for multinational capital (Cremers, 2011; Basave and Gutiérrez-Haces, 2013, pp. 41-43) also had a correlative impact on the increase of FDI flows leaving these countries, and on the investment behavior of their MNC's.

The most striking example was the predominant way in which MNC's undertook FDI; they bought companies in developed economies, capitalizing on the acquisition advantages afforded by several large international American, and European corporations needing to offload assets in the face of the financial crisis.

The international climate being favorable to acquisitions, in conjunction with the opportunity for the more dynamic MNC's from several developing countries to increase their competitive capacity, just as they were consolidating their participation internationally, created a very favorable opportunity for qualitative growth.

This phenomenon has been widely studied: M&A allows learning processes to begin faster (Child and Rodríguez, 2005; Duysters *et al.*, 2009; Guillén and García-Canal, 2009). It is about appropriating the company's "knowledge warehouse" as the evolutionary economy theorists say (Nelson and Winter, 1982, p.99). It is also about access to tacit knowledge (Bell and Bavitt, 1993, p.262), which is impossible to achieve otherwise.

M&A as an international growth strategy was seen by MNC's from developing countries as a fast way to increase their competitive abilities (*catch up*) acquiring new technological knowledge and incorporating it into their business complex. Once a company with superior technological abilities than those of the buying business complex is acquired in a developed economy, it becomes an ownership advantage of the type that generates income and specific market quotas (Narula and Santangelo, 2012, p.9).

The knowledge acquired is passed on to the business conglomerate as a whole, provided they can internalize it (Liu y Buck, 2007, p.359) and that a clear policy exists within the firm to recognize and spread new skills (Mendes *et al.*, 2012, pp. 2020-221).

Corporate M&A as a form of expansion increased markedly at the beginning of the current century (see table 3). The global average between 2000-2006 compared to 1993-1999 increased by 33% with Asia's participation reaching a notable 99%. Immediately after the crisis, and as a consequence of it, the average acquisitions by developed countries fell to 6%, whilst the average of developing countries maintained growth with 62%. Two countries pushed the average up: China with 155% and Mexico 41% (which represents 207 buyouts in seven years). ¹²

Table 3. The number of international acquisitions by purchaser. Selected countries/regions (yearly average)

<i>Region/country</i>	<i>1993-1999</i>	<i>2000-2006</i>	<i>2007-2013</i>
Developed countries	5 649	7 160	7 583
US	1 732	1 785	1 843
European Union	2 868	3 828	3 888
Japan	165	231	358
Developing countries	622	1 139	1 845
Asia: South, East, and Southeast	397	792	1211
China	39	92	235
Hong Kong	93	182	231
Brazil	17	36	73
Mexico	22	29	41

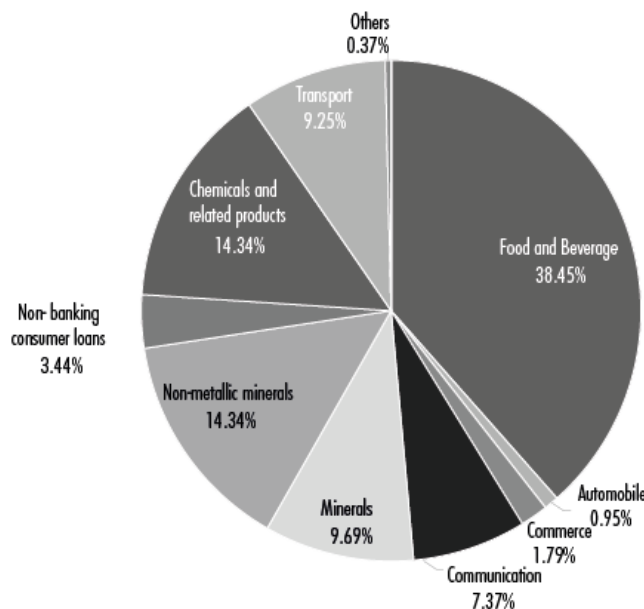
Source: compiled by author based on WIR (2014), Annex Tables: table 12, UNCTAD, <http://unctad.org/en/pages/world201Investment20Report/Annex-Tables.spx>

A record of international FDI penetration by the largest 31 Mexican MNC's, between 1988 and 2014, shows that 162 of the 188 new subsidiaries and/or foreign industrial plants were bought, and eight merged (a total of 90%) (Basave, 2016, pp. 175-185).

Mexican MNC's penetration of the international markets using M&A was not new. Case studies on these investment strategies show that they were already being used before the financial crisis (Dutrenit *et al.*, 2003; Jasso and Torres, 2005; Torres, 2006; Jasso and Ortega, 2007). The difference is that from 2008, most of the acquisitions took place in developed economies. The international financial crisis presented the opportunity to multiply acquisitions.

Nineteen Mexican MNC's acquired companies in the US between 2008 and 2018 for a total of US\$22 699 billion.¹³ The highest proportion of M&A's took place in traditional sectors such as food and beverage with 38%, followed by non-metallic minerals with 14%. These tend to be large, vertically integrated companies that produce a relatively high proportion of their own technology (Pavitt, 1984). Their expansion, therefore, had the primary aim of new market penetration, by taking advantage of acquisition opportunities. In contrast, approximately 35% of all M&As met the need of finding specific assets to increase technological and competitive capacities. These include the chemical and plastic sectors (14%), transport (9%), communication (7%), finance (3%) and automobile (1%) (see figure 1).

Figure 1. The main mergers and acquisitions in the United States by sector of economic activity, 2008-2018 (percentage)

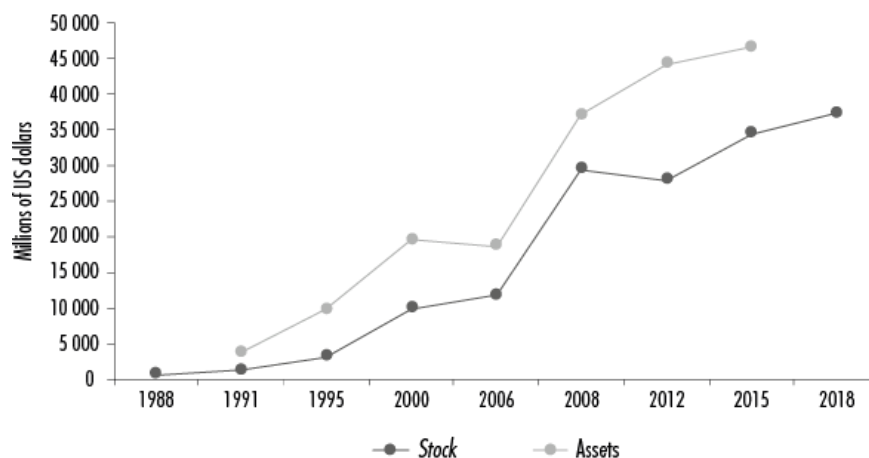


Notes: financial total US\$22 698.8 million; others= construction, information services and software and IT.

Source: compiled by author based on: 2018 annual reports from companies listed in the Mexican Stock Exchange; 2008-2017: Basave Jorge and Maria Teresa Gutierrez-Haces, Annual Survey of Mexican Multinationals, several years; Emerging Markets Global Players Project, University of Columbia NY.

Thus, the financial crisis that began in 2008 and the acquisition strategy followed by the Mexican MNC's were the fundamental resources for accelerating the penetration of Mexican capital into the US (see figure 2).

Figure 2. Mexican FDI (stock) and assets in the US. Years selected 1988-2018



Source: Tables 1 and 2.

5. ADVANTAGES OF LOCATING AND PLACING MEXICAN FDI IN THE US

Key aspects of a company's decision-making process in selecting the country or region to locate their subsidiaries are the advantages that the host country offers. In parallel to this decision, the precise location of the company in the new area must be selected, a decision that involves what is known as the placement advantage, which corresponds to location advantages. This considers, among other variables, proximity to specific non-affiliate companies, such as suppliers, competitors, or important clients and/or a potentially significant market (Narula and Santangelo, 2012, pp. 6 and 10).

The location of MNC's from developed and emerging economies ("newly industrialized") in the US, follows certain general patterns that have been studied recently (Setzler and Tintelot, 2019, pp. 12-14). The majority of Asian MNC's are located on the west coast, Canadians on the northern border and Europeans on the east coast. The main reason behind these choices are less distance and ease of connection with their parent companies, which relates to transport costs. For new arrivals, another factor to consider is how advantageous it is to be near clusters of businesses from the same country.

Mexican construction subsidiaries have chosen locations based on proximity to their parent companies. Companies belonging to other industrial sectors must take other factors into account. Food and food service industries, as well as the financial services sector chose their locations based on the large Mexican (and Latino) consumer population, that live in certain states of the US. Car part subsidiaries are located close to US assembly plants, as they belong to their extensive production chains.

In 2018, there were 2647 subsidiaries belonging to the 28 MNC's of the sample studied. Of these, 772 were industrial plants and 1875 service and commercial units.¹⁴ The construction and food and beverage sectors stand out in the first, and in the second the financial service sector (see table 4).

Table 4. Mexican Multinationals' Production and Service Units (*) in the USA (2018)

<i>Sector</i>	<i>#</i>	<i>Sector</i>	<i>#</i>
Food and Beverage	125	Mining and metallurgy	6
Steel and metal products	7	Paper and paper products	5
Car parts	9	Chemical and petrochemical	26
Electric cables	1	Food services	56
Commerce	125	Financial services	1 693
Construction	581	Telecommunication	1
Energy, petrol, and gas	9	Transport	3

Note: * This includes industrial plants (772) and service and commercial units (1 875). Distribution and sales office are not included.

Source: compiled by author based on the financial reports and annual reports of 28 Mexican multinationals.

Figure 3 shows the location of all the industrial plants that will be broken down by sector, in subsequent figures. There are 592 industrial plants.¹⁵ The states with the highest number are Florida (126), California (104), Texas (76), Arizona (69), Alabama (46), and Georgia (31). All of these are southern US border states.

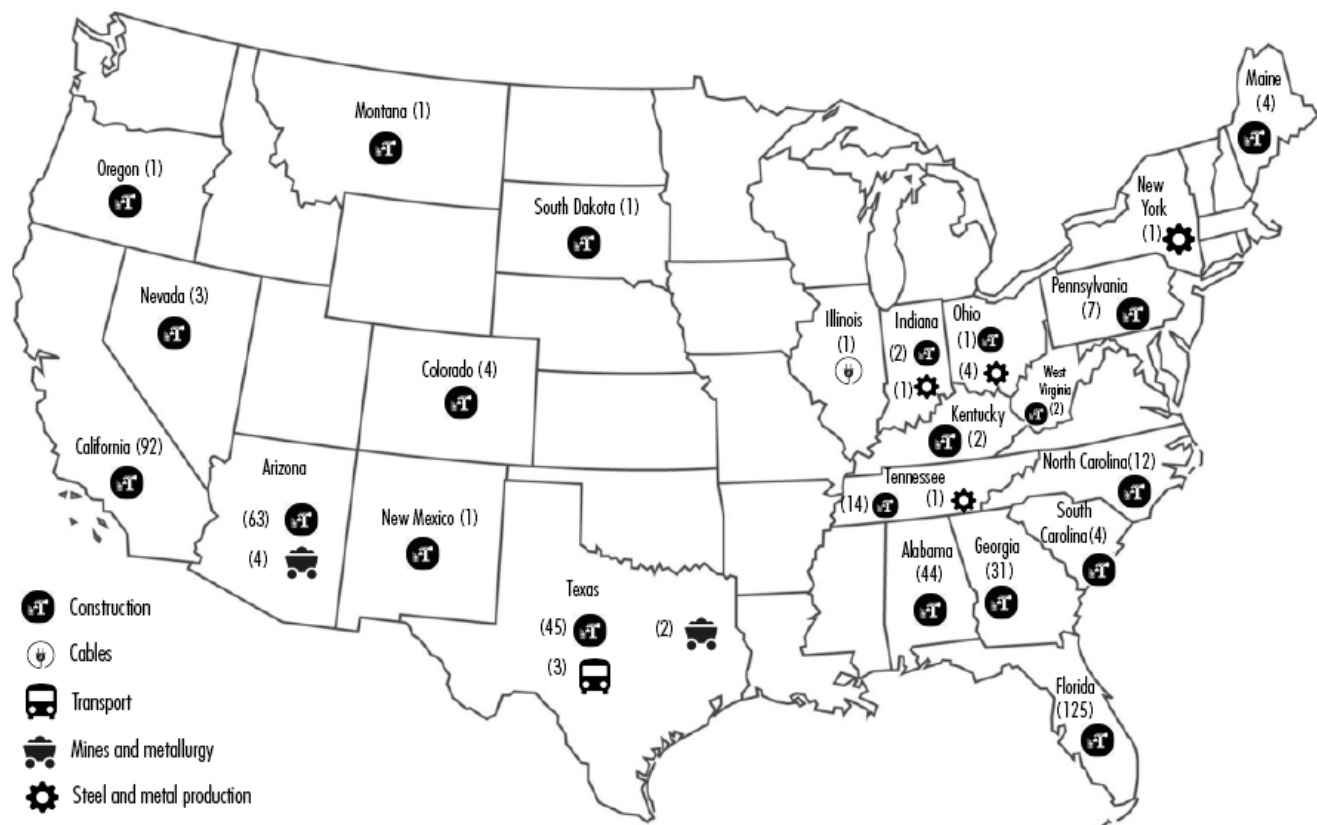
Figure 3. Mexican multinationals' industrial plants



Proximity to the parent company is an obvious advantage, especially when taking into consideration that a good number of these plants belong to the construction industry (see figure 4) with 459¹⁶ of a total of 476 and that are mainly CEMEX subsidiaries, which has its parent company in the state of Nuevo Leon, Mexico and Cementos de Chihuahua in Chihuahua state, Mexico, both of which are on the northern border.

Figure 4 shows the location of nine car part plants and 28 energy, paper, chemical and petrochemical plants.¹⁷ The first nine are in the east and northeast of the US. Four of these (ALFA), are in Nemak, Alabama, Tennessee, Kentucky, and Wisconsin; Rassini has two in Michigan and one in Ohio; Kuo has one in Michigan and VITRO, one in Pennsylvania.

Figure 4. Plants in the USA belonging Mexican multinationals from selected economic sectors



Note: total in the figure, 476

Source: compiled by author based on information from companies' yearly financial reports and reports to the Mexican Stock Exchange in December 2018.

Automobile industrial plants can be found in all these states, except Pennsylvania.¹⁸ Ford, Chrysler/ Fiat, General Motors, and VW are located in Michigan; Chrysler/ Fiat, General Motors and Honda in Ohio; Ford¹⁹ and Toyota are in Kentucky; Honda has a plant in Alabama; and VW has plants in Wisconsin and Tennessee.

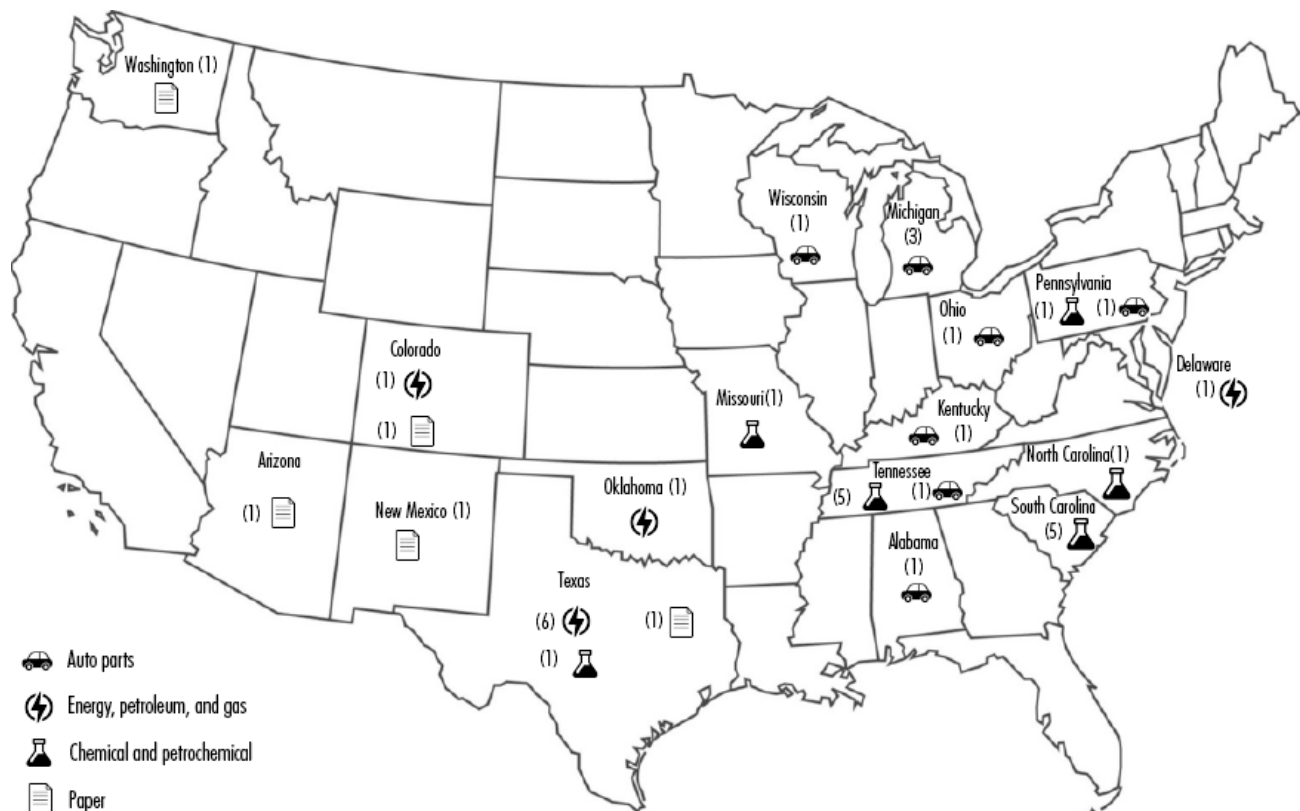
The choice of location took into account important clients in those states, which represents to a placement advantage due to the presence of actors unaffiliated to the MNC. The presence of support industries (interindustry relations) and tier 2 networks of suppliers. These are advantages associated to the company (Narula and Santangelo, 2012, p.10).

Most of these subsidiaries were acquired at the beginning of the XXI century when the participation of Mexican companies in the US's automobile industry production chains was consolidated, within the North American Free Trade Agreement (NAFTA) framework (Basave, 2016, pp. 175-185).

In so far as the energy, petrol and gas sectors are concerned, PEMEX's subsidiaries stand out with four joint ventures. They have one in Delaware with Frontera Brownsville LLC (50/50%) and three in Texas with Shell Oil (50/50%) and with Sierrita Gas Pipeline LLC (35/65%) (PEMEX 2018). Two gas ducts are operated by Carso Energy with sales to the Mexican Federal Electricity Commission (CFE) (Carso, 2018) and the exploration and exploitation of hydrocarbons by Newpek, a subsidiary of ALFA. This last also has operations in Oklahoma and Colorado (Alfa, 2019). Biopappel's paper and cardboard plants in Arizona, New Mexico and Colorado are strategically located close to one of its largest plants in the state of Chihuahua in Mexico (Biopappel Packaging S.A. de C.V). Half the chemical and petrochemical plants belong to Mexichem and the other half to ALFA.

Both the food and car plant subsidiaries have placement advantages as they have chosen locations in states in which they have a real, significant market. In their case, the variable is a community of Latino origin. Figure 5 shows 79 food and beverage processing plants,²⁰ with food having the highest numbers in Texas (15), California (10), Delaware (6), and Oklahoma (5).

Figure 5 Plants in the USA belonging Mexican multinationals from selected economic sectors



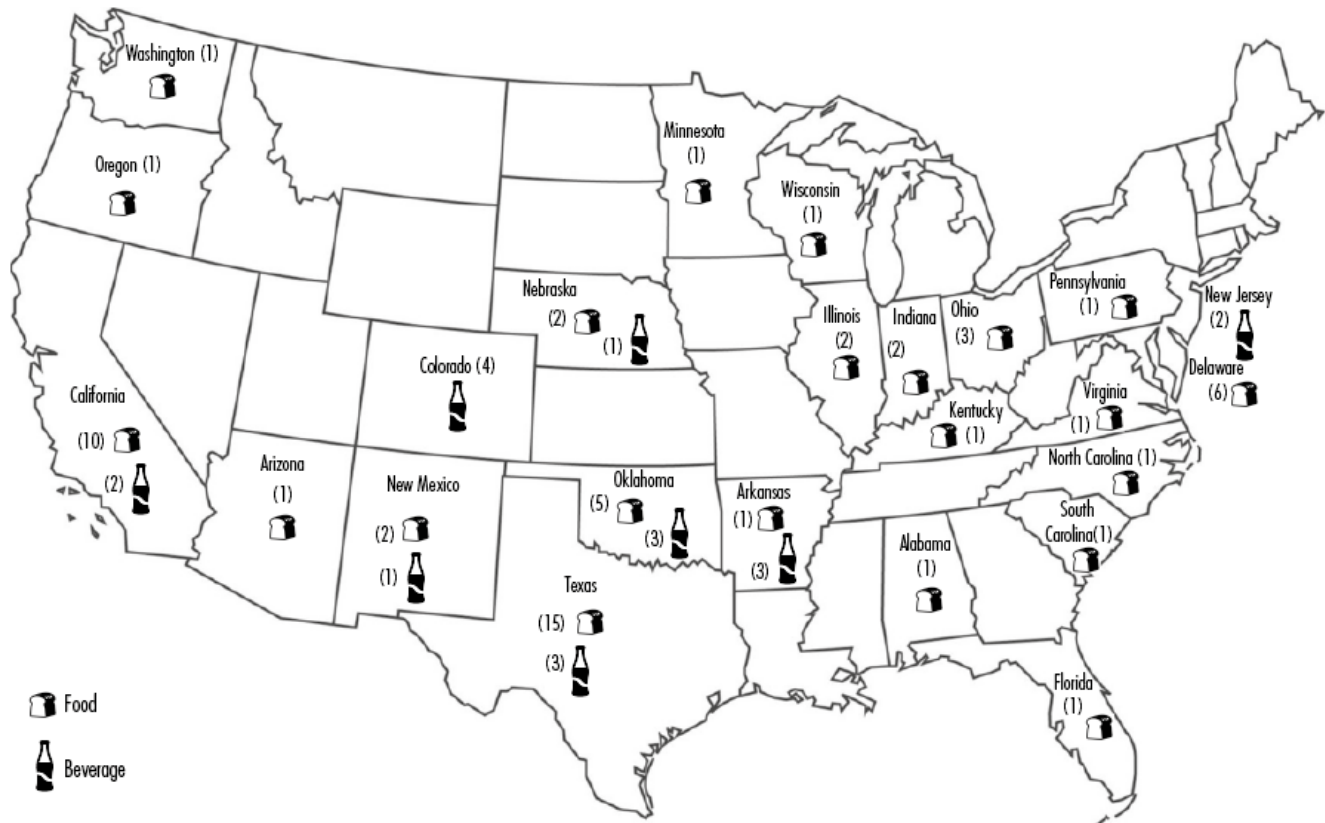
Note: Total in the figure, 37

Source: compiled by author based on information from companies' yearly financial reports and reports to the Mexican Stock Exchange in December 2018.

The Latino population in the US has been significant in numbers for decades and is constantly increasing. In 2018 Latinos represented 18% of the US's 325 million inhabitants. Of these, 60% were of Mexican descent. Between 20 and 50% of the population is of Latino descent in eight states: New Mexico (49.3%), Texas (39.7%), California (39.4%), Arizona (31.7%), Nevada (29.2%), Florida (26.4%), Colorado (21.8%), and New Jersey (20.9%).²¹ Ten states have between 9 and 19.9% inhabitants of Latino descent: New York, Illinois, Rhode Island, Washington, Kansas, Nebraska, Oklahoma, Virginia, North Carolina, and Delaware. In 13 more the Latino presence varies between 4 and 8% (US Population Census, 2019).²²

The largest number of Mexican MNE companies in the US belong to the financial, commercial and food services sector (see figure 6). This is determined by the volume of Latino consumers in the case of restaurants, most of these are in California, Illinois, and Washington. When looking at the commercial sector, the majority are in California and Texas.

Figure 6 Plants in the USA belonging Mexican multinationals from selected economic sectors



Note: total in the figure, 79

Source: compiled by author based on information from companies' yearly financial reports and reports to the Mexican Stock Exchange in December 2018.

Figure 7. Mexican multinational service units in the US



Note: total in figure, 1875

Source: compiled by author based on information from companies' yearly financial reports and reports to the Mexican Stock Exchange in December 2018.

Financial services predominate with 1693 offices offering non-bank loans,²³ which includes cheque-cashing services and money transfers (remittances) to Mexico and Central America. The quantity of Banco Azteca's subsidiaries, Grupo ELEKTRA's financial division, means that they are prominent in sending the increasing flow of remittances to Mexico which reached US\$30 527 million in 2018. There are nine states with the most financial units, California (229), Florida (215), Texas (152), Michigan (139) and Alabama (105).

6. CONCLUSIONS

Three key moments of Mexican FDI are highlighted in this article. The first is during the 1970s which concludes with the Mexican economy's structural and financial crisis at the beginning of the 1980s. The second begins in 1989, with the country's economic opening and a good part of production being redirected to external markets, in the context of this second wave of Mexican FDI. The third wave began in 2008 with the international financial crash, and during which M&A's were Mexican MNC's chosen form of expansion.

At all three points the FDI to the US was significant. The two main objectives of these investments have been to seek out markets and to appropriate specific assets, which were principally in technology. In the food and food service sectors, however, the market is new in terms of location but the same market in cultural terms, according to demand.

The theoretical and methodological framework of this article has considered the eclectic paradigm, specifically with regards to the advantages of location and placement, complementing it with works from International Business School and evolutionary theory.

Two economic crises, internal in the 1980s and international in 2008, sparked Mexican FDI going abroad. In both cases, this was how large companies responded to the downturn. In the first case, it was a defensive strategy against opening up to foreign capital which took shape as a move forward and outwards. In 2008, the strategy was to take advantage of the opportunities afforded by the crisis to acquire companies in developed economies and appropriate their technological assets. This shows the ability of Large Cap to respond to the crisis and the differentiated form of impact relative to the rest of the country's business sectors.

The placement of subsidiaries in the US, according to the results obtained in this research, is based on different factors that vary according to the MNC's economic sector.

Whilst the various placement advantages overlap, and from 2008 the determinants for penetration decisions combine placement advantages with the acquisition of strategic assets, it is possible to conclude which are the fundamental determinants in the case of several MNC's depending on which sector they operate in. Proximity to parent companies that located in Mexican border states, is a determining factor in the case of construction, energy, and metallurgy subsidiaries. For car part subsidiaries, proximity to large automobile company's market is key, and these are located in the northeast of the US. The large Latino population determined the placement of food subsidiaries, food services and financial services in the US states where they have a significant population.

Future investment scenarios in the US can be foreseen based on these factors (new or extended) depending on the speed of a possible and probable economic recovery, and the variables on which it is based.

The M&A approach to FDI in the US, which was dominant from 2008, shows how Mexican MNC's technological capacity has increased due to acquiring companies that operate in a developed economy, with all that this implies; greater technological capacity, access to qualified manpower, quality in productive inputs and links to research infrastructure and technological development (I+D).

As these MNC's implement policies for the absorption of technological and organizational knowledge, and this is passed on to the whole of corporate governance, their global competitive capabilities increase, both abroad and in Mexico. This opens an interesting and extremely important research area for evaluating the impact that their internationalization has on their productivity and the internal production chains in which they operate, as technology spreads to their other nodes.

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¹ Sales offices and affiliates not directly involved in the production of goods or services are excluded. Only the multinationals that are listed on the Mexican Stock Exchange and that publish their yearly financial statements and reports are considered.

² All the information on the businesses' subsidiaries as well as the economic sector they belong to, their number and location on the United States was obtained directly from their annual financial reports and their respective notes, reports to the share-holder assembly and to the Mexican Stock Exchange.

³ It was part of what FDI theorists identified as 'the first wave of FDI'S in developing economies'. Several developing countries with long periods of economic growth participated in this novel phenomenon; in Asia for example: Hong Kong and India. Meanwhile, in Latin America: Argentina, Brazil, Peru, Colombia and Mexico took part. It was the object of new interpretations on the nature and forms of investment from countries that, according to classical FDI theories, did not fulfil the requirements to achieve it (Díaz Alejandro, 1977; Lecraw, 1977; Wells, 1983; Lall, 1983; Chen, 1983; Katz and Kosacoff, 1983).

⁴ Only industrial plants and service subsidiaries were taken into consideration, sales offices were excluded.

⁵ Several authors pinpoint the second half of the 1980s and the 1990s as the beginning of the "second wave" of FDI'S from developing economies mostly in Asia but also in Latin America (Cantwell and Tolentino, 1990; van Hoesel, 1996, pp. 293-312; Lecraw, 1977, pp.336-344; Narula and Dunning, 2000, pp.145-150). This is where the case of Mexico fits in as a long-term tendency continuing to date, even though the next section considers changes in the investment model.

⁶ Mexican exports to Latin American and the Caribbean increased 233% between 1985 and 1995 (from US\$1 234 million to US\$4 021 million). During the last five years their growth rate was above the total export growth rate and that of the manufacturing sector (CEPAL, 1977)

⁷ 22 industrial and service subsidiaries of "large" Mexican businesses were identified in the US and another 16 sales representation subsidiaries (CEPAL, 1993, pp.381-382).

⁸ The US's GDP (with constant prices from 2010) grew between 1991 and 2000 at an average annual rate of 3.9% (World Bank, 2021a)

⁹ The three FDI flows are: capital investment, reinvestment of profit and intra-firm loans from the parent company. The negative balances correspond to a greater flow in the opposite direction, from the foreign affiliates to the parent company.

¹⁰ Neither the size of the affiliate or whether it is an industrial plant or a sales office is indicated.

¹¹ Once the toughest years of the financial crisis had past, growth in the US went back to approximately 2.4% between 2012-2015, with an average of gross capital formation of 20.6 for that period (World Bank, 2021b). Mexican MNC'S established there flourished in this framework.

¹² It should be noted that, obviously, given the size of the acquiring company, if the value of transactions is taken as a measurement, the total of those in developed countries are over five times higher than those of their counterparts: US\$689 billion and US\$127 billion, respectively in 2018. It was only in 2013 that developing countries surpassed them: US\$ 128 billion and US\$121 billion respectively (WIR, 2017, pp. 230-232 and 2019, pp.7-11)

¹³ This refers to acquisitions made for considerable sums registered in their annual financial reports. Minor acquisitions are not included. This amount includes two company acquisitions that are not part of the sample: Grupo Televisa that acquired 35% of Univision in 2010, for US\$1 200 million and ica that bought 100% of Fachina Construction Co. Inc for 59 million USD, in 2014.

¹⁴ Distribution & sales offices as well as marketing and R+D centers are not included

¹⁵ It was not possible to find the exact location of 180 industrial. Adding these to the those in the figure gives a total of 772.

¹⁶ The exact location of 122 construction industry plans (Cementos de Chihuahua:86, CEMEX: 35, Rotoplas: 1 was not found. Adding these to those that are represented in the figure gives a total of 598.

¹⁷ The exact locations of 12 chemical and petrochemical plants belonging to Mexichem were not found. Adding these to the those that are represented in the figure brings the total to 49.

¹⁸ The vitro plant that makes windows for the car and construction industry is located in Pennsylvania, which borders with Ohio an important seat of the car industry.

¹⁹ Nemak has 23 industrial plants in 16 countries. Ford is a partner with 5.45% of shares and 24% of Nemak's sales are to Ford (ALFA, 201

²⁰ It was not possible to find the exact location of 46 bimbo food plants. Adding these to those that appear in the figure gives a total of 125.

²¹ In some of these states' larger cities the Latin population has a significant presence. For example Miami, FL. (68.6%), San Antonio, TX.(55.4%), Riverside-San Bernardino, CA. (51.1%), Los Angeles, CA. (45.2%), Houston, TX. (37.6%), and Phoenix, AZ. (31%). (US Population Census, 2017).

²² Undocumented migrants were not included due to the lack of information on their precise location, but it is estimated to be over 11 million people.

²³ In April 2012 ELEKTRA acquired Advance America and Cash Advance Centers Inc. From 2019 the name changed to Purpose Financial Inc.