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Structural competitiveness of Mexican textile sector exports: a comparative analysis in relation to its competitors

Competitividad estructural de las exportaciones del sector textil mexicano: un análisis comparativo con respecto a sus competidores

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Abstract

This article analyzes the evolution of the Mexican exports of textiles to the United States (U.S.) and the European Union (E.U.) markets in the period 1994-2015, in terms of the composition of products exported to those destinations, by comparing its performance with respect to their main competitors in each case. A shift-share approach shows that despite NAFTA´s protection, there was no relevant structural change in the composition of Mexican exports leading to the generation of new capabilities oriented to develop competitive advantages in more sophisticated products. On the contrary, Chinese competitive profile changed towards more sophisticated products on those markets following a planned upgrading path. As for the E.U. market, results show that Mexican exports experienced a regressive transformation as clothing exports to the U.S were redirected to the E.U. in detriment of the deepening of higher value added exports of elaborated intermediate goods.

JEL Code: L67, F14, F63, L16, O24
Keywords: Mexico; competitiveness; exports; textile; nafta

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Resumen

Este artículo analiza la evolución de las exportaciones del textil mexicano, en términos de la composición de los productos vendidos en Estados Unidos (E.U.) y la Unión Europea (U.E.), de 1994 a 2015, comparando su desempeño con respecto al de sus competidores. La aplicación de una técnica estadística diferencial-estructural revela la inexistencia de un cambio estructural cualitativo relevante, que permitiera generar capacidades tendientes a desarrollar ventajas competitivas en productos alternativos de mayor valor agregado al amparo del TLCAN. Comparativamente, en el caso chino, el perfil competitivo fue diversificándose en dirección de productos más sofisticados en una senda de escalamiento productivo. En cuanto a las exportaciones mexicanas al mercado europeo, los hallazgos obtenidos muestran indicios de una transformación regresiva, en la que las ventas de prendas de vestir, originalmente destinadas a E.U., fueron re direccionadas hacia la U.E., en detrimento de la profundización de las exportaciones de insumos de mayor valor agregado.

Código JEL: L67, F14, F63, L16, O24
Palabras clave: México; competitividad; exportaciones; textil; TLCAN

Introduction

At the end of the 1980s, Mexico abandoned its import substitution industrialization strategy in favor of an orthodox model that promoted economic deregulation and accelerated trade liberalization. In this new pattern of specialization and competitiveness, foreign trade is conceived as the main lever for structural change and development, which translates into the implementation of various public programs to support external competitiveness associated with specific tariff regimes for the maquiladora export industry and the Temporary Import Program to produce Export Articles (Spanish: Programa de Importación Temporal para producir Artículos de Exportación, PITEX) (Puyana & Romero, 2006; Vázquez, 2012). As a culminating point, the entry into force of the North American Free Trade Agreement (NAFTA) in 1994 meant the definitive integration of the Mexican economy into a regional division of labor. This division was led by the strategies of large transnational groups, new central actors in the pattern of competitiveness, and represents the entry of high amounts of foreign investment into the country in the form of assembly companies in specific leading sectors such as the automotive sector (Capdevielle *et al*., 1997).

As a result, the weight of the external sector increased, and Mexican exports linked to global processes grew at high rates, concentrating on an increasingly reduced number of products sold mainly in a single market, the United States (Capdevielle, 2005). With the development of the maquila industry on the northern border and the incorporation of Mexican companies into highly hierarchical regional value chains, Mexico rapidly became an export enclave whose success is based on three main competitive advantages: low labor costs, geographic location, and the existence of NAFTA. The above makes the export of products from Mexico to the United States possible under specific tariff regimes. However,

contrary to theoretical assumptions, export success does not translate into sustainable GDP and employment growth and is even incapable of counteracting the increase in imports (Romero *et al*., 2005).

Emblematically, in the case of the textile sector, the export dynamism in the nineties was produced by maquiladora enclaves in the north of the country as a result of a strategy of global cost reduction by large North American transnational companies in the face of competition from Asian countries (González, 2004). Of the 1,789 million dollars of foreign direct investment directed to the textile and apparel industry between January 1994 and September 2001, more than 80% came from the United States (García de León, 2008). As the Mexican textile sector becomes part of regional productive trends, marked by the segmentation of the productive process and the subsequent offshoring of tasks at an international level, irreversible transformations are taking place. Along with the development of successful industrial complexes, as in the case of the Laguna region, which quickly became the denim capital, SMEs went bankrupt or, in the best of cases, moved into informality by dispersing their production in workshops and homes in rural areas (Taboada, 2000).

These changes were accelerated by the expiration of the Agreement on Textiles and Clothing (ATC)[1] in 2005, which marked the end of strict regulation of international flows of goods through the principle of discriminatory quotas on entry to major markets. The disappearance of quota systems has increased competition, particularly among low-cost countries. It has resulted in overproduction in the sector and growing demands from the governance of regional value chains in terms of suppliers' capabilities (access to inputs and transportation and capabilities for the design and adaptation of new technologies, among others) (Cárdenas & Dussel, 2007). In practice, the cancellation of the tariff advantages granted by NAFTA means an increase in the U.S. market share of Asian countries, especially China, as well as the displacement of a large number of Mexican suppliers unable to increase their investment in technology and organizational processes, even leading to the decline of the most successful industrial complexes such as the one in Laguna (Morales *et al*., 2010).

In this context, it is of interest to carry out a structural diagnosis to detect the specific shortcomings of the established sectoral strategy, both at the product group level and in comparison with the country's main competitors in the larger markets (the United States and the European Union).

[1]Established from 1995 to 2004 by the World Trade Organization (WTO) to replace the Multifiber Arrangement (1974-1994) as a transition period toward full liberalization of the sector.

Background and objectives

An initial examination of the external performance of the Mexican textile sector suggests an evolution marked by three stages. Between 1994 and the year 2000, the value of exports multiplied 4.5 times. This was a result of trade liberalization and the insertion of the sector in regional value networks that made possible an incipient and localized scaling up of capacities in terms of process, product, and organizational innovations, in the direction of business models in which tasks ranging from fabric manufacturing to packaging and distribution are integrated (Taboada, 2000). In a second period, once the possibilities of this process were exhausted, and with the total liberalization of international trade in the sector, which meant the displacement of Mexican supplier industries by foreign ones within these networks, sector sales abroad plummeted from 10 986 billion dollars in 2000 to 5 536 billion dollars in 2009. After that year, and following the deindustrialization of entire branches of the Mexican textile industry, exports stabilized, reaching a value of 6 730 billion dollars in 2015 (Figure 1).

The competitive deterioration of the Mexican textile sector since 2000 has come with a high degree of export concentration, both in terms of destination markets and products traded. In 1994, 89.7% of sector exports were directed to the United States market, and 54.4% were clothes (category 1810); by 2015, these percentages were 89.4% and 47.6%, respectively. It should be noted that, for the last year of the series (2015), three product categories, manufacture of apparel, manufacture of made-up articles of textile materials (1721), and manufacture of knitted and crocheted fabrics and articles (1730), make up 83.3% of sectoral exports (Table 1). As for the rest of Mexican foreign trade, this high concentration of foreign sales implies a greater vulnerability to changes in the demand and prices of this type of products in the U.S. market. In fact, in the economic literature, one of the transmission mechanisms identified between export diversification and economic growth is the "portfolio effect," which, by contrast, promotes less volatility of exports and export revenues, with a positive impact on the level and consistency of GDP growth (Stanley & Bunnag, 2001; Strobl *et al*., 2009).

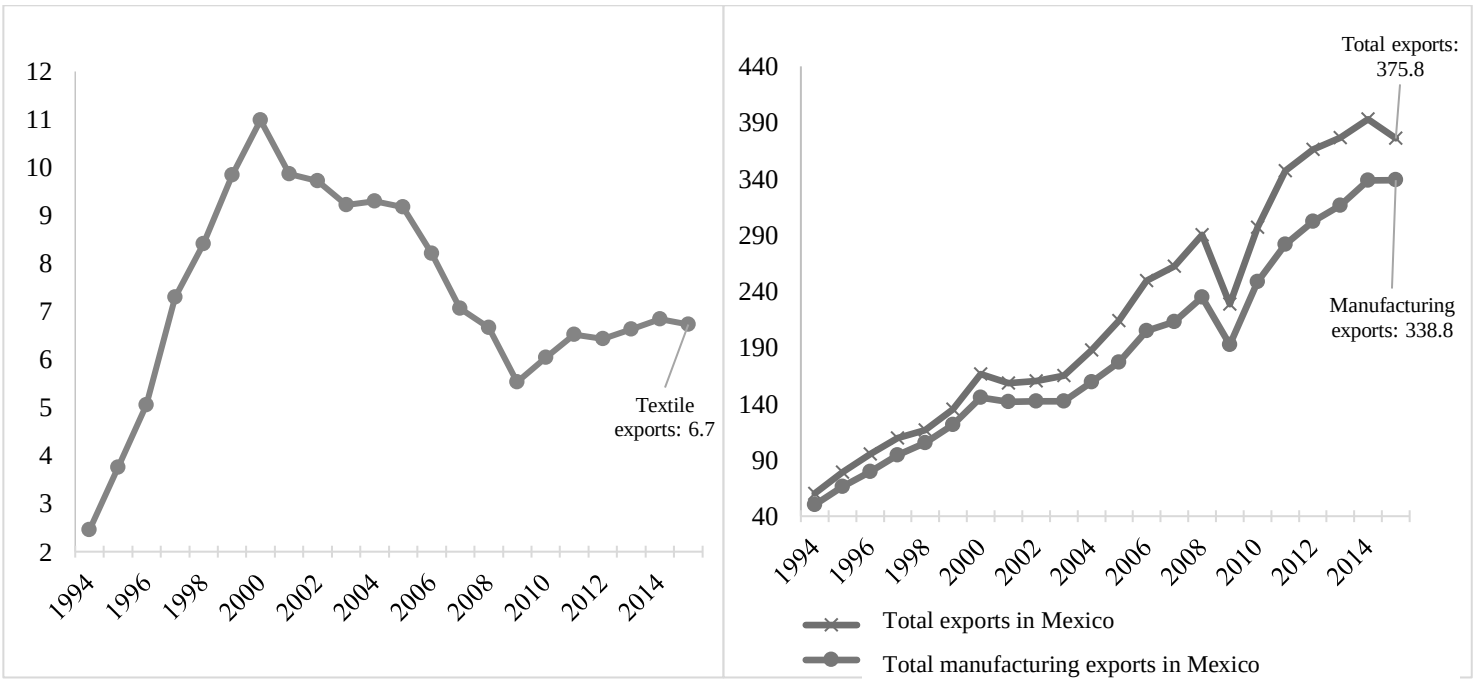

Figure 1. Mexico's total exports, manufacturing and textile exports, 1994-2015 (billions of dollars)
Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

Table 1
Structure of Mexican textile exports to the world by product category, 1994-2015 (billions of dollars and percentages)

Years/Category	1994	2000	2005	2010	2015
Total exports	2.45	10.99	9.17	6.05	6.73
Spinning, weaving, and finishing of textile products	14.33	8.25	5.27	6.41	7.55
Manufacture of articles made from textile materials, except clothing	14.62	8.99	9.70	13.52	17.11
Manufacturing of carpets and rugs	2.69	0.65	0.61	0.59	0.82
Rope, twine, twine netting, and netting manufacture	0.91	0.57	0.88	1.18	1.13
Manufacture of other textile products	3.57	3.13	3.58	6.28	7.16
Manufacture of knitted and crocheted fabrics and articles	9.51	17.87	16.97	20.54	18.60
Manufacture of clothing, except fur apparel	54.38	60.54	62.99	51.48	47.63
Total	100	100	100	100	100

Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

Structurally, the deterioration of Mexican textile competitiveness, as a result of the trade liberalization of the sector at the global level, translates into a reduction in the share of apparel exports, a category of assembly products linked to the activity of regional manufacturing networks, led by large U.S. transnational companies, in favor of the shares of sales of articles made from textile materials (1721) and other textile products (1729) in total exports (Table 1). This compensatory shift is associated with a sharp increase in the share of apparel exports in sectoral sales made to the E.U., from 32% in 2005 to 61.4% in 2015. The above, despite not being significant in absolute terms for the trade of the sector and not making it possible to compensate for the loss recorded in the market of the main trading partner, highlights the potential role of the E.U. market as an element of diversification of export destinations and consequently of stabilization of export activity revenues.

In the U.S. market, the loss of competitiveness of Mexican textiles is associated with the sharp increase in China's market share following trade liberalization. In 2000, Mexico and China's share of sectoral sales in the U.S. were practically identical at an overall level (13.2%), and in the main exported products (in the 1810 category, both nations had a share of around 14%). By 2010, once world trade in the sector had been fully liberalized, China controlled almost half of the main market in the world (41.4%), followed far behind by Mexico (4.9%) and India (4.8%) (Figure 2). The sharp reduction in Mexico's share is mainly explained by the substitution of Mexican contractors with Chinese contractors in the search by

regional manufacturing networks for more complex competitiveness factors (flexibility, quality, design capabilities, and product development) (García de León, 2009).

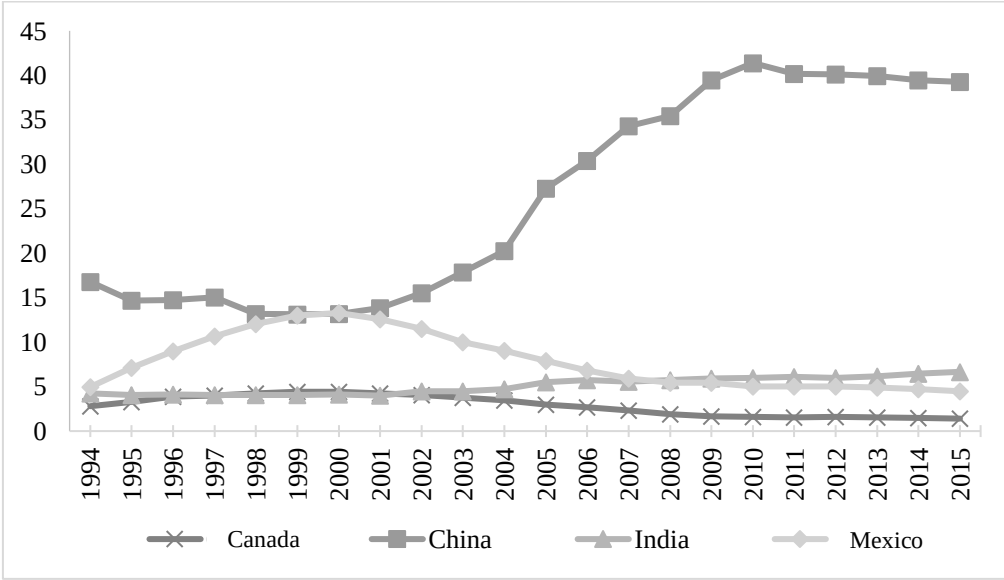

Figure 2. U.S. market shares by country, 1994-2015 (percentages)
Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

At the product category level, as expected, countries have developed specific competitive advantages based on their technological and organizational capabilities regardless of the destination market of their exports. Thus, while China has increased its shares in the U.S. and E.U. markets, particularly in sales of ready-made articles of textile materials (1721), in which in 2015 it controlled 59% of the U.S. market, India has strengthened its presence in those destinations via exports of carpets and rugs (1722) (Table 2). On the other hand, Mexico displays a pattern of specialization determined by its geographic location and dependent on U.S. demand, in which other export destinations have not been exploited. In sum, the productive regional organization constructed around NAFTA, and marked by the segmentation of the manufacturing process into tasks, has prevented the generation of sustainable competitive advantages in certain types of products.

Table 2
U.S. and E.U.* market shares by country and product category, 2015 (percentages)

Categories	Mexico		China		India	
	U.S.	E.U.	U.S.	E.U.	U.S.	E.U.
Total exports	4.48	0.10	39.25	38.00	6.66	7.48
Spinning, weaving, and finishing of textile products	5.30	0.13	26.54	32.68	10.79	8.90
Manufacture of articles made up of textile materials, except clothing	5.62	0.12	58.97	46.21	15.10	10.66
Manufacturing of carpets and rugs	0.96	0.06	23.31	23.42	34.05	25.28
Rope, twine, twine netting, and netting manufacture	8.02	0.15	43.64	39.18	3.81	6.65
Manufacture of other textile products	8.87	0.26	23.26	31.67	2.70	4.12
Manufacture of knitted and crocheted fabrics and articles.	3.57	0.08	33.89	32.31	3.11	4.96
Manufacture of clothing, except fur apparel	4.28	0.10	38.58	40.01	4.81	7.52

*In the case of the E.U. market, transactions between E.U. countries are excluded from the calculation
Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

In this regard, the "sudden" loss of export dynamism of the Mexican textile sector since 2000, as a result of both global transformations and the public policy followed, is evidence of the high vulnerability of a model of productive specialization and trade openness based on the exploitation of static competitive advantages (Vidal, 2014). From a structural perspective and as an input for an alternative sectoral public policy, this paper therefore seeks to analyze the main determinants of the evolution of Mexican textile industry exports from 1994 to 2015, comparing its performance to that of its main competitors in terms of the composition of the products sold in the markets of the United States and the European Union. A second objective is to determine whether, as a result of the international liberalization of the sector, there was a significant qualitative structural change in the country's competitive profile and, if so, to define its main features.

Method and sources

From a structural perspective, substantive improvements in terms of external competitiveness do not only come from increases in foreign sales revenues but also require greater diversification of exports, innovation in the development of new products, improvement of technological capabilities, increasing

productive sophistication, economies of scale, domestic backward and forward linkages, and various types of pecuniary and technological externalities (Aditya & Acharyya, 2013). Likewise, the seminal work on the "complexity" approach by Hidalgo *et al*. (2007), argues that, at the global level, economies grow and transform through the scaling up of the goods produced and exported, i.e., through the development of the capabilities necessary to manufacture these goods. These authors find that the industrialized countries occupy the center of the most densely populated traded product space in the world, made up of the sectors most interconnected with the other activities, which are machinery, metal products, and chemicals. While the Southeast Asian region concentrates its comparative advantage in textiles, clothing, and electronics, Latin America has developed an even more peripheral pattern of specialization centered on the exploitation of natural products such as mining and agriculture. In this view, structural analysis is carried out by studying networks of exported products, their characteristics, and, in particular, the density of the networks considered (Hidalgo & Haussman, 2009).

In a similar way, but with a simpler procedure, the shift-share technique used in this work makes it possible to compare the evolution of the external competitiveness and the export structure of the Mexican textile sector in relation to a group of reference countries consisting of Mexico and its three main competitors in each market (Canada, China, and India in the U.S. market, and China, India, and Turkey in the European Union (E.U.) market). The differential-structural technique has traditionally been used to study differences between regional and national growth rates in variables such as employment and productivity. Although it is a relatively simple methodology with certain limitations, it is also a proven tool for isolating trends in the behavior of statistical series and generating information for public policy decision-making since it makes it possible to interpret significant changes in the industrial structures of economies (Wilson *et al*., 2005). The Monetary Authority of Singapore (Monetary Authority of Singapore, 1998) has used the shift-share technique to evaluate the competitive position of this country between 1991 and 1996.

The main limitations of the technique are temporal, theoretical, and predictive (Yasin *et al*., 2004). In the first instance, this technique does not yield a causality analysis since it does not make it possible to identify irrefutably the reasons behind the trends recorded by the competitive behavior of the countries. However, a breakdown of the study variable (in this case, exports) into specific components (effects) provides relevant information on the structural characteristics that determine the changes observed. Secondly, although the technique makes it possible to compare the structural features of countries with different degrees of growth, another important limitation is that it does not generate predictive estimates of future developments or the sustainability of the trends observed in the context of counterfactual structural features (Timmer, 1988). However, it should be noted that the results yielded by the very diverse applications of the methodology have not been solidly refuted to date and, in many cases,

have served as efficient predictive and planning tools. In this respect, the empirical and limited nature of the objectives set out in this article makes shift-share the appropriate instrument for both theoretical and practical reasons.

In the third and final instance, according to Barff and Knight (1988), one of the most criticized aspects of this technique is related to the fact that it examines the economic changes registered in a given period, generally taking for the statistical exercise only data for the initial and final year, which can result in a bias if the years selected are atypical. In the case of the versions used for this type of work, the standard procedure would be to use exports at the beginning of the period to calculate the effects that occurred or adopt as a reference value an average between the values of the different years. If there are significant transformations in the industrial structures considered over time, the above procedure might not adequately consider the origin of the changes in total exports, underestimating or overestimating the interactive effect.

However, the present work uses the more complete "dynamic" version of the methodology developed by Wilson *et al*. (2005), based on previous works (Barf & Knight, 1988). The growth rates of exports, their reference values, and consequently the different effects, are calculated on an annual basis, making it possible to accurately measure the structural changes that have occurred by taking the previous year's exports as a reference for each year. This dynamic version of the shift-share makes it possible for the export growth rates and the export structure to vary and be updated each year, based on successive changes in the export values of each country considered. As an additional advantage, by obtaining an uninterrupted picture of the evolution of the export differential and its components on an annual basis, the analysis helps to identify possible structural breakpoints within the study period, as well as more significant trends in the competitiveness of the different economies (Wilson *et al*., 2005).

In the case of the E.U., the exercises are calculated by excluding transactions between member countries of the union, which have not been considered competitors because they are considered to have tariff advantages that may affect the logic of the analysis. The change in exports made in category i by economy j to a specific destination (deij) is given by the sum of the "shared" (sij), "structural" (mij), "competitive" (cij), and "interactive" (aij) effects:

$$deij=sij+mij+cij+aij \quad (1)$$

Where e=exports, i=category of exported products, and j=competing country. Each sector of each country has a "standard" growth component (sij) called "shared," to which the positive or negative contributions associated with the performance of each case (mij+cij+aij) must be added. The shared effect (sij) represents the change in exports that would have occurred if the export structure of the country in

question had followed the trend of the reference group formed by its competitors (homothetic exports e'ij) and the growth rate of its exports in that category (rij) had been equal to the rate of increase of the reference group (rio), that is:

$$sij=e'\ ij.rio \text{ where } e'\ ij=eio.eoj/eoo \tag{2}$$

eio=exports of i of reference group o;
eoj=total textile exports of the country
eoo=total textile exports of reference group

If eij - e'ij is positive, the country in question specializes in that product category within the sector compared to the reference group, and vice versa if the value is negative. Consequently, any difference between changes in exports of category i of country j and the "shared effect" (sij) represents the "net effect" or "differential effect" (edij) resulting from the specific characteristics of each economy and is measured in absolute terms in U.S. dollars from the following breakdown:

$$edij=deij-sij=deij-e'\ ijrio=eijrij-e'ijrio \tag{3}$$

A positive value in this differential means an improvement in competitiveness in relation to the reference group, while a negative value implies a deterioration in competitiveness. This differential is thus the sum of three components, mij, cij, aij. The structural effect (mij) presents the part of the differential caused by the divergence between the sectoral export structure of the economy in question and that of the reference group. This effect is positive if the dynamic categories of the sector have a higher share in exports than the reference group and is, on the contrary, negative if the slow-growing categories have a higher share in the exports of the sector than the reference group. The "structural effect" is calculated as follows:

$$mij=rio(eij-e'\ ij) \tag{4}$$

The "competitive effect" (cij) presents the part of the differential attributed to the divergence between the rate of increase of exports of the economy in question and that of the reference group in that category. This effect is positive if the export growth rate of the country in question is higher than that of the reference group, indicating the special contribution of the dynamism of a product category to the increase in exports, i.e., evidence of the competitive advantage of the economy in question in these products. The "competitive effect" is calculated as follows:

$$cij=e'ij(rij-rio) \quad (5)$$

Finally, the "interactive effect" (aij) indicates the part of the differential caused by a combination of structural and competitive effects. This effect is positive if the economy in question specializes in the categories in which it has a competitive advantage and exports more than the reference group in the product categories in which it has a competitive advantage. The "interactive effect" is calculated as follows:

$$aij=(eij-e'ij)(rij-rio) \quad (6)$$

The information was obtained through the WITS (World Integrated Trade Solutions) of the World Bank program and came from the COMTRADE database, developed by the United Nations (2018). Based on the identified products of the textile sector under the ISIC Rev.3 Classification, the following product categories have been considered for the exercises conducted: Spinning, weaving, and finishing of textile products (category 171); Manufacture of articles made from textile materials, except apparel (1721); Manufacture of carpets and rugs (1722); Manufacture of rope, twine, cordage, twine and netting (1723); Manufacture of other textile products (1729); Manufacture of knitted and crocheted fabrics and articles (1730); and, Manufacture of wearing apparel, except fur apparel (1810). The start and end years of the chosen period (1994 and 2015) are the first and last ones not atypical in their behavior and with complete, consistent, and available information for the countries in question when constructing the information base.

Results

The figures presented below summarize the most important aspects for the analysis of the evolution of competitive positioning in the U.S. and E.U. markets. In order to facilitate their interpretation, the export differentials between the countries and the reference group are presented in absolute terms (in billions of dollars), although the scales may vary depending on the values considered. In the case of Mexico, the main observation is associated with an export differential in the U.S. market, mostly explained by the variations of the competitive effect, i.e., by the difference registered between the growth rates of the exports of the country compared to its competitors, particularly in category 1810, the most important one. The above implies an absence of structural change in the composition of foreign sales in the period and trade based on the consolidation of the static competitive advantages existing at the time.

The data for the main category of Mexican textile sales to the U.S. market (1810) reveal a clear breakpoint around the year 2000, when the net effect (export differential) went from positive to negative, reflecting a loss of competitiveness relative to the reference group. However, this trend, which accelerated until 2005 and diminished after that, maintained its negative sign until the end of the series in 2015. The structural effect (S.E.) remained positive, except in 2001, from 1996 to 2007, taking a value close to zero as of 2008, thus accounting for a truncated process of competitive specialization in that market. Consequently, the interactive effect (I.E.) was positive from 1996 to 1999 as a result of the incipient specialization in a category with a competitive advantage, under the protection of the benefits granted by the trade restrictions on entry into the North American market, and it became negative for the rest of the series, following the trend of the competitive effect. It is worth noting that between 2002 and 2007, the country continued to increase the share of apparel exports in its sectoral sales to the U.S., despite having lost its competitive advantage since 2000, which exhibits the lack of a significant structural transformation of the specialization pattern as a response to the competitive erosion registered (Figure 3).

With regard to the performance of China in the U.S. market, as for Mexico, the competitive effect explains most of the export differential, but its competitive advantage extends to most categories (1711, 1721, 1723, 1730, and 1810). However, this diversified export profile complements a competitive specialization in two main product categories. While sales of clothing manufacturing, an activity with mostly assembly and labor-intensive tasks, represented in 2015 54.5% of its sectoral exports to the U.S., its exports in category 1721, in turn, reached a share of the U.S. market of 59% in the same year. In complete contrast to Mexico, the Chinese net and competitive effects, in these categories, register a loss of competitiveness with respect to the reference group between 1994 and approximately 1999, as a result of trade restrictions to entry into the U.S. market. However, from the beginning of the worldwide liberalization of the sector in 2000, these effects became positive and increased their value until they reached maximum points around 2005 (Figure 4).

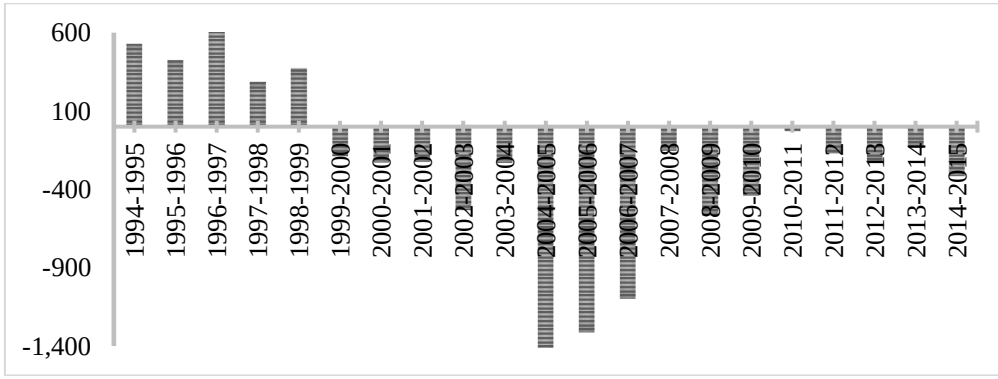

Figure 3.1: Net effect

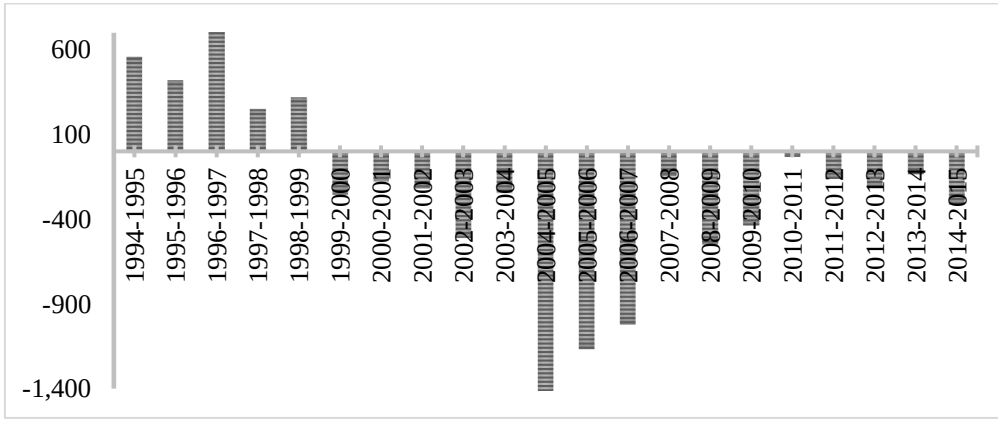

Figure 3.2: Competitive effect

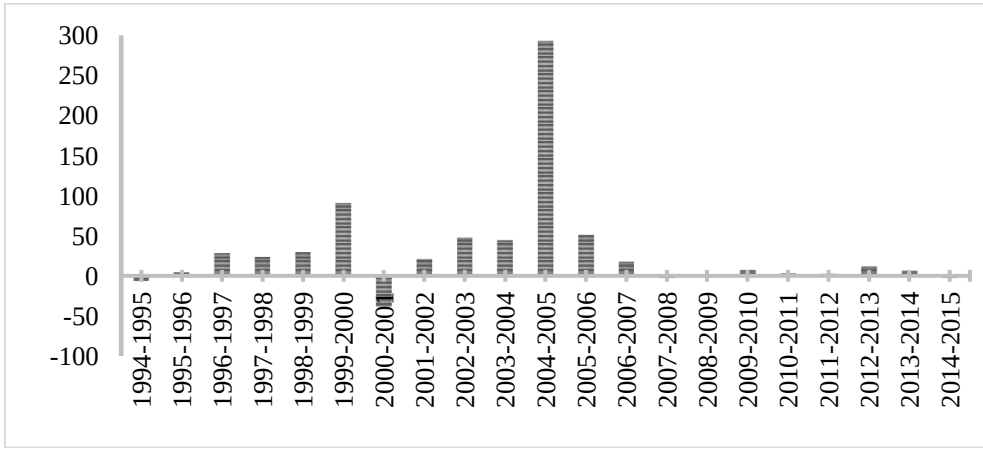

Figure 3.3: Structural effect

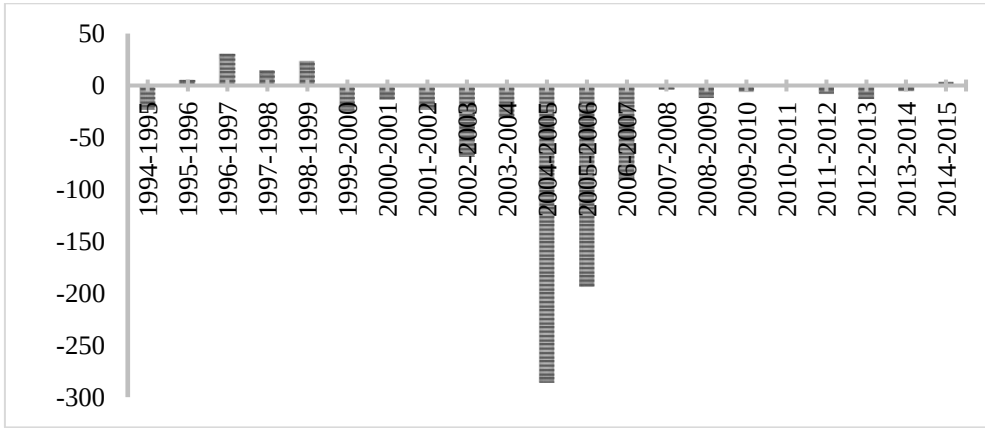

Figure 3.4: Interactive effect
Figure 3. Mexican apparel exports to the U.S. market (millions of dollars)
Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

The evidence of a competitive positioning strategy based on long-term production scaling is evident when analyzing the evolution of the S.E. for China's export categories. For example, while in the case of 1810 products, the S.E. is negative between 2001 and 2009, although the country has a competitive advantage in the U.S. market for these products, the 1721 category S.E. is positive in a similar period (2002 and 2010, except for 2009). The above results from a relative increase in the share of category 1721 items, to the detriment of the share of 1810 goods, in the sector's total exports to the U.S. market. In short, this is a change in the pattern of Chinese specialization, which, while reducing the vulnerability of export earnings by encouraging the diversification of products sold, promotes the growth of categories with higher added value or of those identified as dynamic because of their evolution in the market, such as sales of articles made from textile materials (1721). In fact, as a sign of its dynamic nature, the exports of the reference group to the U.S. market in category 1721 went from representing 7.3% of the sectorial sales of the group to that market in 2001 to 13.7% in 2010 (Figure 4).

Another product category whose share in the U.S. textile market imports increased in the study period (from 15.4% in 1994 to 20.4% in 2015) is the manufacture of knitted and crocheted fabrics and articles (1730). Figure 5 illustrates the export differentials in that category for Mexico and its competitors in the U.S. market with respect to the group. Although Mexico increased the share of sales of 1730 products in its total sectoral exports (from 9.9% in 1994 to 19.7% in 2015), the graphs reveal an inferior performance compared to its competitors from the year identified as the break in the series (2000) onwards. While Canada and India exhibit, in turn, a loss of relative competitiveness, in the first case, starting in 2000 as a result of the liberalization of the North American market, and in the second case,

between 1994 and 2000, and again more sharply from 2008 onwards, China records net positive effects between 2001 and 2015 except for a single year (2008). The results are explained by the greater competitiveness of the Chinese economy based on intensive margins, i.e., underpinned by lower costs and lower prices for its products. The above makes it possible for the Asian country to go from controlling 8.6% of the U.S. market share in this category in 2000 to 33.9% in 2015 (Table 2). Consequently, the Chinese interactive effect is practically null throughout the series, and the competitive effect almost entirely explains its market gains.

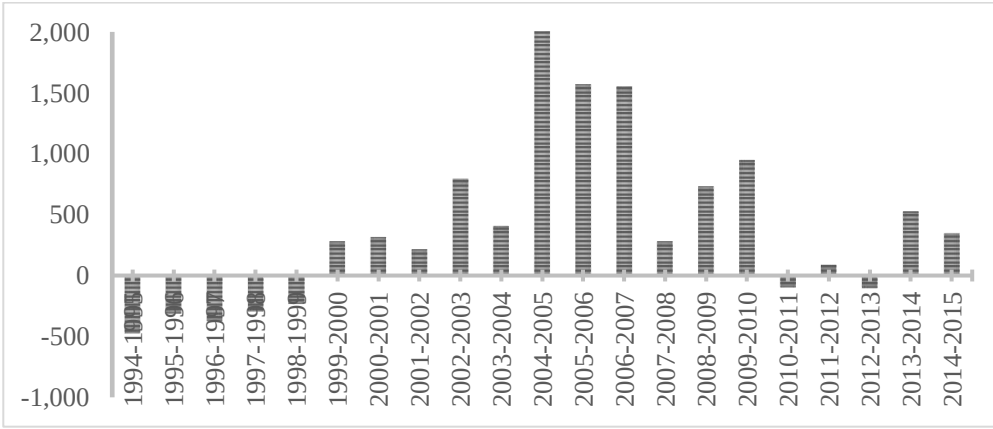

Figure 4.1: Apparel competitive effect

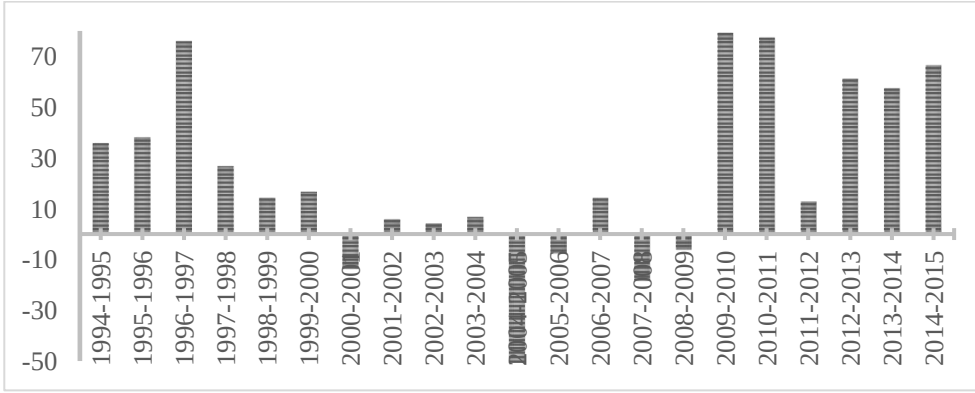

Figure 4.2: Apparel structural effect

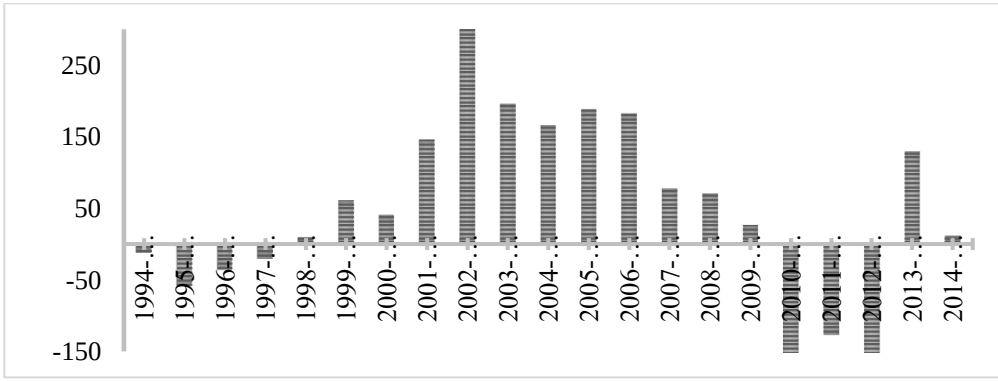

Figure 4.3: Competitive effect of textile articles

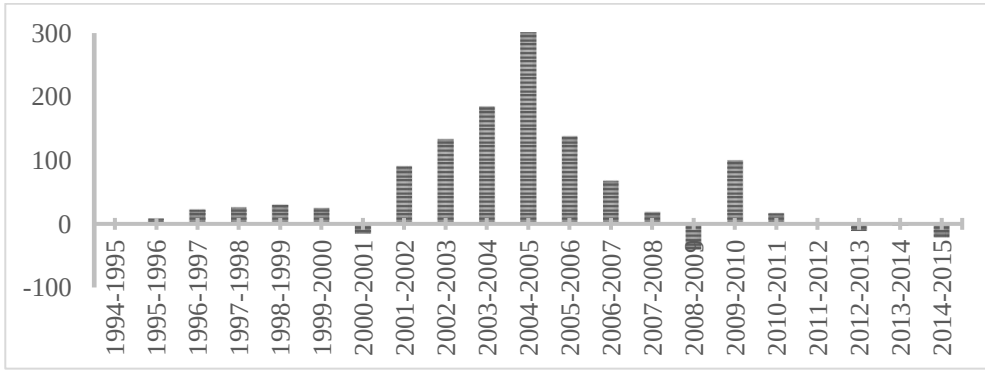

Figure 4.4: Structural effect of textile articles

Figure 4. Chinese exports of apparel and textile material articles to the U.S. market (millions of dollars)
Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

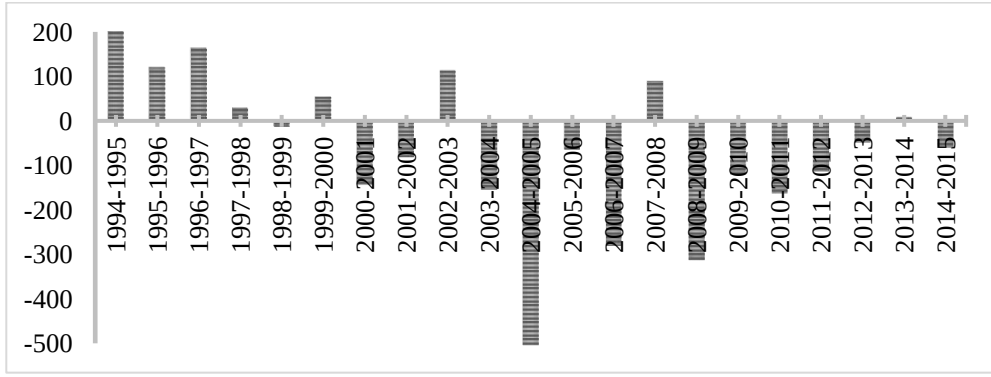

Figure 5.1: Mexico's net effect

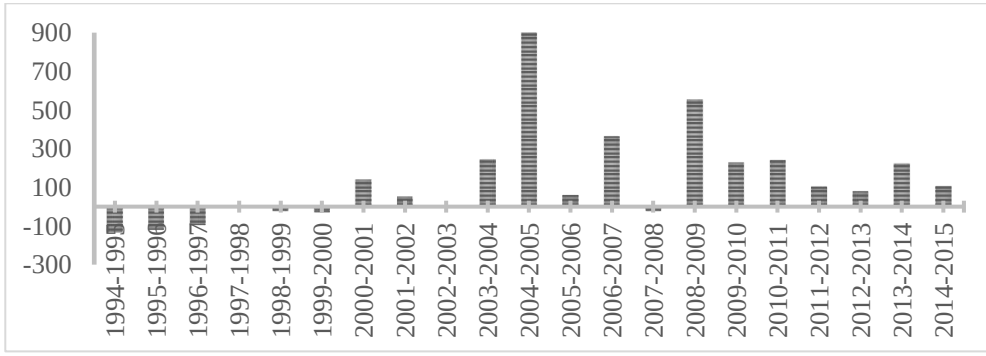

Figure 5.2: China's net effect

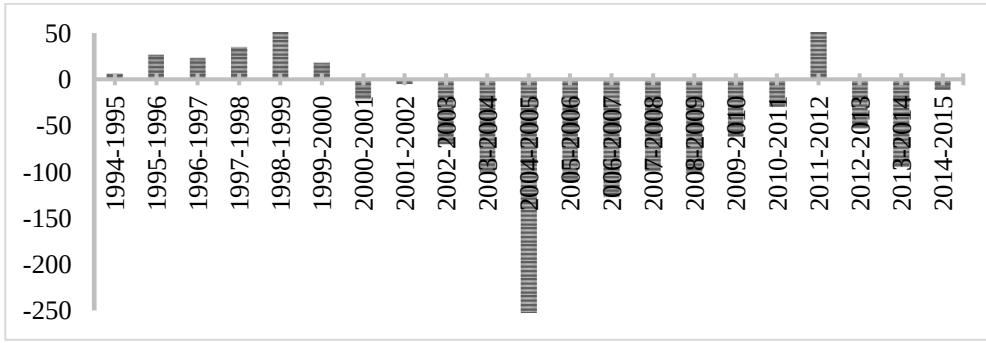

Figure 5.3: Canada's net effect

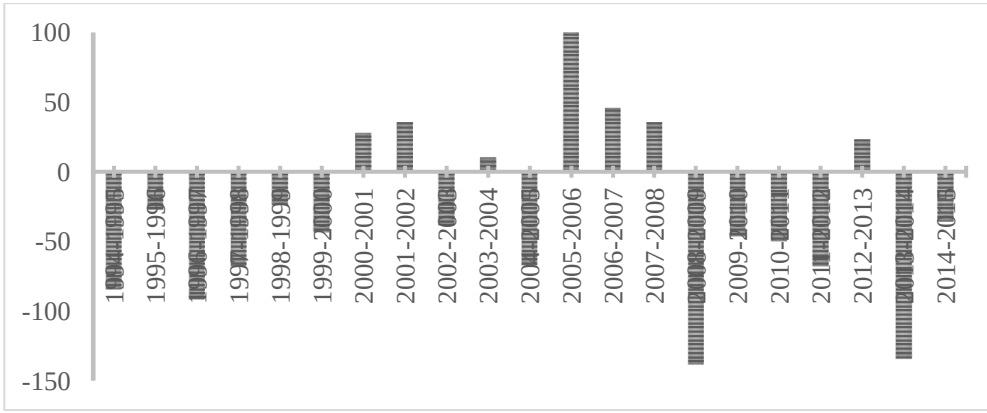

Figure 5.4: India's net effect

Figure 5. Export differentials of knitted and crocheted fabrics and articles to the U.S. market by country (millions of dollars)

Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

Concerning Mexican textile exports to the E.U. market, which in 2015 represented only 1.2% of the total of the sector, their structure is very volatile due to the lack of a long-term competitive strategy. In 1994, 40.4% of exports to this destination were merchandise of the category representing the sector's set of processed inputs (fabrics, yarns, and finishing of textile products, 171), whose manufacturing process is usually more technologically sophisticated and less organizationally fragmented, while 17. 3% of these sales are clothes (1810), an activity based on clothesmaking (assembly of parts), which as the final link in the chain usually has lower profitability margins and low barriers to entry, making it especially accessible to less developed countries (Rivera, 2004). By 2015, these percentages are reversed, displaying a regressive structural change in which exports of category 171 represent only 11.5% of the total of the sector for 61.4% of apparel sales. Proof of the absence of a specific export specialization pattern is also the values close to zero taken by the interactive effect in the main category of the activity (1810) as of 2006 (Figure 6).

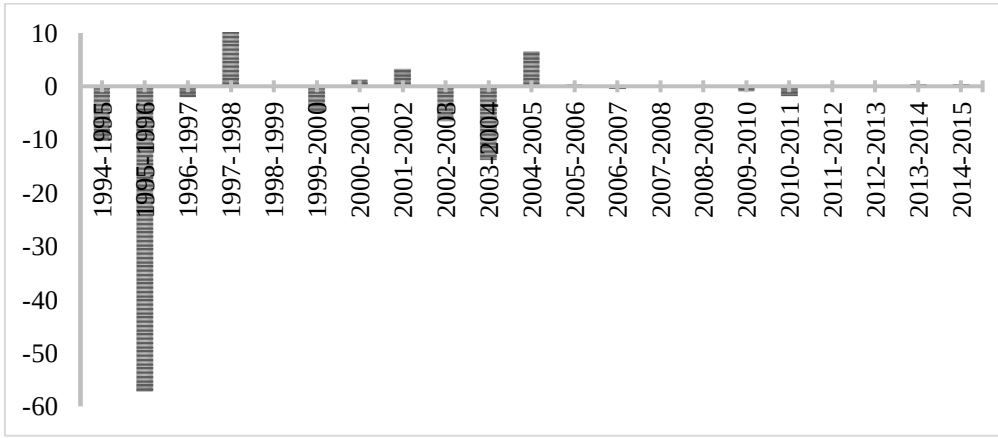

Figure 6. Interactive effect of Mexican apparel exports to the E.U. market. (millions of dollars)
Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

Figure 7 presents the export differentials of Mexican apparel exports and its main competitors in the E.U. market with respect to the reference group. The irregular performance of Mexican textiles in competitive terms results from the secondary role of the European market for Mexican exports, highlighting the possibility of a large market in which Mexico does not lag significantly behind its competitors. China again exhibits a highly competitive performance throughout the series, underpinned by high structural effect values that show export specialization in this type of product and market. However, while India displays an irregular performance with an incipient specialization as of 2010 in this

product category, Turkey demonstrates a permanent loss of competitiveness aggravated by its structural effect's negative values.

In sum, the results obtained from the analysis of the evolution of the profile of Mexican exports in the European market demonstrate a possible regressive structural change in which sales of clothing, originally destined for the U.S., are redirected toward the E.U. to the detriment of the consolidation of exports related to processed inputs. The above confirms both the secondary role of Mexican foreign trade to the European market and the absence of specific competitive strategies for the different sectors and markets. Nevertheless, and despite the irregular competitive performance of Mexican textiles in the E.U., the features of this market represent an opportunity for diversification and growth, as long as they are approached from the perspective of a long-term technological and organizational scaling up, whose objective is the export of high-end original designer clothes. Otherwise, overcoming competition from Asian countries, especially China, will be unfeasible.

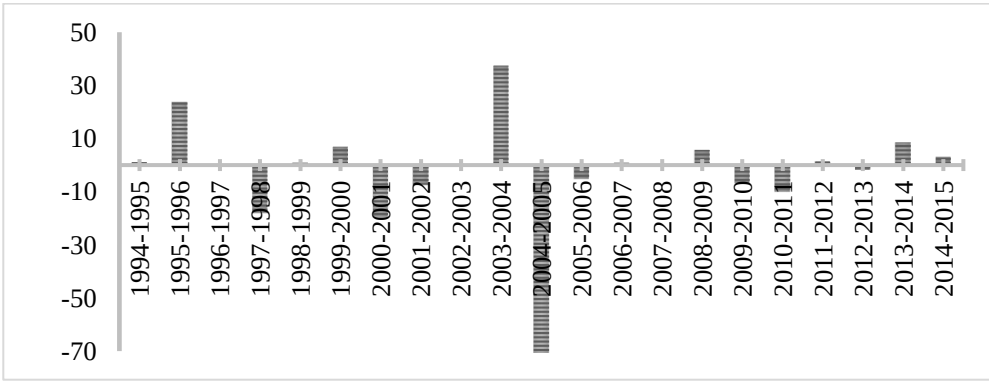

Figure 7.1: Mexico's net effect

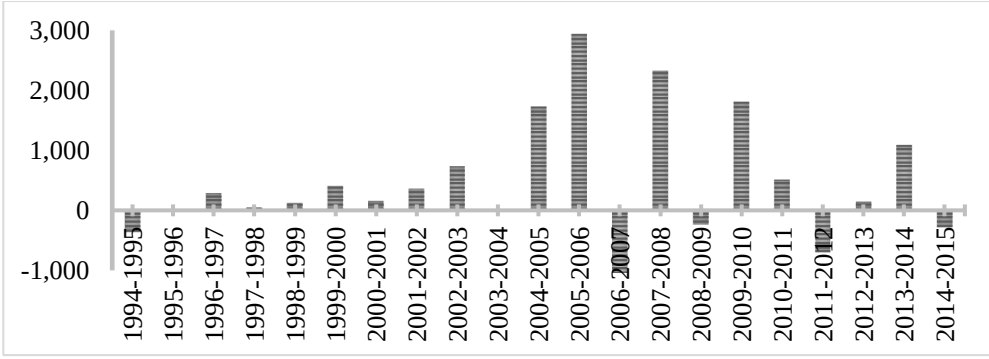

Figure 7.2: China's net effect

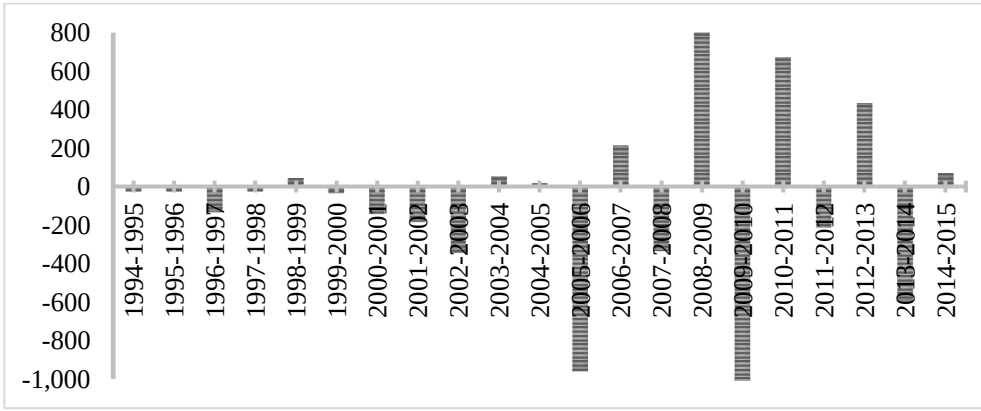

Figure 7.3: India's net effect

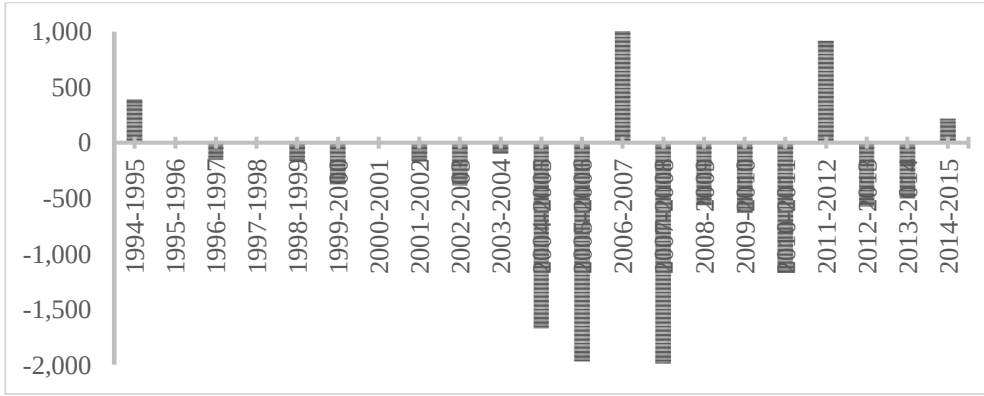

Figure 7.4: Turkey's net effect
Figure 7. Apparel export differentials to the E.U. market by country (millions of dollars)
Source: created by the author with data from the U.N. (2018), COMTRADE, downloaded with the WITS program of the World Bank

Conclusions

The export "success" of the Mexican textile sector since NAFTA came into effect took place within the framework of a strategy of global cost reduction by large North American transnational companies faced with competition from Asian countries and significant trade restrictions on the entry of their competitors into the U.S. market. The findings derived from the present work make it possible to locate a breakpoint in this positive trend in 2000 when the international liberalization of the industry began. The export "success" recorded between 1994 and 2000 under NAFTA is concomitant with a high concentration of

exports in apparel sales to the U.S. market by a small number of large producers supplying regional manufacturing networks. In this respect, the absence of a long-term competitive positioning strategy for the sector, and consequently of a technological and organizational scaling-up, resulted in a subsequent loss of external competitiveness and even in the process of sectoral deindustrialization in Mexico.

The application of the structural differential technique to Mexico's exports data and its competitors makes it possible to confirm that trade in the Mexican textile sector was based at all times on the exploitation of static competitive advantages such as geographical location, the existence of trade restrictions on competitors in the U.S., and the low wages of the country. Moreover, the exercises carried out help with the further examination of the lack of a significant qualitative structural change that, given the imminent disappearance of the quota systems in the industry, would make it possible to generate in response, capacities tending to develop substantive competitive advantages in alternative products of higher added value. Comparatively, the Chinese case is illustrative due to a competitive profile based initially—like Mexico's—on low costs and the sale of low-end clothing, which was nevertheless diversifying toward more sophisticated products in the direction of effective scaling up that led to the development of other types of capabilities and potential competitive advantages such as quality, access to inputs and transportation, design capacity, and the adaptation of new technologies, among others (Cárdenas & Dussel, 2007).

In terms of the theoretical and practical implications of the study, the findings present a competitive tendency of the Mexican textile sector toward the loss of market shares and, ultimately, a positioning of its exports in segments of low added value, in which competition from countries with a low level of development will increase and will be defined in favor of competitors with lower wage costs. This tendency implies, in turn, limited generation of positive externalities for Mexico and, in particular, the creation, if any, of low-skilled and poorly paid jobs. From this diagnosis, it is therefore necessary for the State to plan a comprehensive productive and foreign trade strategy based on the concept of productive and technological scaling, which make possible the progressive development of capabilities with the medium and long term objective of competing in the high-end segments of the main markets, through the development of own brands.

From a theoretical perspective, the results found here also imply the failure of an orthodox economic model, based on indiscriminate trade openness and the concept of productive and commercial specialization, in turn based on competitive advantages determined by factor endowments, in the style of the traditional Heckscher-Ohlin explanatory models of foreign trade. Likewise, following Krugman's seminal new theory of international trade (1980), several authors (Amsden, 2004; Dosi *et al*., 2015; Hidalgo *et al*., 2007) have pointed out the advantages of generating, as the Chinese example demonstrates, "new" competitive advantages, based on public policy measures focused on benefiting dynamic or nascent

products or sectors. In summary, in the context of the controversial renegotiation of NAFTA and in light of the results achieved here, the present moment can be interpreted as an opportunity for Mexico to adjust existing public policy guidelines in the direction of less vulnerable, more diversified foreign trade that will generate the jobs and economic growth that the country requires.

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