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Evaluation of the effects of the Free Trade Agreement between the European Union and Mexico on bilateral trade and investment

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Abstract

The Free Trade Agreement between the European Union and Mexico represented the elimination of tariffs for an extensive group of goods and the elimination of restrictions on foreign direct investment. After fifteen years of its implementation, this document presents an estimation of its impact and analyses the further benefits from an extension including agricultural products not covered so far. Additionally, it revisits the main factors which make Mexico a more favourable destination for business, among others the quality of its infrastructure, the competitive wages and the tariff advantages of producing and exporting from Mexican territory to USA and other international destinations. Our findings point out that the implementation of the treaty benefited the commercial flows of the goods for which each region presents a comparative advantage. We also find that foreign direct investment from the European Union to Mexico has a positive and significant effect on Mexican exports to the world. Finally, the revealed comparative advantage index and other indicators suggest that trade openness in the entire agricultural sector will allow both parties to obtain all possible gains in terms of efficiency.

Key words: trade, Mexico, European Union, comparative advantage.

JEL: F14, F23.

1 Introduction

July 2015 marks the 15th anniversary of the Free Trade Agreement between the European Union and Mexico (EU-MX FTA). This agreement eliminated duties on a large range of goods and restrictions on investment flows. According to economic theory, the elimination of trade barriers creates economic benefits due to generation of the conditions that allow each country to specialise in those products in which is more efficient in relative terms – the concept of comparative advantage.

This document covers three purposes. First of all, it makes an estimation of the impact of the EU-MX FTA on flows of goods and investment between Mexico and the EU. Second, it analyses the further benefits of extending the EU-MX FTA, from both a European and a Mexican perspective. Third, it reviews the advantages offered by Mexico for attracting foreign direct investment.

The next section presents a detailed description of the duty relief schedule, in order to get a better understanding of the time-frame under which the treaty was implemented, and which could have had an effect on the impact seen in the exchange of goods. Section 3 describes the trade flows between Mexico and the EU, based on a standard classification of goods that were analysed for their revealed comparative advantage. The same section compares the flows of foreign direct investment (FDI) that Mexico has received in comparison with other Latin American countries, both for the decade before signing the EU-MX FTA and for the first fourteen years that it has been in effect. It also presents the results of a gravity model that evaluates the hypothesis of mutual benefits arising from the EU-MX FTA. Finally, it is presented an econometric analysis to determine the influence of the FDI from the EU on Mexican manufacturing exports to the world.

Section 4 offers a review of the subsequent benefits of extending the EU-MX FTA, considering the strengths of Mexico today against the Mexico that signed the agreement in 2000. The factors that place Mexico in an attractive position to the world in comparison with the previous decade include total factor productivity and recent structural reforms. Using our own methodology, we also identify some groups of products that have the greatest potential to benefit from an extension of the EU-MX FTA. The end of the section shows some agricultural, fisheries and agro-industrial products that could be included in the treaty to extend its coverage and which would bring benefits to both economies considering the concept of comparative advantage.

Section 5 analyses the aspects of the Mexican economy that make it attractive as a recipient of foreign direct investment, and that could represent an advantage for the European Union by allowing it to produce goods in Mexico and exporting them to other regions, mainly to the rest of North America. These include macro-economic stability, the demographic structure, global value chains, free trade agreements and the country as a platform for exporting products to USA by harnessing the geographic proximity and the preferential access to that market offered by the North American Free Trade Agreement (NAFTA).

Finally, the last section presents the most important conclusions of the analysis made in this document.

2 Background

The entry into force of the EU-MX FTA on 1 July 2000 marked the beginning of gradual and reciprocal liberalisation of trade in goods and services. The free trade agreement immediately removed tariffs on a significant group of goods and provided for the gradual elimination of the rest, so that the liberalisation process was carried out on various dates and at different speeds, depending on the type of product, according to a pre-arranged timetable.

The EU-MX FTA covers all industrial goods and a fraction of agricultural and fisheries products. Industrial products represented more than 90% of the trade in goods between Mexico and the EU in 2000 (Silvetti 2001), and they were grouped in four categories based on the applicable liberalisation schedule. Category A comprised those industrial goods which benefitted from the immediate removal of all tariffs as of the Agreement's entry into force on 1 July 2000 (Articles 5 and 6 of Decision 2/2000 of the European Union-Mexico Joint Council). The vast majority of the industrial goods manufactured in Mexico (82%) belonged to this category, compared to 47% of EU imports (Silvetti 2001). Some examples of category A industrial goods include imports from Mexico of photographic and cinema equipment, oils and resins, perfumes and cosmetics, soap and waxes.[1]

Meanwhile, categories B, B+ and C were reserved for industrial goods with stepwise tariff reductions, the first coinciding with the entry into force of the EU-MX FTA and the following reductions implemented on January 1st of each successive year (Articles 5 and 6 of Decision 2/2000 of the European Union-Mexico Joint Council). For example, the tariffs charged on EU imports of category B goods from Mexico, which were set at 20% before the Agreement entered into force, were reduced to 18% in 2000, 12% in 2001, 8% in 2002, 5% in 2003, 2.5% in 2004 and 0% in 2005. Examples of category B goods include imports from Mexico of alkaline metals, zinc, aluminium oxide, phosphates and certain types of alcohol. By 2003 the European Union had removed all tariffs on imports of Mexican industrial goods, and Mexico reciprocated in 2007. In this regard, the liberalisation timetable was asymmetrical, favouring Mexico.[2]

Meanwhile, 62% of trade in agricultural and fisheries products was covered by the Agreement (Delegation of the European Union to Mexico, 2014). As in the case of industrial goods, agricultural and fisheries products were classified based on a pre-arranged tariff reduction schedule. Category 1 comprised goods which benefitted from the immediate removal of tariffs as of the Agreement's entry into force (Articles 8 and 9 of Decision 2/2000 of the European Union-Mexico Joint Council). Examples of these goods include imports of Mexican thoroughbred livestock (horses, cattle, pig breeds, and other), and certain types of frozen meat.[3]

Categories 2, 4 and 4a comprised agricultural and fisheries products subject to gradual elimination of tariffs over a maximum period of ten years (Article 8 and 9 of Decision 2/2000 of the European Union-Mexico Joint Council). For example, the tariffs applicable to imports of category 2 products from Mexico were reduced to 75% (of the base tariff) upon the Agreement's entry into force, and were subsequently cut down to 50%, 25% and 0% in 2001, 2002 and 2003 respectively. Examples of category 2 products include Mexican imports of live animals (e.g. pigeons and eels), and domestic rabbit meat (fresh or frozen).[4]

1: For further details of the goods included in categories A, B and B+, see annexes I and II to Decision 2/2000 of the European Union – Mexico Joint Council, available at http://www.sice.oas.org.
2: Ibid.
3: Ibid.
4: Ibid.

In addition to the products benefitting from progressive liberalisation and the eventual removal of tariffs, the Agreement also establishes preferential tariff quotas (category 6) and special concessions with regard to certain products (category 7). The series of agricultural products which are not covered by the Agreement are grouped in category 5, which includes Mexican exports of certain live animals, certain kinds of meat and edible offal, dairy products, eggs, honey, flowers, certain fruits and vegetables, cereals and flour, olive oil, preparations based on crustaceans and other marine invertebrates, tuna loins, certain sweeteners (natural and artificial), certain fruit preserves and similar preparations, certain fruit juices, wine and rum (Annex I of the Decision 2/2000 of the European Union-Mexico Joint Council). Meanwhile, the EU exports which were not covered by the EU-MX FTA include certain live animals, meat and other edible offal, certain animal fats, dairy products, eggs, certain fruits and vegetables, cereals, certain vegetable oils, sausages and cold meat, tuna loins, certain sweeteners (natural and artificial), cocoa and chocolate, cereal preparations, certain conserves, grape juice, ice-cream, rum, prepared animal feed and cigarettes (Annex II of Decision 2/2000 of the European Union-Mexico Joint Council).[5] Finally, category 0 was reserved for products covered by protected denominations in the EU such as wine and other beverages (Champagne, Bordeaux, Rioja, etc.) and cheeses (Parmigiano Reggiano, Roquefort, Cheshire, etc.) (Silvetti 2001). Goods which may not be traded between Mexico and the EU include used cars, used clothing and oil products (Delegation of the European Union to Mexico 2014).

Trade benefits to the extent that the goods concerned comply with the rules of origin established in the Agreement. These rules specify that goods benefitting from the treaty must be of Mexican origin or originated in the European Union. In general, goods originated in the parties are understood to comprise: i) goods entirely obtained in the territory of Mexico or the EU (e.g. fresh vegetables, live animals born and raised, minerals mined etc.); ii) goods manufactured exclusively out of materials originated in the territory of the parties,[6] and iii) manufactured goods which integrate materials not originated in the parties, provided that such materials have undergone sufficient transformation in the parties' territory (Silvetti 2001).[7]

In addition to opening up trade, the EU-MX FTA also established the necessary measures to achieve progressive and reciprocal liberalisation in the trade of services and investment, and in payments related to them. The provisions relating to the opening of services apply to all sectors except audio-visual services and air services (Article 2 of Decision 2/2001 of the European Union-Mexico Joint Council).[8] The Agreement thus guarantees the gradual opening of the parties' markets to the service providers, so that neither Mexico nor the European Union can adopt any restriction on the number of the other party's suppliers, the total value of assets or transactions, the total number (or total amount) of operations, the total number of individuals who can be employed in a given service sector, and the share of foreign capital (expressed as a maximum percentage limit on shares held by foreigners or as the total value of individual or aggregate foreign investments). Likewise, the parties may not adopt any measure which might require a specific kind of legal entity or co-investment to allow a supplier to provide a service.

Besides the gradual liberalisation of services, the EU-MX FTA also includes provisions regarding the "most favoured nation" and "national treatment" principles. According to the World Trade Organisation (WTO), these principles constitute the basis for the multilateral trade system (WTO 2014). The most favoured nation principle establishes that the treatment granted to services suppliers of the other party shall not be less favourable than

5: For details of the goods included in category 5 of the Agreement, see Annex A.
6: Materials originating in the EU and incorporated into a product obtained in Mexico are considered to originate in Mexico and vice versa (bilateral accumulation rule) (Silvetti 2001).
7: The type of transformation held to be sufficient varies depending on the product. For further detail, see Appendix II to Annex III of Decision 2/2000 of the European Union-Mexico Joint Council).
8: Except services consisting of the repair and maintenance of aircraft during the period in which an aircraft is withdrawn from service, the sale and marketing of air transport services and automated booking services (Article 2 of Decision 2/2000 of the European Union-Mexico Joint Council).

that accorded to the suppliers of similar services from any third country (Article 5 of Decision 2/2001 of the European Union-Mexico Joint Council). The national treatment principle establishes that the treatment accorded to suppliers of services from the other party shall not be less favourable than that given to domestic suppliers of similar services (Article 5 of Decision 2/2001 of the European Union-Mexico Joint Council). It is noteworthy that national treatment is applicable once the service is provided in the national market (WTO 2014). This principle not only does apply to services, but also to trade in the goods covered by the EU-MX FTA: imported goods and those produced in the country receive equal treatment after entering the national market.

Maritime and financial services deserved special chapters of the Agreement. The provisions referring to maritime services guarantee that parties will continue to apply the principle of free access to the market and to international maritime traffic on a commercial and non-discriminatory basis. Furthermore, both Mexico and the EU will continue to grant vessels operated by the other party's service suppliers no less favourable treatment than that granted to their own vessels. Moreover, each party shall permit the other party's service suppliers to maintain a commercial presence in its territory under no less favourable conditions than those accorded to their own service suppliers (Article 10 of Decision 2/2001 of the European Union-Mexico Joint Council).

With respect to financial services, the Agreement provides the free establishment of commercial presence and cross-border trade (Articles 12 and 13 of Decision 2/2001 of the European Union-Mexico Joint Council). Accordingly, suppliers of financial services may establish a direct presence in the territory of the other party, receiving treatment that is no less favourable than that given to suppliers from third-party nations at the moment of establishment, and treatment that is no less favourable than that accorded to domestic suppliers after establishment in the country (Articles 14 and 14 of Decision 2/2001 of the European Union-Mexico Joint Council). The EU-MX FTA includes an additional clause related to key personnel of financial services suppliers, which prohibits the party from requiring that the suppliers of the other party engage individuals of any given nationality as senior management or other key personnel. Moreover, no party may require that more than a simple majority of the board of directors of a service supplier of the other party should be composed of nationals of the party or persons resident in its territory, or a combination of the two (Article 16 of Decision 2/2001 of the European Union-Mexico Joint Council).

In the matter of investment and related payments, the EU-MX FTA establishes the progressive removal of restrictions on payments related to investment between the parties, while Mexico and the EU undertake to promote an attractive and stable environment for reciprocal investment (dissemination of investment legislation and opportunities, development of a favourable legal framework, unified and simplified administrative procedures etc.) (Articles 29 and 33 of Decision 2/2001 of the European Union-Mexico Joint Council).

In addition to the provisions governing trade in goods and services, the Agreement also establishes the commitment of both parties to apply their respective laws and perform their domestic obligations with respect to legislation on competition and intellectual property (Annex XV and Article 40 of Decision 2/2000 of the European Union-Mexico Joint Council and Article 36 of Decision 2/2001). In the case of the competition legal framework, the objective is to prevent the benefits of the Agreement from being diminished or cancelled out by anti-competitive activities. In the case of intellectual property, the Treaty refers to the obligations arising under multilateral conventions such as the Agreement on Trade-Related Aspects of Intellectual Property Rights, the Paris Convention for the Protection of Industrial Property, and the Berne Convention for the Protection of Literary and Artistic Works, among others.

Finally, in the matter of government procurement, the Agreement establishes the principle of national treatment and non-discrimination, so that the suppliers of goods and services of the other party can compete in tender

processes called by public entities under equal conditions to comparable national suppliers, provided the value of the contract tendered is equal to or greater than certain previously established thresholds (Article 25 of Decision 2/2000 of the European Union-Mexico Joint Council). In the case of Mexico, public entities include only institutions of the Federal Government and state-owned enterprises (Mexican Postal Service, Pemex, Federal Electricity Board etc.), but not entities at the sub-federal level. In the case of the EU, public entities include the central government agencies of each member State, as well as state-owned enterprises but not entities at the sub-central level (Annex VI of Decision 2/2000 of the European Union-Mexico Joint Council).

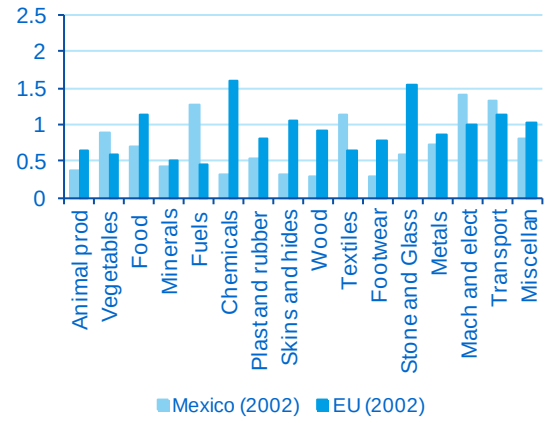
3 Benefits of the EU-MX FTA

3.1 Analysis of the revealed comparative advantage

Since 2002 the EU has maintained a revealed comparative advantage (index of more than one, as is defined in annex B) in the production of food, chemicals and related products, leather and hides, stone and glass, machinery and electrical equipment and transport equipment (see figures 3.1 and 3.2). Meanwhile, Mexico has held onto its revealed comparative advantage in only two product groups, namely machinery and electrical equipment, and transport equipment (see figures 3.1 and 3.2). It is possible for both economies to maintain a comparative advantage in the same product types when the good in question is not a commodity and products are differentiated. The new theory of international trade explains this phenomenon in terms of "two-way trade."

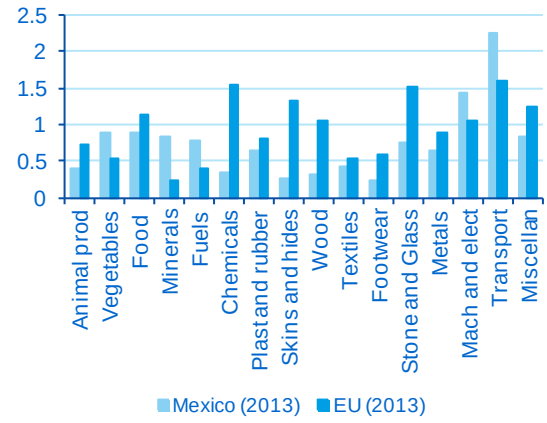
It is worthy to mention that certain product groups[9] where no comparative advantage is observable include specific products for which an advantage was maintained in the period 2002-13.[10] Mexican products of this kind include live animals in "Animal products"; edible vegetables, tubers and certain root vegetables, edible fruits and nuts, citrus fruit peel, melon and other traceable products in "Vegetables"; beverages and liqueurs in "Food"; ceramics, glass and crystal in "Stone and glass"; zinc and related products in "Mineral products"; and furniture, beds, mattresses and mattress bases in "Miscellaneous" (see figure 3.3).

Figure 3.1
Revealed comparative advantage of Mexico and the European Union in 2002 (an index score greater than 1 reflects a revealed comparative advantage)



Source: BBVA Research based on WITS data

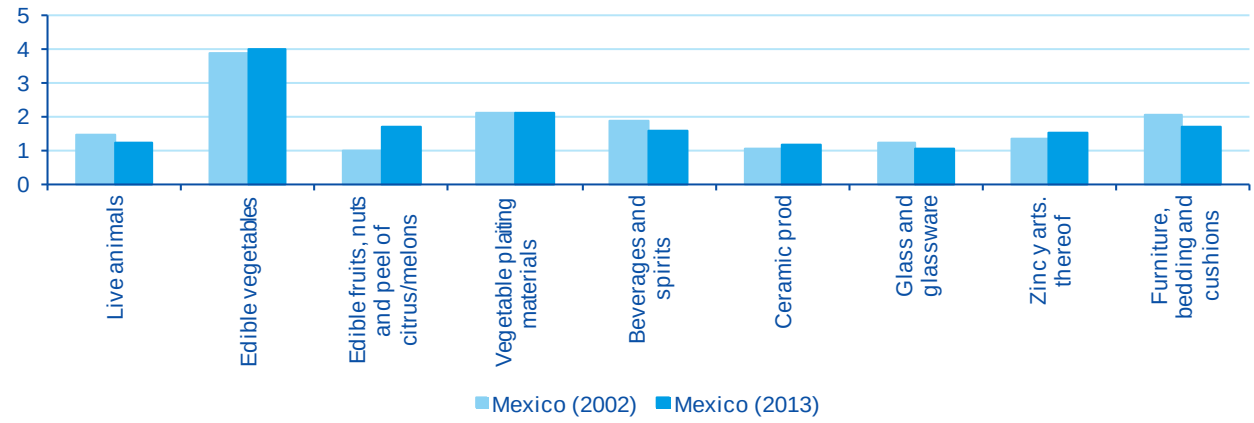
Figure 3.2
Revealed comparative advantage of Mexico and the European Union in 2013 (an index score greater than 1 reflects a revealed comparative advantage).



Source: BBVA Research based on WITS data

9: Known as "standardised product groups".
10: The standard product groups are: 1) animal products; 2) plant products; 3) foodstuffs; 4) mineral products; 5) fuels; 6) chemicals and similar products; 7) plastics and rubber; 8) leather and hides; 9) wood products; 10) textiles; 11) footwear; 12) stone and glass; 13) metals; 14) machinery and electrical equipment; 15) transport equipment; and 16) sundry products.

Figure 3.3
Goods with a revealed comparative advantage produced in Mexico but belonging to a standard group that enjoys no comparative advantage

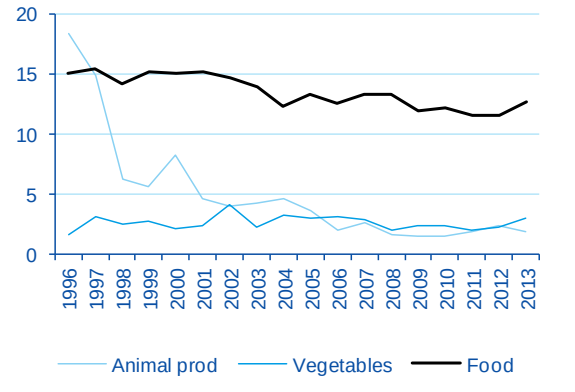


Source: BBVA Research based on WITS data

3.2 Analysis of trade and investment flows since signing of the EU-MX FTA

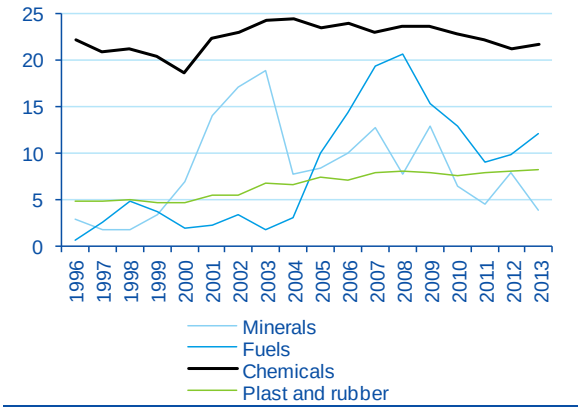
According to economic theory, the benefits of international trade derive from the exchange of trade flows when countries export products for which they enjoy a comparative advantage and import others for which they have a comparative disadvantage. As a result, each economy can specialise in the goods it produces most efficiently, generating gains for both countries concerned. As was expected, the EU-MX FTA helped certain European goods increase their share in Mexican imports after 2000. In fact all of the standard product groups in which the EU maintains a revealed comparative advantage of more than one (except food, and machinery and electrical equipment) achieved significant share increases (see figures 3.4, 3.5, 3.6 and 3.7; black line indicates products for which the EU has a revealed comparative advantage index greater than one).

Figure 3.4
European Union share of Mexican imports of food products (% of total)



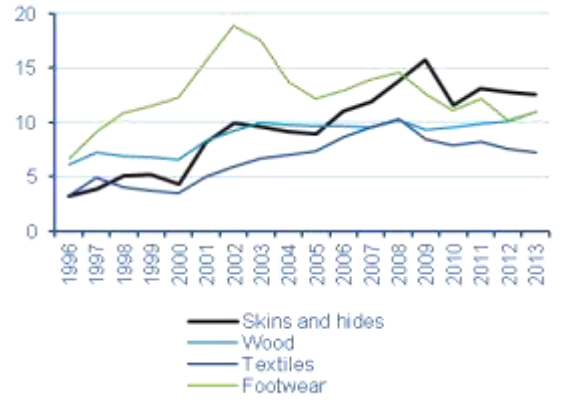
Source: BBVA Research based on WITS data

Figure 3.5
European Union share of Mexican imports of minerals, chemicals & plastics (% of total)



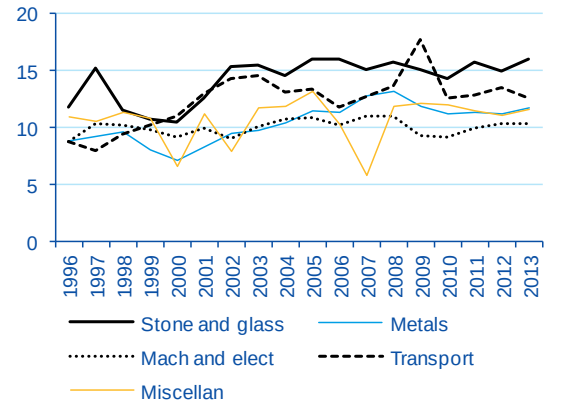
Source: BBVA Research based on WITS data

Figure 3.6
European Union share of Mexican imports of minerals, chemicals and plastics (% of total)



Source: BBVA Research based on WITS data

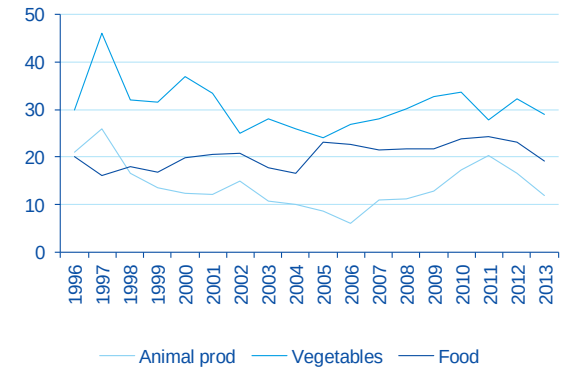
Figure 3.7
European Union share of Mexican imports of stone, metals, machinery and transport equipment (% of total)



Source: BBVA Research based on WITS data

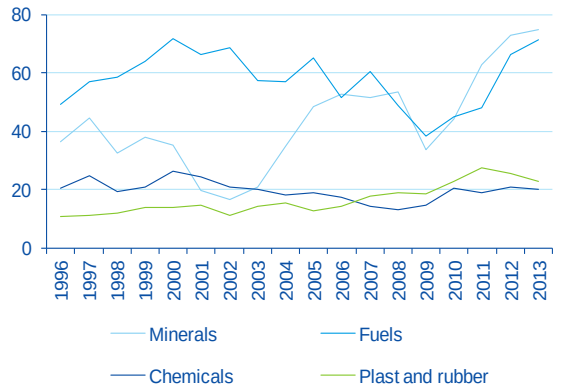
Meanwhile, the share of Mexican product groups with a revealed comparative advantage of more than one (machinery and electrical equipment, and transport equipment) in European Union imports also grew slightly. Hence, the EU-MX FTA has helped both economies increase their exports of those products in which they enjoy a comparative advantage, which contributed to a more efficient factor allocation in the EU and Mexico. The positive effects of the trade agreement were actually materialised some years after the complete elimination of tariffs, what could be expected since firms take some time to make the required adjustments to export to new markets (see figures 3.8, 3.9, 3.10 and 3.11; black line indicates products for which Mexico has a revealed comparative advantage index greater than one).[11]

Figure 3.8
Mexican share of European Union imports of food products (% of total)



Source: BBVA Research based on WITS data

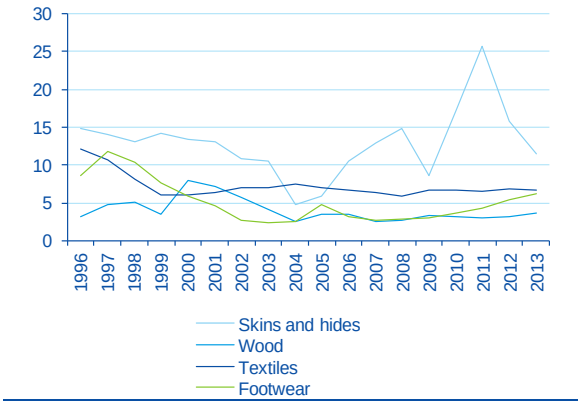
Figure 3.9
Mexican share of European Union imports of minerals, chemicals and plastics (% of total)



Source: BBVA Research based on WITS data

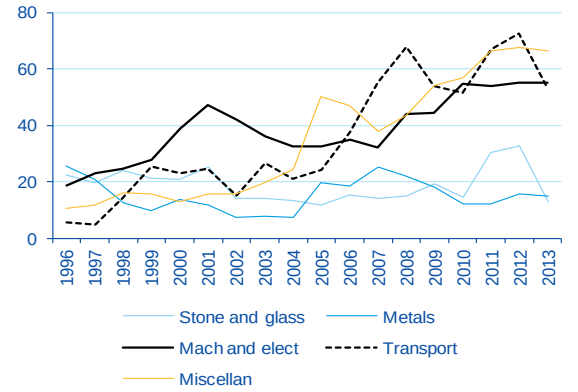
11: Tariffs on most machinery and electrical goods were finally eliminated in July 2000, and in January 2003 for transport equipment.

Figure 3.10
Mexican share of European Union imports of hides, wood, textiles and footwear (% of total)



Source: BBVA Research based on WITS data

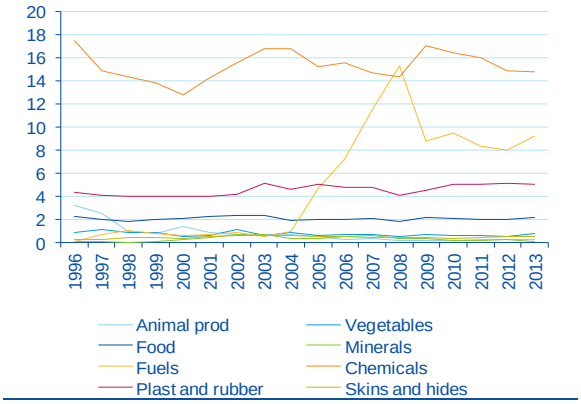
Figure 3.11
Mexican share of European Union imports of stone, metals, machinery and transport equipment (% of total)



Source: BBVA Research based on WITS data

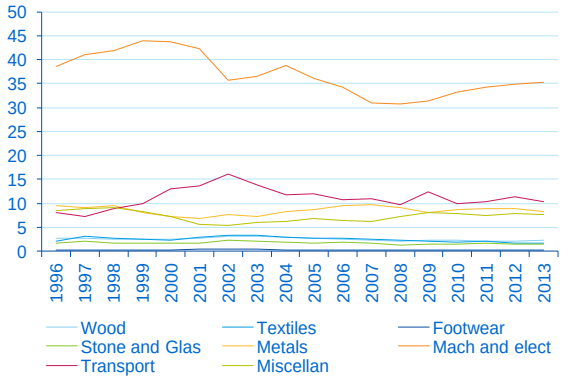
Having established the increase in the share of Mexican products in EU imports and vice versa, it will also be of interest to determine the share of these products in Mexican and EU exports. The shares accounted for by chemicals and related products and transport equipment stand out in EU exports to Mexico. In 2013, these product groups contributed 14.8% and 10.3% respectively (see figures 3.12 and 3.13). In this regard, we may note that machinery and electrical equipment is the group which has historically made the largest contribution. However, its share in total EU exports to Mexico has remained relatively stable since 2000.

Figure 3.12
Mexico share of European Union exports of machinery, transport equipment and other products (% of total EU exports to Mexico)



Source: BBVA Research based on WITS data

Figure 3.13
Mexico share of European exports of fuels, plastics and other products (% of total EU exports to Mexico)

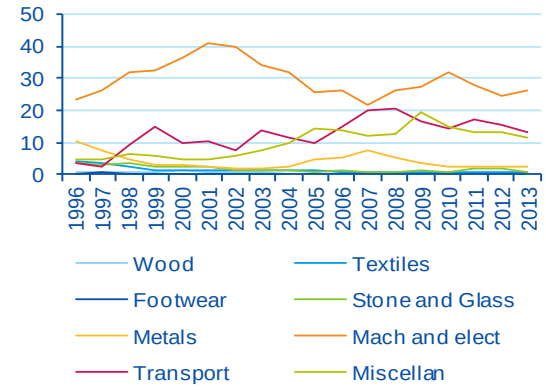


Source: BBVA Research based on WITS data

In the case of Mexican exports to the EU, machinery and electrical equipment and transport equipment appeared to benefit the most, increasing their share in total EU imports. However, what was the weight of these product groups in total Mexican exports to the EU? The percentage share accounted for by each shows that

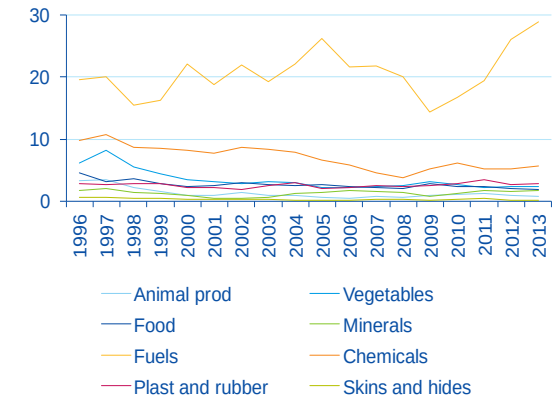
both were among the top three product groups (the other group is fuels). In 2013 machinery and electrical equipment and transport equipment accounted for 26.6% and 13.2% of exports respectively (see figure 3.14). Even though Mexican fuels did not recorded a revealed comparative advantage greater than one in that year, this product group nevertheless made up 28.9% of total Mexican exports to the EU (see figure 3.15). This figure represents the highest percentage share of all product groups in 2013, and a record high in the fuels series for the period 1996-2013.

Figure 3.14
EU share of Mexican exports of machinery, transport equipment and other products (% of total Mexican exports to the EU)



Source: BBVA Research based on WITS data

Figure 3.15
EU share of Mexican exports of fuels, plastics and other products (% of total Mexican exports to the EU)



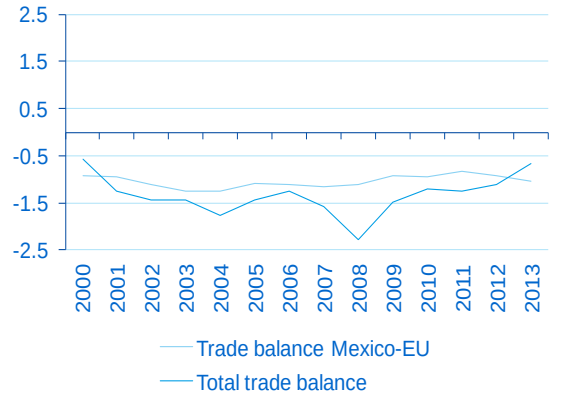
Source: BBVA Research based on WITS data

A combined analysis of the flow of exports and imports reveals that Mexico ran a trade deficit with the EU in the period 2000-13. However, this trade deficit has shrunk in the years since the Great Recession compared to the period 2000-09. As a result, this indicator averaged 0.9% of nominal GDP in 2010-13, down from the average of 1.1% of nominal GDP in the preceding period (see figure 3.16). It is worth mentioning that Mexico's overall trade deficit also experienced a reduction. This macroeconomic variable averaged 1.1% of nominal GDP in 2010-13 compared to 1.4% in 2000-09. The EU also improved on this indicator, going from a surplus of 0.8% in 2000-09 to 1.7% in 2010-13.

The existence of a current account deficit with another country or region, or indeed with the rest of the world, need not necessarily be harmful to an economy (Montiel 2009). For example, an economy may smooth and optimise its consumption over time, given expectations of higher future earnings caused by positive shocks in productivity or an improvement in the terms of trade. Furthermore, increased global liquidity resulting from the quantitative easing programmes implemented by the Federal Reserve to mitigate the effects of the Great Recession may perhaps made more attractive to increase debt with the rest of the world to finance a trade deficit.

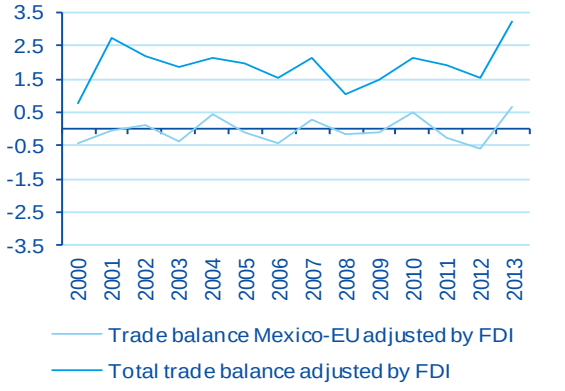
A more complete evaluation of the trade between Mexico and the EU would need to address foreign direct investment flows (FDI). If European FDI is included in Mexico's trade deficit with the region, the results observed in the years immediately after the signing of the EU-MX FTA are mixed (see figure 3.17). However, the net result obtained by adjusting the total trade deficit by total FDI is clearly positive for Mexico.

Figure 3.16
Mexico's balance of trade with the European Union and total balance of trade (% of nominal GDP)



Source: BBVA Research based on WITS and SE data

Figure 3.17
Mexico's balance of trade with the European Union and total adjusted by FDI (% of nominal GDP)



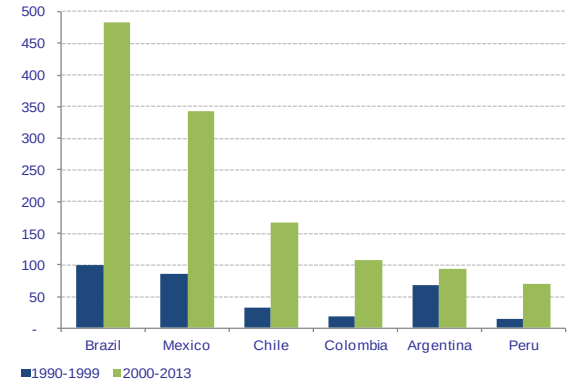
Source: BBVA Research based on WITS and SE data

3.3 Foreign direct investment flows in Mexico since signing of the EU-MX FTA

The countries of Latin America have proved to be attractive destinations for foreign direct investment (FDI), with it rising to record levels in recent years and especially since 2000. In absolute terms, these destinations significantly increased FDI flows in 2000-13 compared to 1990-99. The main beneficiaries in 2000-13 were Brazil (USD484bn) and Mexico (USD342bn), concentrating the lion's share (65%) of the FDI received by the six countries considered (see figure 3.18). Mexico stands out by producing goods with a higher aggregate value, and also because of the geographical advantage afforded by its proximity to the US market.

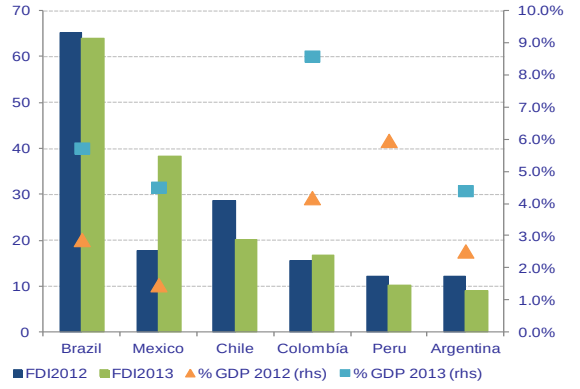
FDI flows to the countries of Latin America increased by 4.8% in 2013, the last year for which data are available. Mexico and Colombia benefitted the most, to the detriment of Brazil, Chile, Peru and Argentina. In 2013, FDI flows to Mexico and Colombia rose by 117% and 8% respectively, compared to 2012 (see figure 3.19). The total FDI reaching Mexico in 2013 could hardly be bettered, because it was boosted by the acquisition of the Modelo Group by the Belgian brewer InBev Anheuser for more than USD13bn.

Figure 3.18
Cumulative FDI inflows (USD bn)



Source: BBVA Research based on UNCTAD data

Figure 3.19
FDI inflows, 2012 vs. 2013 (USD mn)



Source: BBVA Research based on UNCTAD data

The nations of Latin America have been major beneficiaries of productive investment. The size of Mexico and Brazil allows the generation of economies of scale, ensuring the concentration of a significant percentage of productive investment flows.

3.4 Evaluation of the impact of the EU-MX FTA based on a gravity model

In this section we apply a gravity model to measure the effect of the entry into force of the EU-MX FTA on flows of Mexican exports to the European Union, and of EU exports to Mexico. The gravity model is typically employed to analyse flows of goods between countries. The underlying insight for the model, which is derived from Newton's law of gravity, is very simple, stating that the flow of goods between two economies (country of origin and country of destination) will depend on their size and on the distance between them. In addition to distance, the model allows the inclusion of other variables to indicate other kinds of geographical barriers, such as dummies to indicate whether the country of origin or the country of destination is an island or is landlocked. Usually, some other variables are included to indicate the level of cultural links between the two economies. For example, dummies may be used to indicate whether the two countries share the same language, or whether one is a former colony of the other. The most general form of the model can be represented as follows (Kepaptsoglou, Karlaftis & Tsamboulas 2010):

$$Flow_{ij}=ßX+\varepsilon_i \quad (1)$$

where:

X: is a vector containing the natural logarithm of the explanatory variables, and
F: is the natural logarithm of the flow of goods between country i and country j.

In addition to the analysis of trade flows *per se*, the gravity model can also be used to estimate the impact of trade agreements between countries, by including a dummy variable taking a value of one when the country of origin and the country of destination are both party to the same agreement. While it is possible that this dummy may include the effects of factors that are not strictly related with the entry into force of the treaty, it provides an initial approximation to the impact of trade agreements and is a common approach in the literature

(Kepaptsoglou, Karlaftis & Tsamboulas 2010). We have applied this approach in our analysis of the impact arising from the entry into force of the EU-MX FTA.

The database utilised was constructed from a data panel on annual export flows in the 97 groups of goods included in the Harmonised System 1996[12] (two-digit economic sectors) among 80 countries for the period 1996-2013.[13] The data was obtained from the World Integrated Trade Solution (WITS platform) published by the World Bank, and it includes Mexico and 15 EU nations: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom). In many cases, data on the flow of exports for a given group of products between one country and another are available for each of the 18 years comprising the study period. In other cases, however, the data is incomplete and figures are available only for certain years.[14] Given that our intention is to group the nations of the European Union into a single trade flow (in order to assess the impact of the EU-MX FTA on flows to and from the EU as a whole, rather than individually to each Member State), we opted to consider only countries reporting complete export flows for each of the 18 years considered. Had we not done so, we could not have grouped the trade flows of the EU Member States, because variations observed in the total might be due to the presence of values omitted in certain periods. In this way, we constructed a balanced panel of 18 years (1996-2013) for each of the 97 economic sectors, which allows a better estimate of the impact of the EU-MX FTA on trade flows between Mexico and the EU as a whole.[15]

The estimates were performed by a fixed effects model (one regression for each of the 97 economic sectors). The explanatory variables considered included per capita GDP in the country of origin and in the country of destination (in order to approximate the size of the economies), and we also included various temporal dummies to allow the equation intercept to vary between individuals and over time.[16] The inclusion of temporal dummy variables in addition to individual effects is known as a two-way effects model (Cameron & Trivedi 2009). The variable measuring the effect of the EU-MX FTA is a dummy variable ($FTAEUMX_{ijt}$), which takes a value of 1 if both economies are members of the Agreement in the period in question. The per capita GDP data were obtained from the International Monetary Fund. All monetary variables are expressed in terms of purchasing power parity (USD) and as logarithms. The results for Mexico were calculated based on observations of Mexico as the reporting country. The results for the EU were calculated based on observations of the EU as the reporting country.

Let us note here that we only had data for four years before the Agreement entered into force, and the export trend before may have been different from the trend observed in 1996-99. Hence, the estimated values of $FTAEUMX_{ijt}$ could include a positive bias. Moreover, the estimated values should not be interpreted causally in interpreting the results, but rather as correlations which could in principle indicate that implementation of the EU-MX FTA had a positive effect on export flows between Mexico and the EU. It is likely, for example, that the signing of the Agreement is an endogenous variable, which is to say that the flows observed between the parties themselves helped bring the two economies closer together, and that the FTA was the outcome of the resulting negotiations.

12: The Harmonised System 1996 was used because it is the classification that provides export flows over the longest possible period. Under any other version of the Harmonised System, publicly available information would not provide any data before 200 (the year in which the EU-MX FTA took effect).
13: The earliest publicly available information dates from 1996. For further details, see http://wits.worldbank.org.
14: For examples, observations of exports of live animals (sector 01 in the Harmonised Systems 1996) from Mexico to Australia are available only for 1996, 2005, 2006, 2007, 2008 and 2009.
15: The number of countries making up each of the 97 panels varies depending on the economic sector concerned. These are shown for some sectors in tables 1A and 2A (column 2).
16: The fixed effects approach is the appropriate econometric model based on the Hausman test. This methodology groups the data provided by the observable and unobservable variables in an individual effect, which varies between countries but does not vary over time. These variables include the distance between countries and dummy variables indicating other non-time-related characteristics like the existence of a common language or colonial links. Such characteristics were omitted from the estimation of the model for this reason.

The results suggest that the entry into force of the EU-MX FTA did have a significant effect on exports of numerous sectors, some of which belong to the product groups in which Mexico and the EU enjoy comparative advantages. In this regard, we may also note that many of the sectors which benefitted from the Agreement did not account for a major share of trade flows between Mexico and the EU at the time of the signing of the treaty, but our findings point to a greater participation of these groups in the future.

In the case of Mexican exports, the ten economic sectors which saw the largest positive impacts were grouped in the following categories: i) transport equipment; ii) chemicals and similar products; iii) vegetables; iv) food; v) plastics and rubber; and iv) miscellaneous.[17] Table 3.1 shows the two-digit economic sectors considered. The first column reports the average number of times that the export flow increased after the agreement entered into force (the asterisks indicate the statistical significance of the values estimated). For example, the flow of exports in sector 87, comprising vehicles other than railway or tramway rolling-stock, and parts and accessories thereof, increased on average 1.8 times after the EU-MX FTA came into force. The second column shows the number of countries making up the balanced panel, while the third column shows the R^2. The last two columns provide the number of the economic sector in question and a brief description of the goods it embraces.

Table 3.1
Mexican exports

Impact of the EU-MX FTA: number of times the flow increased[1]		Number countries in the panel	R^2	Sector	Description
111.3	***	11	0.307	79	Zinc and articles thereof.
3.5	***	14	0.427	11	Products of the milling industry; malt; starches; inulin; wheat gluten.
2.3	***	15	0.440	31	Fertilisers.
1.9	***	22	0.133	37	Photographic or cinematographic goods.
1.8	***	31	0.563	87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof.
1.5	***	36	0.341	90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.
1.4	***	21	0.450	20	Preparations of vegetables, fruit, nuts or other parts of plants.
1.3	***	29	0.174	28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes.
1.3	**	5	0.262	6	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.
1.0	***	30	0.481	40	Rubber and articles thereof.

Source: BBVA Research.
[1]*** p<0.01, ** p<0.05, * p<0.1

In the case of the EU exports, the ten economic sectors enjoying the largest positive impact were grouped in the following categories: i) footwear; ii) mineral products; iii) chemicals and similar products; iv) vegetables; v) stone and glass; vi) transport equipment, and vii) textiles. Table 3.2 shows these two-digit economic sectors. The content of the columns is the same as described for Table 3.1.

17: The grouping corresponds to that utilised in Figures 1 and 2 above ("standard product grouping").

Table 3.2
European Union exports

Impact of the EU-MX FTA: number of times the flow increased[1]	Number countries in the panel	R^2	Sector	Description
103.7 ***	27	0.372	26	Ores, slag and ash.
27.4 ***	62	0.453	27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.
5.0 ***	29	0.080	67	Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair.
5.0 ***	37	0.167	36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.
4.9 ***	33	0.334	10	Cereals.
4.8 ***	58	0.208	71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal and articles thereof; imitation jewellery; coin.
4.4 ***	34	0.100	66	Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof.
4.3 ***	60	0.286	64	Footwear, gaiters and the like; parts of such articles.
3.9 ***	52	0.199	88	Aircraft, spacecraft, and parts thereof.
3.4 ***	60	0.241	63	Other made up textile articles; sets; worn clothing and worn textile articles; rags.

Source: BBVA Research.
[1]*** p<0.01, ** p<0.05, * p<0.1

As may be observed, Mexico increased its exports of transport equipment, one of the product groups in which it had maintained a revealed comparative advantage in recent years, following the entry into force of the EU-MX FTA. Meanwhile, the EU increased its exports in three of the groups in which it had maintained a revealed comparative advantage, those of chemicals and similar products, stone and glass, and transport equipment. Moreover, the results point to increased export flows in certain product groups which are not currently relevant in terms of comparative advantage, but which could become so in the future as a result of the trade opportunities offered by the EU-MX FTA.

3.5 Evaluation of the impact of European FDI on Mexican exports of manufactured goods

Open trade not only has an impact on the flow of goods and services between the parties' economies, but also on the flow of FDI between them. Trade agreements normally generate incentives for foreign companies to establish a commercial or manufacturing presence in the member state or states, in order to benefit from the tariff advantages provided by the rules of origin. In the case of Mexico, firms may benefit from the tariff cuts applicable under all free trade agreements signed by the country, even if products manufactured domestically include materials not originated in Mexico, provided that such materials are sufficiently transformed on Mexican territory. Mexico is currently party of free trade agreements signed with 45 countries worldwide (Secretaría de Economía 2014), including the North American Free Trade Agreement (NAFTA), which comprises the USA and Canada. This has positioned the country as a preferential point of access to a potential market of one billion consumers making up 60% of world GDP (PROMÉXICO 2014). The German automotive firm Audi recently began the construction of a production plant in Puebla, Mexico, with a cost of USD1.3bn. The scale of Mexico's

trade relations finally tipped the balance in favour of the country, along with its competitive wages and improvements in logistics, according to Chief Executive Rupert Stadler, who remarked that “Mexico had more than 40 different free trade agreements” in an interview with the Wall Street Journal (2015). Likewise, in july 2014 BMW announced the construction of a production plant in San Luis Potosi, Mexico, to achieve the manufacturing of 150,000 vehicles annually. To this respect, BMW published: “Mexico´s large number of international free trade agreements…was a decisive factor in the choice of location” (WSJ 2015). The benefits from producing and exporting from a country with a wide trade opening might be high: when BMW exports vehicles to Europe from USA, pays a tariff of 10% on each car. For a $50,000 (USD) vehicle, the tariff rate has a significant impact on exporting costs (WSJ 2015).

This section presents an estimate of the relationship between European FDI in Mexico and total Mexican exports of manufactured goods. To this end, we performed various statistical tests to determine the most appropriate econometric model. To begin, the Johansen cointegration test (1991) was applied to the five time series used in the analysis, comprising total Mexican exports of manufactured goods, US and EU foreign direct investment, US manufacturing output and the real effective exchange rate.[18] We applied the test proposed by Lütkepohl et al. (2004) to address the possibility of structural change in one or more of the series (which could lead to erroneous acceptance of the hypothesis of cointegration between series).

The results of these tests are shown in tables 3.3 and 3.4. Interpretation of the results suggests that the null hypothesis of no cointegration (r = 0) can be rejected, and even the existence of at least two cointegrating vectors with a significance level of 5%. In this light, we proceeded to use the vector error correction model (VECM) proposed by Engle and Granger (1987).

Table 3.3
Johansen* cointegration test

Number of cointegrating vectors	t-statistic	Critical values 10%	5%	1%
r ≤ 4	4.4	10.5	12.3	16.3
r ≤ 3	15.7	22.8	25.3	30.5
r ≤ 2	50.8	39.1	42.4	48.5
r ≤ 1	93.3	59.1	63.0	70.1
r = 0	143.2	83.2	87.3	96.6

* Trace test and linear trend in cointegration.
Source: BBVA Research based on data published by INEGI, BIS, SE and the Federal Reserve

Table 3.4
Adjusted Johansen* cointegration test

Number of cointegrating vectors	t-statistic	Critical values 10%	5%	1%
r ≤ 4	5.8	5.4	6.8	10.0
r ≤ 3	16.0	13.8	15.8	19.9
r ≤ 2	34.8	25.9	28.5	33.8
r ≤ 1	58.8	42.1	45.2	51.6
r = 0	85.8	61.9	65.7	73.1

* Trace test and linear trend in cointegration
Source: BBVA Research with data from INEGI, BIS, SE and Federal Reserve

The results obtained from the estimation of the vector error correction model are shown in Annex D. In the first place, we may observe that foreign direct investment from both the European Union and the United States is positively and significantly related with Mexico’s total manufacturing exports over the long run. Meanwhile, the real effective exchange rate is negatively and significantly associated with total Mexican manufacturing exports,

18: When two or more series are cointegrated, we may affirm that a long-term relationship exists between them.

and US manufacturing output has a positive and significant impact but only in the short run.[19] Based on the long-run relationship obtained, and holding the rest of the variables constant, an increase of USD1mn from the European Union increases total Mexican manufacturing exports by around USD679,000. The equivalent figure in terms of the impact of US FDI is USD1,465,000. These differences are probably due, among other reasons, to differences in the export vocation of manufactured goods between European and American FDI.

19: Downward movements in the real effective interest rate indicate depreciation, while upward shifts indicate appreciation.

4 Subsequent benefits of expansion of the EU-MX FTA: European and Mexican perspectives

4.1 Brief description of the strengths of Mexico today compared to the Mexico which signed the original EU-MX FTA

4.1.1 Review of total factor productivity

Total factor productivity (TFP) is a key variable for a country's economic growth, because it reflects the efficiency with which the production system utilises the available inputs. Estimates at the industry level are enormously helpful to our understanding of the patterns of trade between different countries and the potential benefits of including new products in free trade agreements, because they throw light on the comparative advantages enjoyed by partner nations.

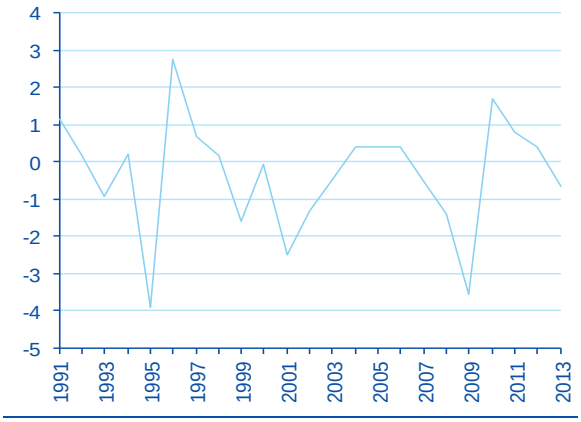
Official figures for total factor productivity were published for the first time in Mexico in August 2013. According to these data, Mexico reported -0.06% growth in TFP in 2000, after chalking up 2.76% growth in 1996 driven by increasing integration with the USA and Canada and the consequential rise in exports.[20] Total factor productivity displayed a more dynamic trend in 2002-06, recovering to the levels of average annual growth seen between 1997 and 1998 (0.41% in 2004, 0.40% in 2005 and 0.41% in 2006). The annual percentage variation in TFP began to decline after 2007, however, in response to the first signs of world recession. Though 2009 saw the steepest fall in annual TFP growth (-3.56%), the indicator had already recovered by 2010, displaying an annual percentage change of 1.71%. The average growth rate for 2011-13 was 0.19%. Figure 4.1 shows the development of average annual TFP growth in Mexico between 1991 and 2013.

In 2010, Mexico's TFP was higher than that of countries such as China, Brazil, India, South Africa, Chile, Peru and Colombia, taking US productivity at current prices for each year as the base level (USA = 1). Figure 4.2 shows the trend in TFP for each of these economies.

In 2011, Saliola and Seker estimated industry TFP levels in different countries belonging to various regions of the world, including Mexico. Their calculations are important because they use the World Bank Enterprise Survey as their information source, which is based on a standard sample design, questionnaire and procedure in all of the countries where it has been carried out, guaranteeing that data are comparable between economies. Another key feature of Saliola and Seker's estimates (2011) is their use of company-level data, throwing light on the details of the distribution of productivity levels for firms of different sizes[21]. While the study only covers manufacturing firms, it provides a wealth of information on the comparative advantages of the nations analysed.

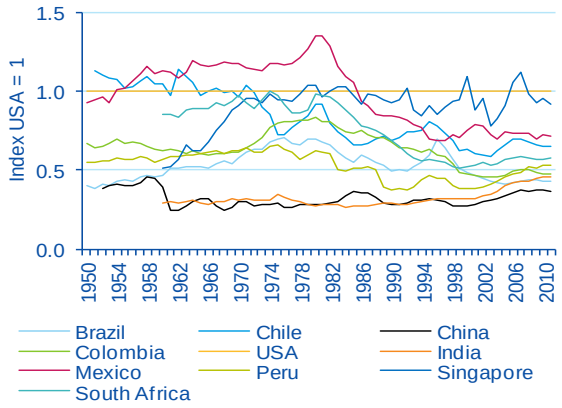
20: For further details of the productivity gains made in manufacturing industry after NAFTA, see "NAFTA and manufacturing productivity in Mexico" (López-Córdova 2003).
21: For further details, see "Total Factor Productivity Across the Developing World" (Saliola & Seker 2011).

Figure 4.1
Total factor productivity – Mexico Annual growth rate (%)



Source: BBVA Research based on INEGI data

Figure 4.2
Total factor productivity – Various countries Purchasing power parity – US current prices



Source: BBVA Research based on data published by the Federal Reserve Bank of Saint Louis, USA

In 2006 Mexico reported the second highest level of aggregate TFP of all the Latin American nations included in the sample (manufacturing firms), behind only Peru and above Chile (Saliola & Seker 2011). Aggregate TFP represents the average TFP of Mexican firms weighted by its share in total output. Table 4.1 shows the countries with the highest and lowest TFP in the sample classified by region.

Table 4.1
Countries with the highest and lowest levels of productivity

Eastern Europe and Central Asia 2008/09		Latin America and the Caribbean 2006		Sub-Saharan Africa 2006/07		Eastern Europe and Central Asia 2008/09		Latin America and the Caribbean 2006		Sub-Saharan Africa 2006/07	
Mean 0.18		Mean 0.01		Mean -0.02		Mean 0.03		Mean 0.03		Mean 0.02	
High values of aggregate TFP						High values of average TFP					
Hungary	1.50	Peru	0.32	Ethiopia	0.24	Moldova	0.07	Nicaragua	0.05	Ethiopia	0.04
Romania	1.16	Mexico	0.28	Botswana	0.23	Kyrgyz Rep.	0.06	Honduras	0.05	Zambia	0.04
Uzbekistan	0.64	Chile	0.11	Mali	0.12	Serbia	0.06	Panama	0.04	Namibia	0.04
Kyrgyz Rep.	0.50	Panama	0.11	Ruanda	0.11	Kazakhstan	0.06	Guatemala	0.04	Swaziland	0.03
Georgia	0.31	El Salvador	0.10	Ghana	0.05	Macedonia	0.05	Paraguay	0.03	Burundi	0.03
Low values of aggregate TFP						Low values of average TFP					
Bulgaria	-0.09	Ecuador	-0.13	Tanzania	-0.12	Latvia	0.02	Bolivia	0.02	Rwanda	0.01
Belarus	-0.10	Colombia	-0.15	South Africa	-0.14	Azerbaijan	0.02	Colombia	0.02	Angola	0.01
Latvia	-0.11	Uruguay	-0.19	Senegal	-0.16	Croatia	0.02	Chile	0.02	Mali	0.01
Slovak Rep.	-0.19	Guatemala	-0.19	Swaziland	-0.19	Romania	0.01	Argentina	0.01	Mauritania	0.01
Serbia	-0.27	Honduras	-0.34	Zambia	-0.24	Hungary	0.01	Peru	0.01	Ghana	0.01

Source: Saliola & Seker (2011)

In addition to the estimation for the manufacturing industry as a whole, Seliola and Seker (2011) also estimated productivity in three specific industries: food, garments and chemicals. In 2006, Mexico performed relatively well in the garments and chemicals industries. Mexican firms reported the third-highest level of aggregate TFP in the garments industry and the second-highest average TFP in the chemicals industry. In contrast to aggregate TFP, average TFP represents simple mean TFP in the firms in question. Table 4.2 shows the countries with the highest and lowest TFP in the sample classified by industry.

Table 4.2
High and low productivity levels of countries in 2006-2007 in the food, garments and chemicals industries

Food	Garments	Chemicals	Food	Garments	Chemicals
High values of aggregate TFP			High values of average TFP		
Chile	0.44 Bolivia	0.32 Peru	0.31 Nicaragua	0.08 Peru	0.05 Morocco 0.04
Malaysia	0.24 Guatemala	0.26 South Africa	0.21 El Salvador	0.05 El Salvador	0.04 Mexico 0.03
Kenya	0.23 Mexico	0.09 Ecuador	-0.12 Pakistan	0.05 Zambia	0.04 Chile 0.03
Low values of aggregate TFP			Low values of average TFP		
Tanzania	-0.35 Tanzania	-0.37 Mexico	-0.16 Mali	0.01 Nigeria	0.01 Malaysia 0.02
Uruguay	-0.37 El Salvador	-0.38 Morocco	-0.26 Ghana	0.01 Mali	0.01 South Africa 0.02
Honduras	-0.51 Peru	-0.42 Chile	-0.22 Malaysia	0.01 Ghana	0.01 Peru 0.01

Source: Saliola y Seker (2011)

4.1.2 Recent structural reforms and macroeconomic environment

In 2013, Mexico adopted a raft of structural reforms that, as a whole, should help to increase total factor productivity and, hence, increase the country's percentage growth rate. At BBVA Research, we estimate the reforms can increase potential growth by an additional 1.5 percentage points in the medium term. The reforms open sectors to competition that had been closed for decades, and they promote greater flexibility in the market and in investment in human and physical capital. The main reforms were rolled out in the energy, telecommunications, and labour sectors.

The energy reform opens this sector – oil, gas and electricity – to private investment. For over seventy years, the sector was closed to private investment. There were two state monopolies in the oil and electricity sector (Pemex and CFE), which had become highly inefficient companies. Moreover, Pemex provided the federal government with almost one-third of its tax revenues, which limited its margin for investment. The reform changed all this radically. Not only can private companies take part in the exploration for and extraction of oil and shale gas, and in producing and distributing electricity, Pemex and CFE are going to be transformed into productive state companies, which should make them more efficient. We estimate that eventually this reform could double direct foreign investment into the country and, furthermore, it will considerably reduce the energy costs currently paid by companies operating in Mexico.

The telecommunications reform brings in measures that will foster greater competition in the sector, including the tender of a third television channel, greater powers granted to the Federal Institute of Telecommunications in matters of competition in the sector, and the creation of specialised tribunals. It also completely opens the sector to foreign investment (before the reform, companies could only have foreign holdings below 49% in some branches of the sector).

Labour market reform introduces flexibility by contemplating more flexible schemes of hiring (by hour or a trial period), reducing redundancy costs, and setting up simpler forms for resolving labour conflicts.

4.2 Main beneficiary industries

This section proposes a methodology to identify those industries whose characteristics have allowed them to benefit the most from the EU-MX FTA, or which might obtain the greatest advantage from its extension in the case of the goods not covered by the original agreement. The procedure applied takes the following factors into account: i) the competitiveness of each industry in the economy (in terms of the Revealed Comparative Advantage (RCA) Index); ii) the list of the top ten industries in terms of exports of intermediate and capital goods (ICG) to the world, and iii) the results obtained from the examination of bilateral global value chains (applying a threshold of 5% to the EU's share in Mexican exports of each industry after excluding trade with the USA). Based on this methodology, all sectors of the economy (two-digit Harmonised System) were ranked on the basis of their potential to benefit.[22] Four sectors stand out: i) gold and silver, and related products; ii) machines and mechanical devices; iii) machinery and electrical equipment (including telephones, radio and television), and iv) control and medical precision instruments. The following table shows these sectors together with the others selected.

Table 4.3
Sectors of the Mexican economy potentially benefitting the most from the EU-MX FTA

Sector	Competitiveness	10 main exporting sectors	GVC with the EU	Total p
Gold, silver and its manufactures	1	1	1	3
Machines and mechanical artefacts	1	1	1	3
Machinery and electrical material, telephony, radio, tv, etc.	1	1	1	3
Control and medical precision instruments	1	1	1	3
Vegetables, plants and roots	1	0	1	2
Sugar and candies	1	0	1	2
Zinc and its manufactures	1	0	1	2
Organic chemical products	0	1	1	2
Plastic and its manufactures	0	1	1	2
Iron and steel items	0	1	1	2
Vehicles and autoparts	1	1	0	2
Furniture, prefabricated constructions, lamps, etc.	1	1	0	2

Source: BBVA Research based on WITS data

As Table 4.3 shows, the sectors with the potential to benefit significantly include fruit and vegetables, plants, root vegetables and tubers, and sugars and sweets. This finding is relevant considering that some of the goods initially excluded from the EU-MX FTA belong to these categories, including asparagus, sweet maize, potatoes, peas, beans, olives, mushrooms, tomatoes, artichokes, sugar, lactose and other sweeteners.[23] A number of these products were not covered by the Agreement, basically because of the subsidies paid by the EU for the production and exportation of certain farm products (Common Agricultural Policy). However, EU-MX FTA allowed room for negotiation of the possibility of case-by-case discussion of the liberalisation of these goods, and of all those initially included in categories 5 and 6 (the former grouping goods that were not covered by the

22: For further details of this methodology, see Annex C to this report.
23: For further details about EU imports from Mexico excluded from the Agreement, see Annex A to this report.

Agreement, and the latter goods for which quotas benefitting from preferential tariff treatment were established) (Article 10 of Decision 2/2000 of the European Union-Mexico Joint Council). The results presented in Table 4.3 show that the Mexican products that might benefit from an extension of trade liberalisation with the EU are precisely those which were left out of the original Agreement or were made subject to import quotas (see Table 4.4). Hence, farm, fisheries and agro-industry negotiations offer the possibility of improvements for both economies, by allowing them to exploit their comparative advantages, increasing in this way total efficiency and benefiting European consumers with lower-priced products.

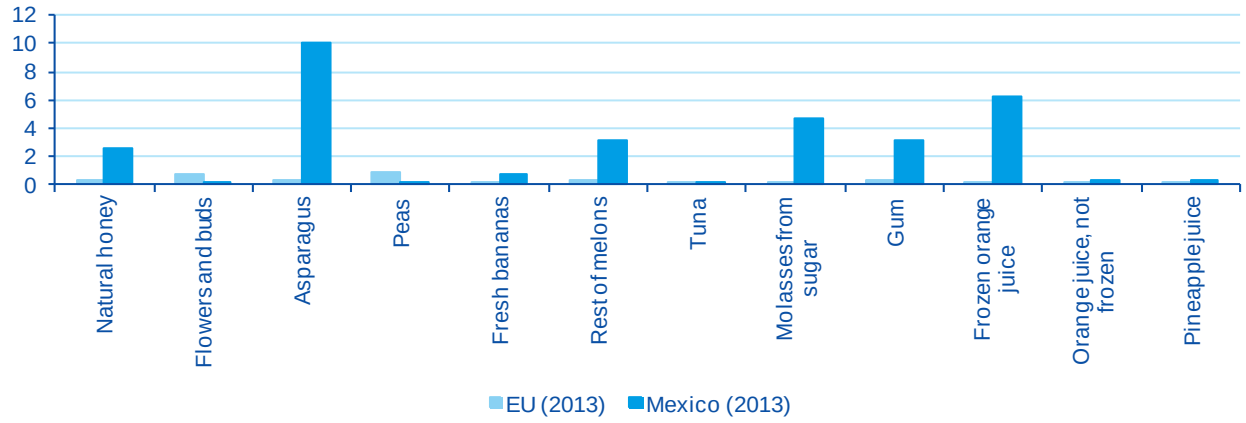
Table 4.4
Existing EU quotas for Mexican goods

	Total of the quota	Unit
Food and drinks		
Processed tuna except loins	8,000,000	KG
Bananas, fresh (excluding plantains)	2,000,000	KG
Frozen peas (peas, peas) (pisum sativum)	500,000	KG
Gum	1,000,000	KG
Fresh or chilled asparagus	600,000	KG
Asparagus prepared or preserved other than by vinegar or acetic acid	1,000,000	KG
Bird fertile egg pathogen free (SPF)	300,000	KG
Shelled egg (dry, liquid or frozen) and egg (dried, liquid or frozen), fit for human consumption	1,000,000	KG
Orange juice frozen concentrate grade higher concentration to 20 ° Brix (with a density exceeding 1,083 g / cm3 at 20 ° C)	30,000,000	KG
Orange juice, frozen concentrate except	1,000,000	KG
Pineapple juice, unfermented and not containing added spirit with greater degree of concentration at 20 ° brix	2,500,000	KG
Other Frozen strawberries containing no added sugar or other sweeteners	1,000,000	KG
Tuna loins originating in the United Mexican States	11,000,000	KG
Other melons	1,000,000	KG
Molasses	275,000,000	KG
Mixtures of certain fruit prepared or preserved, not containing added sugar or other sweetening	1,500,000	KG
Natural honey	30,000,000	KG
Ovoalbúmina apta para consumo humano	3,000,000	KG
Flowers, spices, ornamental plants and medicinal plants		
The lilies and other flowers (In the months from July to October and June of the following year)	400,000	KG
The lilies and other flowers (in the months of November of one year to May of the following year)	400,000	KG
Roses, carnations, orchids, gladioli and chrysanthemums (In the months from July to October and June of the following y	350,000	KG
Roses, carnations, orchids, gladioli and chrysanthemums (in the months of November of one year to May of the following	350,000	KG

Source: BBVA Research based on data published by the Mexican Department of the Economy

The first criterion on which we may base an assessment of the benefits of extending the EU-MX FTA to categories 5 and 6 is the Revealed Comparative Advantage Index. Extension of the free trade agreement between the European Union and Mexico could eliminate the import quotas on goods in which either Mexico or the EU enjoys a revealed comparative advantage greater than one and the trade partner is at a disadvantage (index score of less than one). Using 2013 data from the four-digit Harmonised System 2002, we found that Mexico enjoys a revealed comparative advantage (while the EU does not) in some of the products affected by import quotas, like natural honey, asparagus, melons, molasses, chewing gum and frozen orange juice (see figure 4.3). In the case of fresh bananas, meanwhile, the elimination of import quotas by the EU would also benefit both parties, given Mexico's comparative advantage over the EU.

Figure 4.3
Revealed comparative advantage of Mexico and the European Union in selected agricultural products in 2013



Source: BBVA Research based on WITS data

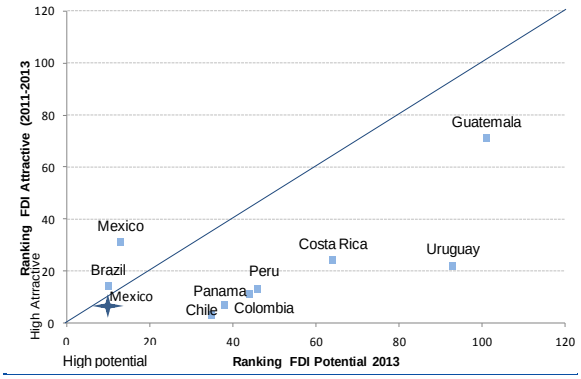
5 FDI opportunities offered by Mexico

In order to measure Mexico's capacity to absorb FDI compared to other Latin American nations (attractiveness ranking), FDI is considered in absolute terms (billions of USD) and in relation to the size of the economy (% of GDP) in 2011-13 (for further details on this methodology, see dos Santos et al. (2014), which estimates the attractiveness of 120 countries). Mexico is 31st in this ranking, behind Chile (3rd), Colombia (11th), Peru (13th) and Brazil (14th). The most attractive sectors for FDI in Mexico were manufacturing industry, accounting for 55.6% of the total, which is dominated by investment in the automotive and auto part industry, food, chemicals and services (30% of the total).

The key four determining factors in terms of the potential to attract FDI (potential ranking) are: i) the size of the internal market; ii) the availability and cost of labour; iii) natural resources, and iv) adequate infrastructure (for further details see dos Santos et al. (2014)). Mexico is placed 13th out of 120 in this ranking, while Chile, Colombia and Peru all display less potential given their lack of skilled labour and poor infrastructure.

Comparing the attractiveness and potential rankings, we may observe that Mexico attracts FDI below its potential (see figure 5.1). This situation should be reversed in the future, given the opportunities arising from the reforms of the telecommunications and energy industry (oil, gas and electricity), which should propel Mexico from 31st place to 7th in the attractiveness ranking (above the 13th place it currently holds in the potential ranking).

Figure 5.1
FDI attractiveness and potential, Mexico vs. selected Latin America nations



Source: BBVA Research, Methodological note in dos Santos et al. (2014)

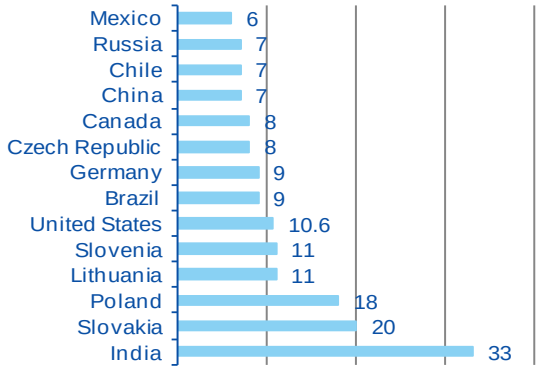
Table 5.1
FDI attractiveness and potential rankings

Country	Attraction of FDI ranking (120 countries)	Country	FDI potential ranking (120 countries)
Ireland	1	USA	1
Chile	3	China	2
Combia	11	Brazil	10
Peru	13	Mexico	13
Brazil	14	Chile	35
Mexico	31	Colombia	44
China	47	Peru	46
USA	50	Ireland	50

Source: BBVA Research, Methodological note in dos Santos et al. (2014)

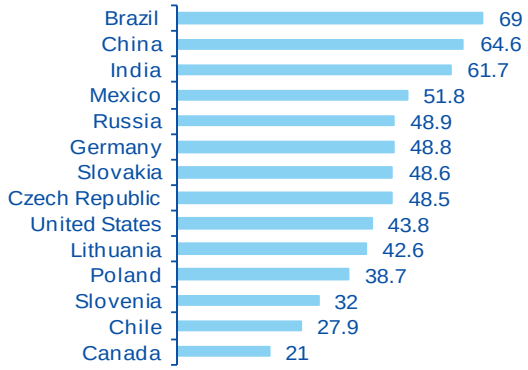
Taxes are one of the key factors affecting operating costs and, therefore, the returns obtained by firms established in Mexico. According to data published by the World Economic Forum, Mexico is competitive in terms of corporate taxes (ahead of Brazil, China and India), requiring only six tax payments each year, which places it in a strong position with respect to other developing nations. Figures 5.2 and 5.3 show the number of times taxes must be paid in any given year, and the overall tax rate in Mexico and other countries, respectively. As shown in these charts, Mexico not only does have strengths in terms of access to consumer markets provided by its free trade agreements, but also offers advantages in terms of corporate taxes and, therefore, operating costs.

Figure 5.2
Number of tax payments, 2015



Source: BBVA Research based on WEF data

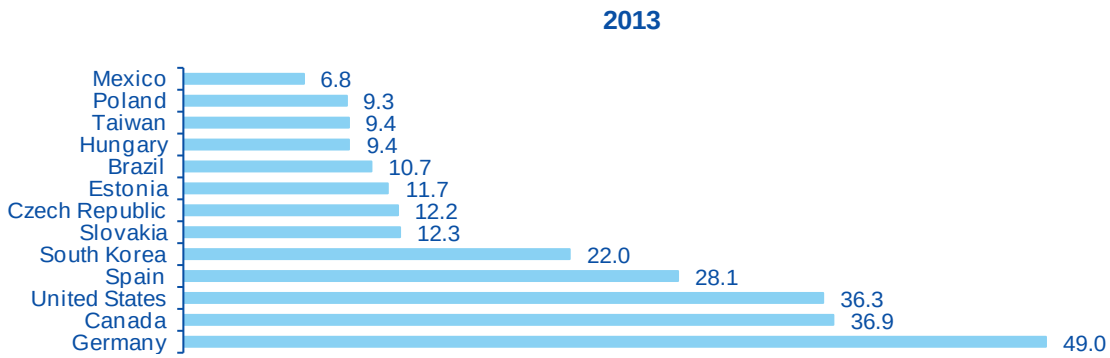
Figure 5.3
Total tax rate (% of earnings)



Source: BBVA Research based on WEF data

In terms of labour costs, Mexico is better placed than other destinations for foreign direct investment (see figure 5.4). Relocation of US investment to Mexico could generate savings of up to 90% in labour costs.

Figure 5.4
Labour costs in manufacturing industry (USD/hour)



Source: BBVA Research based on Conference Board data

A further advantage of Mexico is its proximity to the world's largest consumer market. The Mexican Republic shares a 3,000 kilometer border with the United States, and it also enjoys easy access to the European market across the Atlantic Ocean and to the Asian market via the Pacific. Shorter distances imply savings on the inventory required both in transit and warehouses, as well as enhancing capacity to respond to changes in market conditions.

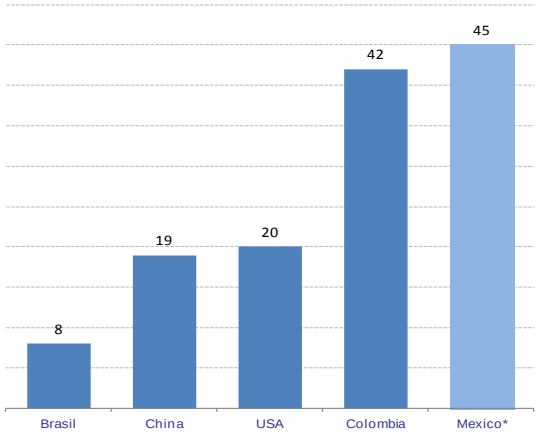
Table 5.2
Days' sailing to key distribution points and consumer markets

Cities destination	Country of origin									
	Germany	Brazil	China	Colombia	Korea	USA	India	Mexico	Poland	Turkey
New York	9.8	13.1	28.7	6.5	14.6	NA	26.4	5.4	10.5	3.7
Los Angeles	22.2	19.9	15.9	8.4	27.7	NA	25.8	3.7	23.1	25.2
Rotterdam	0.8	14.5	28.9	14.4	29.9	9.8	21.9	14.0	1.7	8.7
Yokohama	31.7	31.9	2.8	21.5	2.3	13.4	12.6	16.9	32.6	24.1
Shanghai	29.6	30.1	NA	23.5	1.3	15.9	10.5	19.4	30.5	22.1

Source: BBVA Research based on data published by Sea Rates, 2013

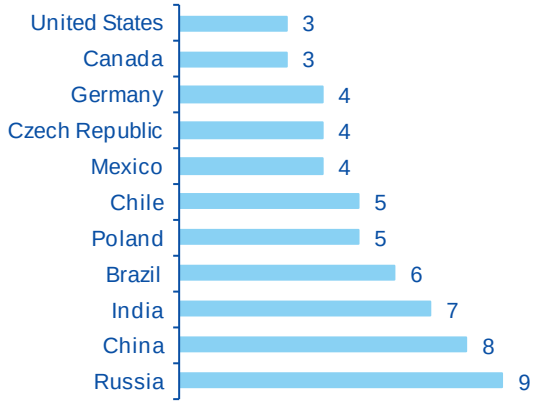
As mentioned in the preceding sections, the ease of doing business with the rest of the world is a key factor in firms' decisions to locate in a given country. In this regard, Mexico enjoys significant advantages both in its free trade agreements and in the low complexity of the export procedures required. Mexico has made free trade agreements with 45 nations, positioning the country as one of the most open to international trade in the world. Meanwhile, the country's export procedures require only four documents to complete the process. This gives it an advantage over nations like Brazil, India and China, which require significantly more documents and processes. Figure 5.5 shows the number of countries with which Brazil, China, the USA, Colombia and Mexico have made free trade agreements. Figure 5.6 shows the number of documents required to complete the export process for a selection of eleven countries including Mexico.

Figure 5.5
Free trade agreements (number of countries)



* Includes Economic Association Agreement with Japan
Source: BBVA Research based on SE, OAS and WTO data for 2014

Figure 5.6
Number of documents required in the export process



Source: BBVA Research based on Doing Business 2015

5.1 Infrastructure

According to the World Economic Forum (WEF), Mexico ranks 65th out of 144 in the Infrastructure Sub-Index (2014-2015), ahead of Brazil and India (respectively ranked 76th and 87th). The Infrastructure Sub-Index is a component of the Global Competitiveness Index, and it reflects the availability and quality of transport, power and telecommunications infrastructure (roads, railways, ports, airports, electricity and mobile/fixed telephone grid) (WEF 2014). Meanwhile, the World Bank Logistics Performance Index ranks Mexico 50th out of 160, once again above both India and Brazil (respectively ranked 54th and 65th). A country's Logistics Performance Index reflects the efficiency of its customs processes, the quality of trade and transport infrastructure, the competitiveness of shipping prices, the quality of logistics services and the capacity to follow and trace shipments (World Bank 2015).

The value of (public and private) transport and development construction has increased in recent years, resulting in average real annual growth of 3.0% in 2014 (compared to -7.6% reported in 2013 and -2.8% in 2012). This indicator is expected to gain ground in the coming years, in line with execution of the National Infrastructure Programme 2014-18 (NIP). The NIP provides for an investment of MXN7.7trn (MXN2.8trn provided by the private sector), covering numerous sectors including communications and transport, energy, hydraulics, health, tourism, urban development and housing.

One of the largest telecommunications projects included in the NIP consists of the creation of a shared mobile services network involving an estimated investment of MXN130bn over the next ten years. The construction of this network is a consequence of the Constitutional Reform enacted with regard to telecommunications in June 2013, dealt with in detail in chapter 4.1.2 of this document. The new network will enormously improve cover and wireless access to broadband services for Mexican population.

Other major telecommunications infrastructure projects comprised in the NIP include extension of the fibre optic trunk network and the Mexsat satellite system, involving estimated investments of MXN9.75bn and MXN8.28bn. Expansion of the core network will strengthen and extend broadband internet coverage as a result of the roll-out of a fibre optic grid over the grid laid by the Federal Electricity Commission (NIP 2014). Once again, this initiative is part of the Constitutional Reform in Telecommunications. Meanwhile, the Mexsat satellite system will provide fixed and mobile satellite communications nationwide as a result of the deployment of three high-capacity satellites (NIP 2014).

The NIP also provides for road building and improvement, as well as the modernisation of ports, which will reduce transport times and warehousing costs, improve safety and boost economic and social development (NIP 2014). Projects in the pipeline include expansion of the port of Veracruz in the Northern Region, for an estimated total investment of MXN60bn, and expansion of the port of Altamira at an estimated cost of MXN10.7bn. The planned improvements will allow more ships to dock and speed up the turnover of goods.

The planned improvements to overland transport infrastructure in the NIP include construction of 188.1 kilometers of track on the Aguascalientes-Guadalajara line as part of the Manzanillo-Tampico and Manzanillo-Nuevo Laredo rail corridors, providing a key link in the movement of freight between the Gulf of Mexico and the Pacific Ocean, as well as to the US. This will cut costs and allow more competitive transport times. The estimated investment in this project is around MXN11.59bn, and completion is scheduled for 2017. It is also planned to invest MXN9.18bn to build a highway from Oaxaca to Istmo, creating a link with the interior of the State of Oaxaca and facilitating access to the port of Salina Cruz.

In terms of air transport, the 2014-18 NIP provides for the extension and modernisation of various Mexican airports for a total investment of MXN1.740bn. The airports earmarked for improvement include Lázaro Cárdenas, Palenque, Monterrey, Tijuana, Puerto Vallarta, Bajío-Guanajuato, Chihuahua, Hermosillo, Culiacán, Mazatlán, Toluca, San José del Cabo, San Luis Potosí and Mérida.[24]

Plans for a new Mexico City Airport do not form part of the NIP, but a total of MXN169bn has been earmarked for the project including private investment of MXN71bn. The new airport will have the capacity to handle some 50 million passengers and 550,000 flights per year in its first phase, with the potential for expansion in the coming years to 120 million passengers and up to one million flights annually.

Investment in infrastructure is a priority strategic issue for Mexico, because of its effects on the movement of goods, people and information, and in this regard it is fundamental to improving competitiveness. The new investments mentioned will create further opportunities for investors in Mexico and pave the way for exporters.

5.2 Opportunities in the energy sector since the reform

The recent constitutional reform in energy matters represents a unique opportunity for companies working in activities associated with oil production and electricity generation to enter into the sector and set up operations in Mexico. Although the reform was promulgated in December 2013 and its secondary laws were enacted in August 2014, its impact depends to a large extent on the arrival of private investment in the energy sector, in particular the exploration and the commercial development of hydrocarbon projects will have to be implemented with non-conventional resources, and in deep waters.

Other, more immediate benefits of the energy reform could come from restructuring the electricity market. First, a wholesale electricity market, programmed to come on line in December 2015, will lay the foundations for achieving greater operating efficiency and lower electricity production costs by increasing competition between generating companies. Second, faced with the target of generating 35%, 40% and 50% of all electricity with non-fossil inputs by 2024, 2035 and 2050 respectively, a transparent and impartial process of interconnection together with appropriate regulation for clean energy certificates, could mean a historic opportunity for underpinning foreign direct investment to an even greater extent in wind farms for generating electricity.

With data from the Energy Regulation Commission dated at January 31, 2015, independent energy producers (PIEs, as they are known in Mexico) have been authorised to generate electricity with wind power with a total capacity of 612.9 MW. The investment in this capacity is USD1.2257bn, which accounts for 8% of the total investment made by PIEs. The energy reform considers the reduction of the environmental impact of electricity generation, and in this sense provides greater opportunities to increase the share of projects of this kind in total private investment.

5.3 Competitiveness vs. China

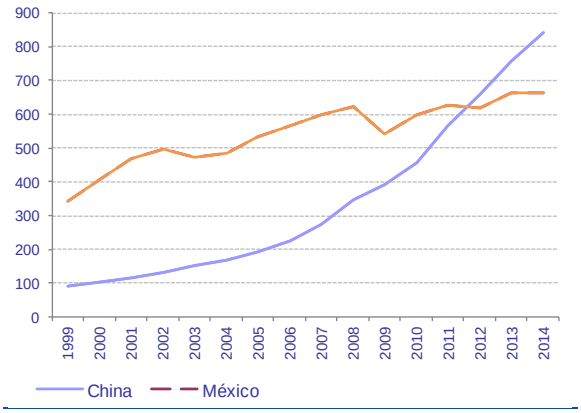
Labour costs in Mexico nowadays are 20% lower than in China (the industrial manufacturing giant), which represents a competitive edge for the export industry that could last a decade due to the growth in the working-age population in Mexico. China, on the other hand, is experiencing a fall in its working-age population and in recent years has seen a significant increase in wages in the manufacturing sector. In Mexico, wages have grown relatively little, especially after the Great Recession (see figure 5.7).

24: For further details of the projects included in the 2014-2018 NIP, see “Programa Nacional de Infraestructura 2014-2018” (2014).

Qualified workers, on the other hand, are providing an increasingly attractive context for high-tech enterprises: in recent years, Mexico has become a world leader in the production of computers and mobile phones, and in recent decades car manufacturers have benefitted from the capacity of Mexican engineers for designing parts.

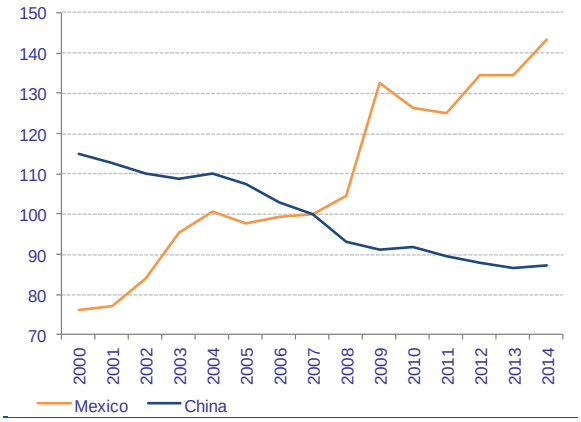
Apart from low labour costs and a greater supply of human capital, Mexico offers advantages for foreign exporters and investors as it has a competitive exchange rate. In 2000-14 the yuan appreciated 24% in real terms against the USD, while the Mexican peso depreciated 90% in real terms in the same period (see figure 5.8).

Figure 5.7
Manufacturing wages Mexico vs. China (Dollars per Month)



Source: BBVA Research with data from Haver and IMSS. Wages in China in 2014 were estimated, based on the increase observed in 2013

Figure 5.8
Real exchange rate against USD (Index 2007=100)



Source: BBVA Research with data from Haver

5.4 Global Value Chains

The proximity of Mexico to US means proximity to one of the largest markets in the world. Many firms, especially in the automotive industry, have levered this attribute and have started, or increased, their investments in Mexico, in order to set up plants there. Between 2013 and 2015 alone, seven automobile manufacturers from Asia and Europe built plants (or revealed plans to do so) somewhere in Mexico. In June 2014, Nissan and Daimler, for example, announced the construction of a USD1.4bn plant in the state of Aguascalientes, Mexico, to produce small cars. In March 2015, German manufacturer Volkswagen (VW) revealed its plans to invest USD1bn in expanding its plant in Mexico, in order to produce SUVs and export them to US and other overseas markets. At the end of 2013, Nissan completed the expansion of its plant in Mexico, costing USD2bn, and Audi is currently building a plant in the state of Puebla, at a cost of USD1.3bn. Other car manufacturers have funded significant expansions in Mexico, including General Motors Co., Ford Motor Co., and Fiat Chrysler Automobiles NV (WSJ 2015).

According to the Mexican authorities, car companies and their suppliers have spent over USD20bn on new investments (WSJ 2015). These investment flows have turned Mexico into the seventh largest car manufacturer in the world (ahead of Brazil) and the fourth largest exporter of cars, only surpassed by Germany, Japan and South Korea. Furthermore, Mexico has surpassed Japan, to become the second largest supplier of vehicles to

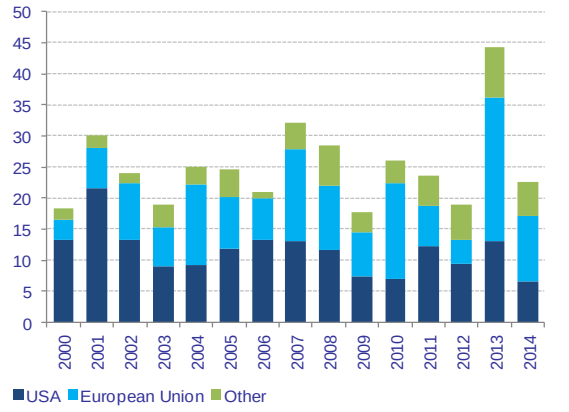
the US market. Analysts of this market expect the annual production of the Mexican car industry (currently 3.2 million) to grow by more than 50% to around 5 million cars by 2018 (WSJ 2015).

The trend of the car industry in Mexico reflects the enormous potential that the country has for global value chains. The Audi plant under construction in Puebla, for instance, will export vehicles not only to the US but also to Europe and the rest of the world. Although the plant is located in the centre of the country, it is only half a day from the port of Veracruz on the Gulf of Mexico (by train or truck) and the factories of its suppliers are only an hour away by car (WSJ 2015). The car industry is the most tangible example of the strengthening of the local production processes, which add more value to production lines every day, as a result of greater integration and share of first- and second-tier domestic suppliers in the process.

5.5 European FDI in Mexico is the largest after US

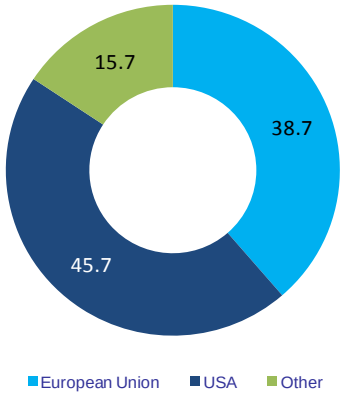
The EU-MX FTA besides having a positive impact on trade between the two regions, has acted as a catalyst for investment flows. Although the principal foreign investor in Mexico is the US, representing 45.7% of total FDI in the past 15 years, the EU remains close on its heels with around 38.7%. In fact in several states FDI from the EU is number one. Note that EU FDI was the leader in 2004 (with 52%), 2007 (46%), 2010 (59%), 2013 (51%) and 2014 (58%). The most important European countries investing in Mexico are: Netherlands (13.3%), Spain (12.8%), Belgium (4.4%), the UK (2.6%) and Germany (2.3%).

Figure 5.9
FDI in Mexico by origin (annual flows USD bn)



Source: BBVA Research from UNCTAD data

Figure 5.10
Accumulated FDI (2000-14) in Mexico by origin (% of total)



Source: BBVA Research from UNCTAD data

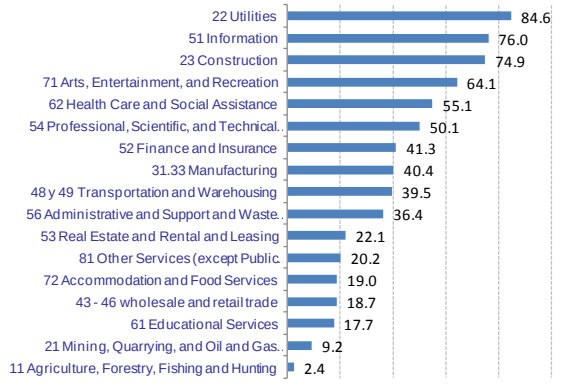
The accumulated flow of FDI from the EU in Mexico in 2000-14 reached USD 145.3bn, 47.3% of which went to the manufacturing sector (including the food and beverage industry, chemicals, cars and aerospace), 18.5% to financial services, 8% to mass media and 6.3% to construction. Although foreign investment from Europe is found in all sectors of the Mexican economy, it makes a major contribution in at least six sectors of the economy: i) generation, transmission and distribution of wind power and natural gas (82.6%); ii) mass media (76%); iii) construction (73%); iv) leisure services (64%); v) health services (52.8%), and vi) professional and scientific services (50.8%).

Table 5.3
Accumulated FDI in Mexico from the European Union by sector, 2000-14

	USD bn	% Share	% Share accum.
31.33 Manufacturing	69.94	47.3	47.3
52 Finance and Insurance	27.36	18.5	65.8
51 Information	11.81	8.0	73.8
23 Construction	9.36	6.3	80.2
43 - 46 wholesale and retail trade	5.80	3.9	84.1
72 Accommodation and Food Services	4.97	3.4	87.5
54 Professional, Scientific, and Technical Services	3.96	2.7	90.1
22 Utilities	3.93	2.7	92.8
53 Real Estate and Rental and Leasing	3.09	2.1	94.9
48 y 49 Transportation and Warehousing	2.33	1.6	96.5
56 Administrative and Support and Waste Management and Remedial	2.32	1.6	98.1
21 Mining, Quarrying, and Oil and Gas Extraction	2.03	1.4	99.4
71 Arts, Entertainment, and Recreation	0.48	0.3	99.7
81 Other Services (except Public Administration)	0.19	0.1	99.9
62 Health Care and Social Assistance	0.10	0.1	99.9
61 Educational Services	0.06	0.0	100.0
11 Agriculture, Forestry, Fishing and Hunting	0.02	0.0	100.0
Total	145.30	100.0	100.0

Source: BBVA Research with data from Secretaría de Economía (Ministry of Economy)

Figure 5.11
Accumulated FDI in Mexico from the European Union, 2000-14 (% of total FDI of each sector)

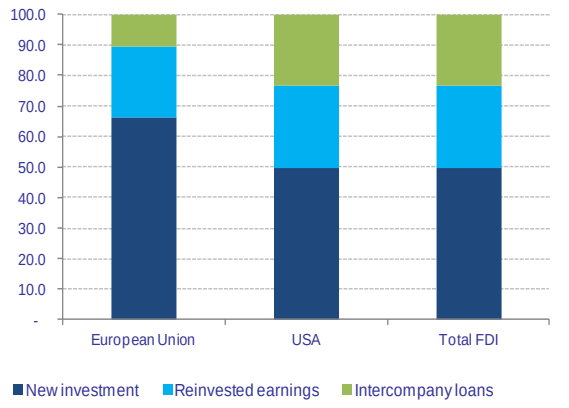


Source: BBVA Research with data from Secretaría de Economía (Ministry of Economy)

An analysis of FDI in Mexico by components shows a 10.3% share for the EU in accounts between companies[25] in 2000-14 (see figure 5.12). The US share of this line is 23.2%. As for re-invested profits, the EU has a share of 23.3%, below the 27.0% reported for the US in the same period, which could reflect the 2008-09 global economic recession. With respect to new investments from the EU, these represented an average of 66.4% of the FDI from this region in 2000-14. This is higher than the figure for the US, and higher too than the new investments recorded in total FDI in Mexico. The New Investment line has a high potential for generating new jobs, although it has been highly volatile in recent years, especially due to the weakness of economic activity in investor countries. Figure 5.13 shows the amount of new investments in Mexico as a proportion of the total, both for the US and for the EU (the base for calculating the percentage is the total FDI from the US and from the EU respectively). The fall seen in the US series in 2014 can be explained in part by the USD4.5bn divestment made by AT&T. These resources will eventually return if the acquisition of DirecTV goes through.

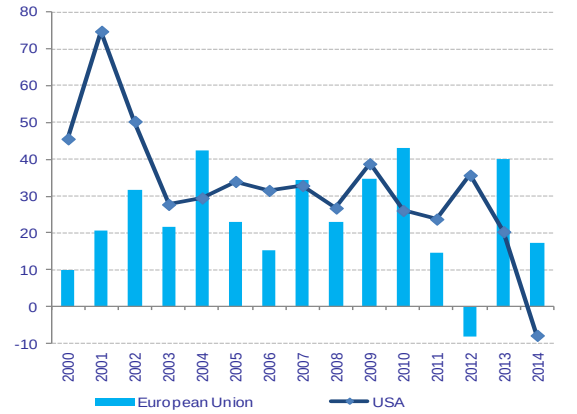
25: Line that records the operations of the maquila.

Figure 5.12
FDI in Mexico by kind of investment, 2000-14 (% structure)



Source: BBVA Research with data from Secretaría de Economía (Ministry of Economy)

Figure 5.13
FDI in Mexico "New investments", 2000-14 (% of total)



Source: BBVA Research with data from Secretaría de Economía (Ministry of Economy)

5.6 The advantages of NAFTA and the international expansion of companies

The USA is Mexico's main trading partner. The North American Free Trade Agreement (NAFTA) guarantees free access to the United States and Canadian markets for the lion's share of Mexican exports. Provided that a good is processed to a sufficient extent in Mexico (so that a certain proportion of the final product contains regional products) it can enjoy NAFTA tariff privileges.[26] EU investors can now benefit from both the EU-MX FTA and NAFTA at the same time and export their products to the US and Canada free of tariffs, or paying only a reduced amount (Farah 2004). For example, under EU-MX FTA, a parent company resident in the EU can export certain components duty free to Mexico. The Mexican subsidiary receiving the components assembles the product in Mexico, also using components native from the US, which come into Mexico without paying trade tariffs under NAFTA. The product assembled in Mexico is granted Mexican origin status and as such can be exported to the US or Canada without having to pay any duties. The only charge that the Mexican company pays is the 15% value added tax on the value of the components that have come from the EU (Farah 2004).

As mentioned in section 5.4 of this document, FDI in Mexico has enabled EU firms to gain access to global markets. The example of the automotive industry mentioned previously in this document shows how these companies have managed to enhance their efficiency, while gaining access to raw materials at competitive prices. These examples are replicated in other highly export-orientated manufacturing sectors, such as food and beverages, chemicals, iron and steel, machinery and equipment, and in the services sector, such as financial services, insurance and leasing. Table 5.4 shows the EU companies that currently operate in Mexico.

26: For greater detail of the rules on origin of NAFTA, see Chapter IV of the treaty.

Table 5.4
European Union multi-nationals in Mexico

Company	RK 500/2013	Host economy	Industry	Assets in mexico (USD Bn)[1]	Employees in Mexico	Employees global	Global Evolution 2013[2]
Weatherford de México	132	SWI	Mining, quarrying and petroleum	na	nd	70,000	25.1
Iberdrola de México	113	SPA	Electricity, gas and water	na	800	31,338	5.3
Gas Natural Fenosa México	140	SPA	Electricity, gas and water	40,558	945	15,959	19.3
OHL México	112	SPA	Construction	51,397	1,397	19,821	32.3
Grupo ACS	107	SPA	Construction	na	nd	161,865	17.6
Outokumpu Mexinox	205	FIN	Construction	5,886	1,100	16,649	-28
Syngenta Agro	91	SWI	Agroindustry	na	3,000	27,400	5.2
Danone México	122	FRA	Food, beverages and tobacco	na	15,000	102,401	-34.2
Grupo Nestlé México	49	SWI	Food, beverages and tobacco	na	6,500	339,000	8.5
Cervecería Cuauhtémoc - Heineken	42	NETH	Food, beverages and tobacco	na	17,000	76,191	8.4
Inditex México	126	SPA	**Textiles and clothing**	na	4,497	109,512	-7.4
Henkel	223	GER	Consumer and industry	na	2,430	46,610	23.1
L'Oréal	224	FRA	Personal Care	na	nd	72,637	27.4
Unilever de México	120	UK/NETH	Consumer products	na	5,790	172,000	10.9
Corporación Moctezuma	200	NETH	Non-metallic mineral products	10,769	1,173	753	4.8
Holcim Apasco	131	SWI	Non-metallic mineral products	na	3,733	78,103	12.6
Bayer de México	119	GER	Chemicals and pharmaceuticals	na	3,150	11,600	16.4
GlaxoSmithKline	233	UK	Chemicals and pharmaceuticals	na	1,600	99,488	19.6
Grupo Novartis México	225	SWI	Chemicals and pharmaceuticals	na	1,243	127,724	14.9
Basf de México	128	GER	**Chemicals and pharmaceuticals**	na	1,600	113,262	4.8
Organización Techint México	20	LUX	Holding	na	21,070	59,196	na
ArcelorMittal	76	NETH	Metals and metal products	na	5,000	246,000	-22.4
Siemens	137	GER	Electrical & electronic equipment	15,307	5,899	370,000	-2
Grupo ThyssenKrupp	152	GER	**Machinery and equipment**	na	2,500	152,123	-14.3
Volkswagen de México	10	GER	Motor vehicles	70,370	18,739	552,425	-3.5
Daimler México	108	GER/USA	Motor vehicles	28,195	5,944	275,087	16.2
Continental Tire de México	104	GER	Auto parts	na	17,000	169,639	15.9
Valeo México	148	FRA	Auto parts	na	nd	60,708	34
Autoliv México	121	SWE	Auto parts	na	10,220	41,700	16.2
Movistar	85	SPA	Telecommunications	na	2,794	133,186	7.4
Allianz México	231	GER	Insurance	13,900	390	144,094	13.2
MAPFRE	169	SPA	Insurance	15,519	1,223	34,942	20.3
AXA Seguros	78	FRA	Insurance	60,194	4,375	97,901	15.1
Grupo Financiero Santander	32	SPA	Finance	750,337	12,500	186,763	-2.3
Grupo Financiero BBVA Bancomer	13	SPA	Finance	1,383,800	39,244	115,852	7
Grupo Financiero HSBC	58	UK	Finance	504,526	17,518	260,591	12.5
Atento en Américas	178	SPA	Profesional services	na	56,735	141,130	na
Codere México	216	SPA	**Entertainment**	13,061	3,444	20,910	-52.5

Source: BBVA Research with data from Expansión: 1 Total assets, 2 YoY % shares

At the same time as EU companies have enlarged their footprint in Mexico, Mexican companies have increased their commercial footprint in the EU, particularly in Spain and Germany. Although Mexican FDI flows went mainly to Latin America and US until 2013, Mexican corporations operate increasingly globally. A high percentage of Cemex sales revenues, for instance, comes from its overseas subsidiaries (80%). In the case of Nemak (manufacturer of automobile parts), this proportion is 88%. Table 5.6 show the list of Mexican companies with a presence in the EU.

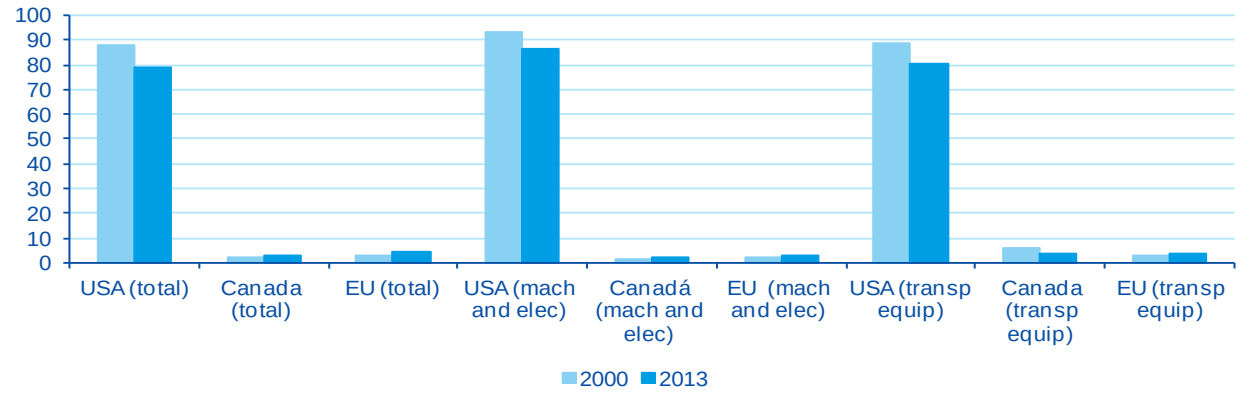
Table 5.5
Mexican multi-nationals in the European Union

RK 2015	Company	Industry	% Of sales abroad ('13)	No. Countries	European countries
2	Cemex	Non-metallic mineral products	80	35	Austria, Croatia, Spain, France, Hungary, Ireland, Lithuania, Latvia, Norway, Poland, Romania, Czech Rep.
3	Alfa	Holding	62	18	Germany, Austria, Slovenia, Spain, Hungary, Poland, Czech Rep.
4	Grupo Bimbo	Consumer goods	58	18	Spain, Portugal
5	Mexichem	Chemical and petrochemical	76	46	Germany, Austria, Belgium, Bularia, Croatia, Denmark, Estonia, Finland, France, Holland, Hungary, Ireland, Italy, Latvia, Lithuania, Norway, Poland, Romania, Czech Rep, Sweden, Switzerland
6	Fomento Económico Mexicano	Consumer goods	37	11	United Kingdom
8	Nemak	Auto parts	88	15	Germany, Austria, Slovakia, Spain, Hungary, Poland, Czech Rep.
10	Gruma	Consumer goods	61	17	Holland, Italy, United Kingdom
13	Grupo Aeroméxico	Transport, storage	51	20	Spain, France, United Kingdom
14	Metalsa	Auto parts	nd	14	Germany, Hungary, UK,
15	Corporación EG	Machinery and equipment	85	11	Germany
16	Softtek	Profesional service	70	18	Spain, Netherlands, United Kingdom
18	Grupo Villacero	Metals and metal products	nd	4	Germany
19	Grupo Omnilife	Consumer goods	57	18	Spain
21	Katcon	Auto parts	72	12	Luxembourg, Poland
23	Neoris	Profesional service	nd	10	Spain, Hungary, Holland
25	Kidzania	Recreation, culture and sports	50	21	United Kingdom
31	Kuo Químico	Chemical and petrochemical	61	3	Spain
33	Empresas ICA	Construction	27	16	Spain, Holland, Switzerland
34	Grupo Carso	Holding	15	18	Spain
43	Grupo Kuo	Holding	40	7	Belgium, Spain,
45	Grupo ADO	Transport, storage	nd	2	Spain, Mexico
50	Kuo Automotriz	Auto parts	51	3	Belgium
53	DeAcero	Metals and metal products	nd	3	Spain
54	Grupo Bocar	Auto parts	nd	4	Germany
59	Global Hitss	Profesional service	nd	7	Spain
60	Alsea	Hotels and restaurants	27	6	Spain
66	Petróleos Mexicanos	Mining, quarrying and petroleum	nd	8	Spain, Netherlands, Ireland, Switzerland
69	Grupo Televisa	telecommunications	14	5	Spain
71	Grauforz	Metals and metal products	nd	5	Spain, Netherlands
86	CIE	Recreation, culture and sports	7	7	Spain

Source: BBVA Research with data from Expansión

Another example of the international expansion achieved by Mexican companies is the commercial diversification of their products. An analysis of the main destinations for Mexican exports for the period 2000-13 shows the following: i) the USA (Mexico's main export destination) reduced its share to 78.9% in 2013, from 88.2% thirteen years previously; ii) albeit with a minor proportion, the EU shows a slight gain in market share, from 2.8% to 4.6% in the same period, and iii) the greater commercial diversification of Mexican exports was seen (among others) in the two groups of products in which Mexico has a revealed comparative advantage: machinery and electrical equipment, and transport equipment (see figure 5.14).

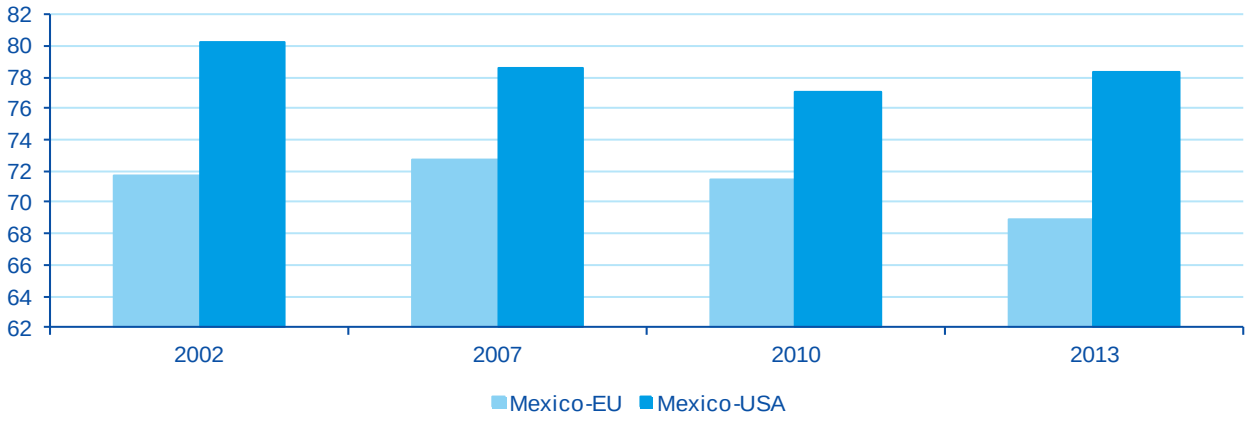
Figure 5.14
Mexico's main export markets for total merchandise, machinery and electrical equipment, and transport equipment in 2000 and 2013



Source: BBVA Research with WITS data

The greater US market share of Mexican exports is not only due to the geographical proximity of this market or the drive it gets from NAFTA. Over the last twelve years, the trade complementarity index (where 100 indicates perfectly complementary of exports and imports between two countries) between Mexico and the US remained above the index between Mexico and the EU (see figure 5.15). Although this situation reflects a greater commercial integration between Mexico and US than with the EU, foreign direct investment from the EU has benefitted from the close ties between Mexico and its North American neighbour. In other words, EU foreign direct investment flows to Mexico probably represent strategic decisions in the vertical integration of their production, with a view to positioning themselves for greater ease of access to the US market.

Figure 5.15
Trade complementarity between Mexico-US and Mexico-EU



Source: BBVA Research with WITS data

5.7 Clear regulation and in the same conditions as domestic companies

FDI from the EU not only benefits from the close trade integration between Mexico and US, it also benefits directly from being treated no less favourably than domestic companies in Mexico. Pursuant to Article 6 of Provision 2/2001 of the Joint EU-Mexico Council, each party shall offer the services and the service providers of the other party a no-less favourable treatment than that offered to their own services or providers (with respect to all measures that affect the provision of services). To that end, any party may offer the other party's services or service providers a formally identical or formally different treatment to that offered to its own services and providers. Pursuant to Article 6 of Provision 2/2001, a formally identical or formally different treatment shall be considered less favourable if it modifies the conditions of competition in favour of the services or service providers of the party, in comparison with similar services or with similar service providers of the other party.

In particular, the EU-MX FTA stipulates a level playing field for national and foreign providers of financial services. Article 14 of Provision 2/2001 of the Joint EU-Mexico Council establishes that each party is obliged to offer the other party's financial service providers (including those that are already established in their territories on the date that the agreement came into effect) a no-less favourable treatment than that offered to its own financial service providers with respect to setting up, acquisition, expansion, administration, management, operation and sale or other arrangement of commercial transactions of financial service providers in its territory. Article 14 extends these same guarantees to the provision of cross-border financial services.

Articles 8 and 18 of the afore-mentioned Provision also stipulate that each party may regulate the provision of services in its territory, provided that the regulations do not discriminate against the services and service providers of the other party, in comparison with its own similar services or similar service providers.

As for investments and their related payments, both Mexico and the EU set out their international commitments in the matter in the EU-MX FTA, especially, signing up to the OECD Codes of Liberalisation and National Treatment Instrument (Article 34 of Provision 2/2001 of the Joint EU-Mexico Council). The Code of Liberalisation of Capital Movements and the Code of Liberalisation of Current Invisible Operations (OECD Codes of Liberalisation) are binding legal rules, which stipulate a progressive and non-discriminatory liberalisation of capital movements and the right to carry out transactions in the services sector (OECD 2014a). Rolling out these codes implies accepting the periodic peer reviews, such as to encourage unilateral liberalisation apart from the liberalisation negotiated between countries or regions (OECD 2014a). The OECD National Treatment Instrument (2014b) in turn establishes the commitment of a country to offer a no-less favourable treatment to foreign companies operating in its territory, in comparison with domestic companies in similar situations. Unlike the Codes of Liberalisation, the OECD National Treatment Instrument is voluntary rather than legally binding, and the sectors in which Foreign Direct Investment is limited or prohibited are expressly listed in the document National Treatment for Foreign-Controlled Enterprises, including Adhering Country Exceptions to National Treatment (OECD 2013).[27]

In the case of Mexico, foreign investors may take a holding in the capital of Mexican companies and in the acquisition of fixed assets without limit. They can also enter new fields of economic activity, manufacture new product lines, open and operate establishments, apart from extending and re-locating existing ones (Foreign Investment Act - *Ley de Inversión Extranjera* - 2014), except for some economic activities in which foreign holdings are not permitted, are limited or require the authorisation of a specialised body of the federal

27: See "National Treatment for Foreign-Controlled Enterprises, including Adhering Country Exceptions to National Treatment" (OECD 2013) for further details on exceptions.

government,[28] in compliance with principles set out in the Mexican Constitution, the Foreign Investment Act (2014) or other internal legislation or regulations, which are referred to by the list of exceptions of the OECD National Treatment Instrument (2013).[29] This way, over 90% of economic activities in the country are currently wide open to foreign investment (Labariega 2013), and the percentage has been growing as the recent amendments to the Foreign Investment Act (2014) have opened up some sectors even more. For example, in January 2014, the Financial Reform opened up the insurance, rating and credit information company market to foreign investment by eliminating the requirement to have a favourable ruling from the federal government[30] for foreign investment to exceed 49%.[31]

The OECD National Treatment Instrument (2013) lists the exceptions established by each country in the treatment of domestic companies *vis-à-vis* their foreign counterparts, and it acts as a transparency mechanism that allows all countries to find out restrictions beforehand. Countries signing up to this document also undertake not to introduce new exceptions other than those expressly listed (OECD 2014b).

Apart from guaranteeing equal conditions and opportunities for foreign companies, Mexico has made an enormous effort in regulatory matters to ensure competition in all markets, with recent reforms to its Constitution and the consequent amendments to the Economic Competition Act (*Ley de Competencia Económica*).[32] The constitutional reform creates two new national agencies in this area: the Federal Economic Competition Commission (COFECE, as it is known in Mexico) and the Federal Telecommunications Institute (IFT in Mexico) (which exercises its authority only in the sectors of radio and telecommunications). Although these agencies were already operating beforehand, the constitutional change gives them greater autonomy and independence from other public authorities and they get new and greater powers, including greater capacity to order measures to eliminate barriers to free entry and to economic competition, the regulation of access to essential inputs and the legal system to order the divestiture of economic agents (Government of the Republic 2014). The constitutional reform also creates tribunals specialised in economic competition, radio and telecommunications. This legal framework has already borne its first fruit, for instance, with the identification by the IFT of preponderant agents in the radio broadcasting sector and the consequent imposition of the necessary measures to prevent this from affecting competition and free entry to the market.[33] With the new regulatory framework, foreign firms not only do participate in the market under the same conditions as domestic enterprises, but in a more competitive environment.

28: National Foreign Investments Commission (Foreign Investment Act 2014).
29: See pages 68-71 of "National Treatment for Foreign-Controlled Enterprises, including Adhering Country Exceptions to National Treatment" (OECD 2013) and the Foreign Investment Act (2014) for further details on Mexico's exceptions.
30: Via the National Foreign Investments Commission
31: Amendment to the Foreign Direct Investment Act published in the Official Gazette of the Federation on 10 January 2014.
32: Published in the Official Gazette of the Federation on 11 June 2013 and 22 May 2014 respectively.
33: For further details, see ruling P/IFT/EXT/060314/77 of the IFT Plenary, available at: http://apps.ift.org.mx/publicdata/P_IFT_EXT_060314_77.pdf.

6 Conclusions

The findings of this study indicate that the trade agreement between Mexico and the European Union has benefitted trade flows and investment. This was reflected in the increase in share of some groups of products from one country/region in the imports of the other. In particular, the positive effects for Mexico of the trade treaty with the European Union were shown in the groups of machinery and electrical equipment, and transport equipment. The European Union, in turn, saw increases in its share of chemicals and similar products, and transport equipment, in Mexican imports over the last thirteen years. The results of the gravity model corroborate the trends observed in the descriptive statistics, indicating a positive and significant effect of the EU-MX FTA on Mexican exports in the economic sectors with a comparative advantage: machinery and electrical devices and transport equipment. This model also suggests a positive and significant effect of the EU-MX FTA on EU exports in the groups of goods for which this block of countries has shown a comparative advantage: edible products and chemicals.

The benefits of the EU-MX FTA for Mexico are even more significant, given the share of the machinery and electrical equipment and transport equipment sectors in the country's total exports. This treaty has also contributed to a greater diversification of Mexican exports. Although the benefits of the treaty have focused on certain sectors of the economy, an extension of the EU-MX FTA to include some Mexican exports (such as banana, tomatoes and some citrus fruits) which today face tariffs, quotas or reference prices, could benefit both economies. On the other hand, the EU-MX FTA should open the trade of some EU exports such as barley, potatoes, wheat and meslin. As long as a fraction of the agricultural sector is not covered by the treaty, not all opportunities from comparative advantage will be exploited, neither all possible benefits in terms of efficiency.

In terms of foreign direct investment, the results of the econometric model suggest that there is a positive and significant long-term relationship between the FDI from the European Union and Mexican manufacturing exports to the world. According to our estimates, a USD1m increase in FDI from the European Union increases Mexico's total manufacturing exports by around USD679,000.

Apart from its effect on trade flows and investment, the EU-MX FTA has encouraged a more favourable business climate for Foreign Direct Investment, mainly from the EU to Mexico. It is now the second most important source for Mexico after the US. In 2000-14, the new investment component of European FDI had a high share, even greater than its US counterpart.

Other advantages that Mexico offers for FDI include the quality and spread of its current and future infrastructure, especially considering the new projects that comprise the National Infrastructure Plan 2014-18. With the right transport network, firms reduce their costs and the production process gains more efficiency. Along with the quality of the infrastructure, competitive wages and tariff advantages on producing and exporting from Mexico to the US and other international markets are key factors attracting foreign companies to set up in Mexico. Mexico has proved to be an essential element in the global value chains of the automobile industry because of its close trade ties with the US, one of the largest consumer markets in the world. Car manufacturers have taken advantage of these factors to assemble and produce cars in Mexico and export them to the US and to over 40 other countries with which Mexico has trade agreements. This way, these firms have benefitted from the reduction in costs represented by the absence of duties when exporting from Mexico. The strategy of the automotive companies could be replicated by other industries.

In perspective, the Mexican economy offers great opportunities in sectors that had been historically reserved for domestic investment. The recent constitutional reform in the energy sector represents a niche for FDI, mainly in oil and electricity production. It stands out that any EU firm that decides to establish a commercial presence in Mexico will enjoy a no-less equitable treatment to that offered to domestic companies. The guarantee of national treatment is part of the obligations of Mexico and the EU arising from signing the treaty.

Thus, the data show that the effects of the EU-MX FTA have been positive in terms of trade flows, investment and improvement of the opportunities for FDI in Mexico. An extension of the treaty achieving the trade liberalisation that is still missing in the agricultural sector would extend the benefits to other industries, increasing the productive capacity of the regions involved.

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Annex A

Table A.1 EU imports of Mexican goods. Classified in category 5

Live animals	Cattle (except thoroughbred heifers and cows)
Meat	Beef, pigs and poultry (fresh, frozen and cold meats)
Offal	Other viscera (animals of all kinds)
Dairy and other products	Milk and cream, whey, yoghourt, butter, cheese
	Eggs
	Honey
Flowers	Fresh and dried flowers
Vegetables	Asparagus, sweet maize, potatoes, peas, beans, olives, mushrooms, tomatoes, artichokes
Fruit	Bananas, grapes, apples, pears, strawberries
Cereals, flour and starch	Wheat, rye, oats, maize, rice, sorghum, morcajo (blend of wheat and rye), barley, yucca
Vegetable oils	Olive oil
Preparations	Sauces made from crustaceans, molluscs and other aquatic invertebrates
Tuna	Tuna steaks[1]
Sweeteners	Sugar, lactose, maple syrup and other sweeteners
Jam, conserves and similar products	Cherries, strawberries, raspberries, applies, mandarin oranges, tropical fruits; tomato preparations, sweet maize, asparagus
Juices	Orange, lemon, pineapple, tomato, grape, apple, pear, cherry, tropical fruits, grape must
Alcoholic beverages	Wine
	Rum
Food industry by-products	Wheat and maize bran

Source: BBVA Research with data from Annex I, Decision 2/2000 of the European Union-Mexico Joint Council.
[1]In recent years the EU opened a quota of 5,000 tonnes of tuna lions with a preferential tariff of 6%.

Table A.2 Mexican imports of EU goods. Classified in category 5

Live animals	Cows, pigs, sheep, goats, poultry
Meat	Beef, pork, mutton, goat and poultry
Offal	Beef, pork and poultry
Animal fats	Lard made from pork, beef, mutton, goat, poultry and marine mammals
Dairy and other products	Milk and cream, whey, yoghourt, kefir, butter, cheese and cottage cheese
	Eggs
Vegetables	Potatoes
	Beans
Fruit	Bananas
	Apples
	Peaches
Coffee	Coffee
Cereals, flour and starch	Wheat, rye, barley, oats, maize, rice, sorghum, potatoes, yucca
Vegetable oils	Peanut, palm, coconut, almond
Cold meats and similar products	Poultry, pork, beef and other
Tuna	Tuna steaks
Sweeteners	Cane sugar, beet sugar and others; lactose and lactose syrup, maple sugar and syrup, glucose and glucose syrup, fructose and others
Cocoa	Cocoa (except beans)
Chocolate	Chocolate
Cereals-based preparations	Four, starch, starch or milk, and biscuits; pasta (spaghetti, noodles, macaroni, etc.), pre-cooked and prepared cereals, sweet biscuits
Jam, conserves and similar products	All jellies, jams and compotes; tomato and potato preparations, peach conserves
Juices	Grape, grape must
Coffee	Coffee extracts and essences
Ice cream	Ice cream
Milk preparations	Milk protein concentrates
	Water containing milk
Alcoholic beverages	Rum
Cereals industry by-products	Bran from maize, rice, wheat and other cereals; starch industry by-products
Animal feed preparations	Prepared seed mixtures for use as poultry feed
	Grasses and other preparations used as animal feed
Cigarettes	Cigarettes

Source: BBVA Research with data from Annex I, Decision 2/2000 of the European Union-Mexico Joint Council.

Annex B

This annex presents the mathematical definition of the concept of revealed comparative advantage (RCA).

According to the user manual contained in the document Online Trade Outcomes Indicators, revealed comparative advantage is a "measure of a country's relative advantage or disadvantage in a given industry as evidenced by trade flows".

In mathematical terms, RCA is formulated as follows:

$$VCR_{ijk} = \frac{\frac{e_{ijk}}{E_{ij}}}{\frac{e_{mjk}}{E_{mj}}}$$

where e_{ij} and E_{ij} represents exports of product k from country i to country j and total exports from country i to j, respectively. Meanwhile, e_{mj} and E_{mj} indicates world exports of product k to country j and total world exports to country j.

Where RCA is greater than 1, the proportion of exports from a given sector in a given country exceeds the proportion of world exports from the same sector made to the country in question. On this basis, we may conclude that the exporting country has a revealed comparative advantage in the sector. In contrast, if RCA is less than 1, a revealed comparative disadvantage exists in the sector.

Annex C

This annex explains the methodology utilised to identify the sectors of the Mexican economy most likely to benefit from the EU-MX FTA.

The algorithm used to select the sectors consists of the following steps:

1. One point is assigned to the sector in the following cases:

i) if RCA was greater than 1 in 2012, or if RCA doubled between 2002 and 2012 with a value of at least 0.5 in 2012;

ii) if the sector is one of the 10 main exporters of ICG to the world;

iii) if the sector exceeds the 5% threshold for bilateral global value chains.

2. The points assigned to each sector are added together.

3. Scores are ranked from the highest to the lowest.

4. All sectors with a score of 2 or more are initially selected.

Annex D

This annex presents the results of our econometric estimation of the VECM to explain the impact of FDI from Europe on total Mexican manufacturing exports.

Table C.1
Calculation of the Vector Error Correction Model
Sample: 1999Q3 2014Q3. T-statistic in [ ]

	Z_{t-1}		$D(ManExp_t)$[1]	$D(FDIUSA_t)$	$D(FDIEU_t)$	$D(ManProdUSA_t)$	D(REER
$ManExp_{t-1}$	1.000000	Z_{t-1}	-0.144903	0.68578	0.438362	-0.000153	-0.0001
$FDIUSA_{t-1}$	-1.465476		[-4.12250]	[5.79769]	[2.82017]	[-3.19474]	[-0.5558
	[-6.09931]	$D(ManExp_{t-1})$	-0.47862	-0.130854	-1.106959	-0.0000999	-0.00007
$FDIEU_{t-1}$	-0.678569		[-4.11112]	[-0.33400]	[-2.15010]	[-0.63155]	[-0.0957
	[-3.65205]	$D(FDIUSA_{t-1})$	-0.117806	0.04817	0.407383	-0.00016	-0.0000
$ManProdUSA_{t-1}$	17.79014		[-3.02555]	[0.36762]	[2.36591]	[-3.03359]	[-0.2303
	[0.31596]	$D(FDIEU_{t-1})$	-0.053167	0.124636	-0.171867	-0.0000782	-0.0001
$REER_{t-1}$	160.4823		[-1.67911]	[1.16968]	[-1.22741]	[-1.81938]	[-0.8314
	[4.82696]	$D(ManProdUSA_{t-1})$	290.4322	-350.3373	182.9509	0.493882	-0.2748
C	-24081.1		[3.34887]	[-1.20040]	[0.47703]	[4.19277]	[-0.4510
		CRISISDUMMY	-0.526084	-745.5185	201.7339	-2.680497	-5.4980
			[-0.00106]	[-0.44556]	[0.09175]	[-3.96915]	[-1.5739
		C	6.891074	108.4235	48.82646	0.285677	0.32830
			[0.07733]	[0.36154]	[0.12390]	[2.36016]	[0.5243
		Adjusted R^2	0.453528	0.494367	0.21625	0.725514	-0.0414
		BIC	62.35517				

1/ The mathematical indicator D( ) reduces the score for variable shown in parenthesis in the prior period.
Source: BBVA Research based on data published by INEGI, BIS, SE and the Federal Reserve

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