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Economic impact of Economic Partnership Agreement Mexico – Japan

– theoretical and empirical aspects –

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The impact on trade of the Mexico-Japan Economic Partnership Agreement (MJEPA)

Salvador Carrillo Regalado[1)]

Summary

The purpose of this study is to analyze the dynamics of the participation of Japan in the foreign trade of Mexico in order to verify if it shows some momentum derived from the Economic Partnership Agreement (EPA) since 2005, suggesting hypothetically that the EPA between Mexico and Japan will result in an increase on volume and diversity of goods exported by both countries, as well as boosting trade by large Japanese multinational firms.

Results suggest that the relative shares of Japan in the foreign trade of Mexico, observed in the last six years, do not support the hypothesis that MJEPA has a significant stimulus over the volume of bilateral trade. However, the information confirms, moreover, that the EPA entails a change in the product composition, creating a growing industrial and intra-firm trade between Mexico and Japan (and the US) as a result of the global organization of production that the MJEPA promotes. On the other hand, inter sectoral exports linked to the endogenous resources of Mexico, are highly concentrated in a very limited amount of food and mineral products, EPA still being insufficient to encourage greater diversification and dynamism of such exports.

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Introduction

The EPA evaluation is basically restricted to the commercial sector (imports and exports) therefore the information employed dates back to 2005, years before its entry into force, and even in some sections runs back until 1993 and, and up to 2014.

Regarding the measurement of the effect on trade volume, the methodology followed relative data on participation of Japan in the foreign trade of Mexico, both particularly and at aggregate levels for imports and exports; also taking into consideration some determinants of the context of the dynamics of the trade, such as: a) the condition of under or overvaluation of the exchange rate of the Japanese yen (JPY) and the Mexican peso (MXN) against the US dollar (USD); b) the definite influence of US over the structure of Mexico's foreign trade; and c) the growth rate of economic activity for both Japan and Mexico, measured by their GDP. Assuming, in general, that a relative increase in the rate of participation of Japanese trade with Mexico, could be active effect over the EPA, while a decrease means a lack of this effect; in any case, it is considered extenuated or influenced by any of the contextual factors cited.

In relation to the analysis of the types of traded products, the information is obtained from the main tariffs, identifying the different patterns of trade for Mexico and Japan. As one might expect Japanese exports to Mexico are comprised almost entirely of manufactured high-tech products, while Mexico exports this type of product to Japan which is made by the Japanese multinational companies, generating in turn an intra-industry type of trade, the most dynamic type of trade in the last seven years. At the same time, Mexican companies exported mainly primary products to Japan, accounting for 45 percent of exports to this country (food, mining and other raw materials) as well as some manufactured beverages.

The structure of this study is as follows: the first part reviews the background of the creation of the EPA, where the motivation or needs of both countries to agree to sign the agreement whose agreement is largely determined by the interest of expansion of large Japanese multinationals companies to markets in North American

countries are presented. Some theoretical aspects that enable to support the hypothesis are shown in the second part. An analysis of trade volume between the two countries is carried out in the third part in the fourth and final part the analysis focuses on the type of traded products.

One of the main results of the last part suggests that the expected impact of MJEPA on the increase in trade volume between the two countries has not been reached yet, even after ten years from its effect; however, the EPA itself has a decisive influence on the composition of exports and imports between Mexico and Japan.

1. Background of Mexico-Japan Economic Partnership Agreement (EPA)

Faced with the great cultural and geographical distance between Japan and Mexico as well as the minimum trade recorded between the two countries, compared to the size of their economies, it would seem unnecessary or at least not a priority to negotiate a free trade agreement at the beginning of the century. Therefore, what was it that prompted both countries to sign the EPA? From the Japanese perspective, Solis and Katada (2007: 279-301) suggests among other things, two important reasons: first, granting free access to the Mexican market to Japanese automotive industries, the electronic and other industries without excluding those seeking contracts with the Mexican government; thus the EPA, intended to avoid trade diversion effect due to tariffs and other protectionist measures (Viner, 1950) against exporters and Japanese investors; and the second reason, by political caracteristic, is that the Japanese government (through the Ministry of Economy, Trade and Industry - METI) felt that the EPA with Mexico would set precedents on various topics of negotiation that eventually could be considered for future FTAs with East Asian countries, under its agenda; for example, on the liberalization of services and rules of origin. Moreover, it should be added that a large undeniable advantage for Japanese companies which make direct investment in Mexico, is the free trade of their products to the United States and Canada and several other countries with

which Mexico has agreements.

The negotiations that led to the signing of the EPA have the results shown in the following sections.

1.1 Contracted advantages in MJEPA on the access to the Japanese market

According to the previous part, negotiations in the EPA on access to the Japanese market, were strongly focused on the primary sector, specifically in crops, livestock, fisheries, mining and processed foods for which Japan remained in average tariffs, but allowed the following business benefits, according to information from the Ministry of Economy of the Mexican government[2)]:

a) Mexico negotiated commitments of 796 tariff lines representing 99% of Mexican exports to Japan, giving access to the Generalized System of Preferences.
b) Japan immediately eliminated tariffs on 91 percent of the fractions (including, for example vegetables, fruit and tequila).
c) In addition, the EPA considered immediately tariff free about the main fishery products of interest to Mexico such as tuna, shrimp, octopus and crustaceans.
d) In the manufacturing sector, Japan implemented zero rate for the clothing and leather footwear sectors.

1.2 General expected benefits in MJEPA

a) To increase the potential export of Mexico in the Japanese market with preferential tariff access and to diversify foreign markets. On the grounds that Japan imports 60% of its food consumption.
b) It was anticipated that Mexican exports to Japan would grow with the EPA at a rate of 10% annually, reaching a value of 12 billion dollars by 2015.
c) Moreover, it was anticipated that Mexico would also export products of medium and high-tech electronics, appliances and automotive parts to Japan.
d) Attracting greater investment flows of Japanese companies.

2) Secretariat of Economy, Federal Government www.economía-snci.gob.mx/sic

2. Synthesis of some theoretical and empirical aspects of FTAs

Theories of International Economy based on comparative advantage, offer explanations about the pattern of international trade and its effect on national income distribution. While international trade in goods and international financial relations generates benefits for the participating countries, these benefits are in general but in particular, there are groups of producers who lose to international competition and can exert enough political pressure. In this matter, most countries have implemented a series of protectionist measures to impose economic and extra-economic obstacles on imported products, which are reduced or canceled by international treaties and bilateral, multilateral or regional block's agreements to promote free trade between the partner countries or participants, excluding the rest of the world.

In general, classical and neoclassical theories of International Economics (model of comparative advantage of David Ricardo (1817), the Heckscher Ohlin (1933) and other theoretical development as Samuelson (1971) and Ronald Jones (1971)) were built on the assumption that free trade and the validity of markets to the perfect competition ensure overall greater welfare of nations. The most general principles of these theories is that countries have different economies, with different skills, different technical capabilities and unequal endowments of productive resources. This leads to specialization, low prices of goods traded and diversification of the availability of goods. In this way mutual benefits between countries that participate in trade (Krugman and Obstfeld, 1995) are shared.

In general, classical and neoclassical, approaches only account for a part of international trade due to the simplification of assumptions of the models. Trade that meets the comparative advantage is an exchange of property belonging to various industries and sectors of the economy; it is a global trade inter industry. However, at least about four decades ago, an important part of the trade flows of goods do not respond to the comparative advantages between countries but to the advantages of economies of scale developed by large multinational companies, with enough capacity to influence international prices, so that they are recognized as monopolistic

or oligopolistic. Theoretically, international trade due to economies of scale is expected to occur more frequently among countries with similar relative endowments of factors (particularly, of capital and skilled labor), since both would be able to produce similar goods of the same industry, although the difference by the monopolistic competition leading to economies of scale. Large company monopolists operate with highly technical manufactured products and integrate production and markets in two or more countries. Thus, these countries tend to be net intra industrial exporters or importers (Ibid, 1995: 158-160).

Overall, intra-industry world trade exists prior to the decade of the seventies of the twentieth century, but this trade intensifies dramatically with the advent of the era of information technology and network communication, which provides technical support to the information economy of globalized production, particularly from the eighties (Castells, 1999: 93-176). Thus the global localization of production of large multinational companies intensifies specialization between regions and countries obtaining benefits from economies of scale, which implies an intensification of trade flows between host countries of multinational subsidiaries that manufacture products and components. Thus, in several developing countries such as Mexico, Brazil or China, its trade balance presented a major intra trade industrial manufacturing record, compared to the traditional inter sectorial trading.

However, whatever the type of exchange, both require economic liberalization on other obstacles as well as to win guarantees for foreign investment, which is achieved by FTA. In this sense, both governments and experts in the evaluation of agreements on economic partnership agree that their effects are favorable to growth and economic welfare, and that they enhance competition, increase the volume of trade, mobilize capital and inputs, improve quality and productivity, increase management efficiency and promote technological innovation. The EPA in particular, extend liberalization and clauses that go beyond the coverage of FTA, some of which might be more relevant than tariff reductions, such as the liberalization of direct investment in the partner countries, cancellation non-tariff barriers; protection of intellectual property rights and industrial standardization (Abe, 2007: 4).

In this regard Abe (2007) assesses the impact of agreements and FTAs that

Japan had signed with Mexico, Singapore and Malaysia until 2006, using the Computable General Equilibrium Model and concludes that corporate profits and the expected positive impacts on welfare, estimated by simulation models, support the acceptance and rapid growth that FTAs have had in different regions of the world. Other studies that have applied these models to different countries also come to similar conclusions. For example, Cheong (2005) and Cheong and Cho (2007) indicate some studies applied to Asian countries with the same results; Schiff and Winters (2003) demonstrates the profit potential for member countries of FTA; Scollay and Gilbert (2001) provides positive effects for the world economy with the implementation of FTAs, calculating that the trade creation effects outweigh those of the trade diversion. This chapter will address only aspects relative to comercial activity and its assessment in the context of MJEPA.

Overall, this allows us to ask for the particular case hypothetically, that the EPA between Mexico and Japan will result in relatively significant increase in the volume and diversity of goods exported by both countries, revitalizing further intra sectoral trade by large Japanese multinational firms.

3. Participation of Japan in the External Trade of Mexico, 1993-2014

This part begins with some methodological apreciation in order to objectively assess the effect of MJEPA relevant to trade. On the one hand, it is convenient to calculate the dynamism of exports and imports, in relative terms; that is, using rates of trade participation rather than growth rates of the market value in order to obtain a net effect of the inertial factor of economic trends in both countries and the world (increasing or decreasing) assuming that the net effect may be attributed, at least partially, to the expected potential of MJEPA. Methodologically, the purpose is to eliminate the effect of present trend on both national economies in long-term periods. On the other hand, inflationary effects of price exchange rate of the peso and the yen against the dollar must be considered, measuring for under or over valuation of both currencies, verifying the type of interference in exports and imports outside the

expected effects of the EPA.

In regard to the analysis of commercial participation rates Mexico-Japan, an explanation of commercial relationship between Mexico and the United States is included as a manner of context, considering that, it is a big factor in the relative trends that keeps Mexico in relations to any another country. Due to its vicinity and the development differences, the dominance of the United States in trade and foreign investment in Mexico is still valid, even though in the last two decades a marked reduction has been observed, allowing trade diversification with other countries.

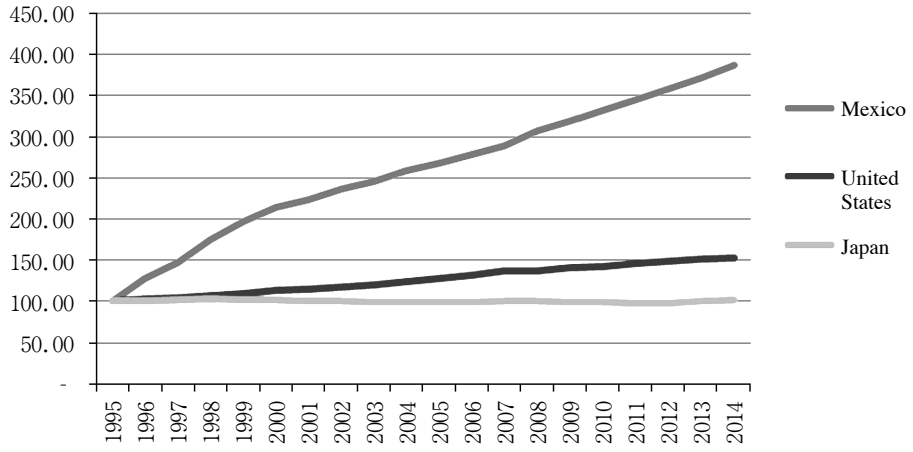
3.1 Estimation of the real exchange rates of the Mexican peso and the Japanese yen

Continuously, it is presented the information about the evolution of prices and exchange rates of both countries as well as under or over valuation of the currencies of Mexico and Japan against USD. **Figure 1** shows the price indexes of Mexico, the US and Japan, the last country is characterized by a predominance of inflation values close to zero; United States values of annual inflation rates of 2.28 percent, resulting in an index of 153 percent in 2014 (base year 1995 = 100); In turn, Mexico was characterized by very different levels of inflation until 2000 and even though the country achieved subsequent stabilization, it is expressed by a price index of great magnitude, coming together at 387 percent in 2014. In general, these price patterns impact the exchange rates with respect to a currency of special interest in international exchange.

Figures 2 and **4** show the comparison of the exchange rates of MXN and of JPY against USD in current or nominal and real or deflated terms. The real exchange rate is calculated using the price indexes of Mexico (MX), Japan (JP) and United States (USA) to estimate ratios: MX / USA and JP / USA, which, in turn, are used to deflate the nominal exchange rate. Furthermore, the criteria for choosing the base of year price index is the one that records a high and atypical devaluation against USD; for the case of Mexico is in 1995[3)] and for Japan in 1998, considering

3） Mexico devalued its currency 85 percent from December 1994 to the same month in 1995, as a result of a financial crisis.

Figure 1
Comparative price indexes 1995-2014 (Base 1995 = 100)
(In percentages)



Source: Elaborated by the author based on data from the following organizations: for Mexico, INEGI, price indices; United States, INEGI, based on figures from the Organization for Economic Cooperation and Development (OECD) and the International Monetary Fund (IMF); Japan, INEGI, based on figures from the International Monetary Fund (IMF), International Financial Statistics.
http://www.inegi.org.mx/sistemas/bie/ Date of consultation:06/18/2015.

that in those particular situations, an adjustment is forced in order to achieve a balance in the currency market and therefore are useful as starting points. Although, anyway, for such a long period of analysis, more than one option to choose the base year could be arranged.

In particular **Figure 2**, represents an increasing real exchange rate (deflated) and above the nominal rate throughout the period of study (1995-2014), clearly revealing that the Mexican economy tends structurally to be dependent on currency overvaluation to cope with favoring international trade as imports and international payments. The variation in the magnitude of this overestimation can be observed in **Figure 3**, estimating an annual average of 18 percent over the current exchange rate.

Meanwhile, in **Figure 4**, the real exchange rate of the yen (JP / USD) showed a downward trend, with two periods of overvaluation, 1995-2000 and 2009-2012[4)]

4) Both sub-periods are predetermined by the choice of base year (following the criteria noted above) but if a lower price of the yen is chosen as a base year, the line depicting the real exchange rate would shift downward in Figure 4, indicating a constant undervaluation of the yen against the dollar (USD) throughout the period of study.

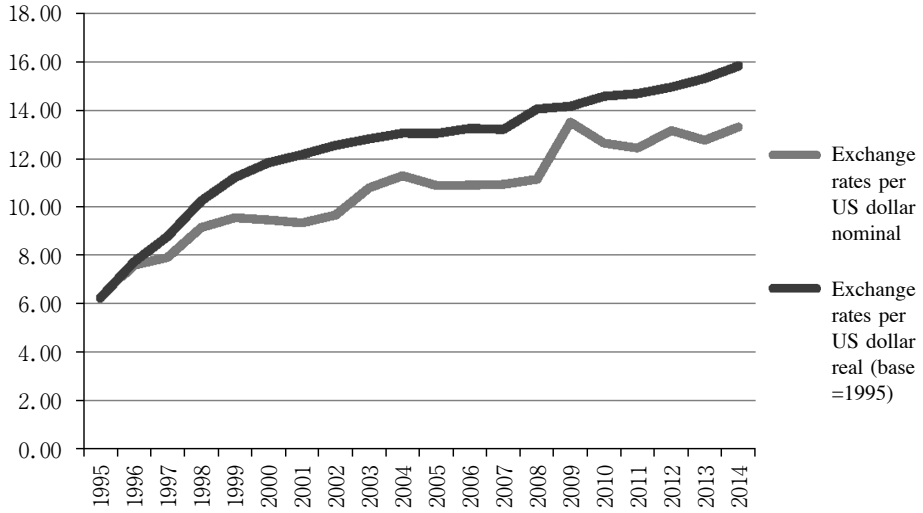
averaged 13.7 percent annually; and three sub-periods of sub valuation, two in the middle and other at the end, between 2013 and 2014[5] averaging a real depreciation of 8 percent annually (**Figure 5**). Consequently, this implies that MXN is overvalued in real terms more than JPY against USD, because Mexico has persisted in a policy of overvaluation against USD for more than four decades; although the pace of overvaluation of MXN has slowed since 2001, due to the success of the Bank of Mexico to contain inflation rates similar to those of the United States values.

Finally, in a sense, when the yen depreciates against the dollar or for the years in which the relative differences of overvalued exchange rates are magnified for Mexico and Japan, a transfer effect could be generated, increasing the value of MXN relative to the value of JPY.

Figure 2

Exchange rates per US dollar (USD) nominal and real, 1995-2014

(Pesos per US dollar)



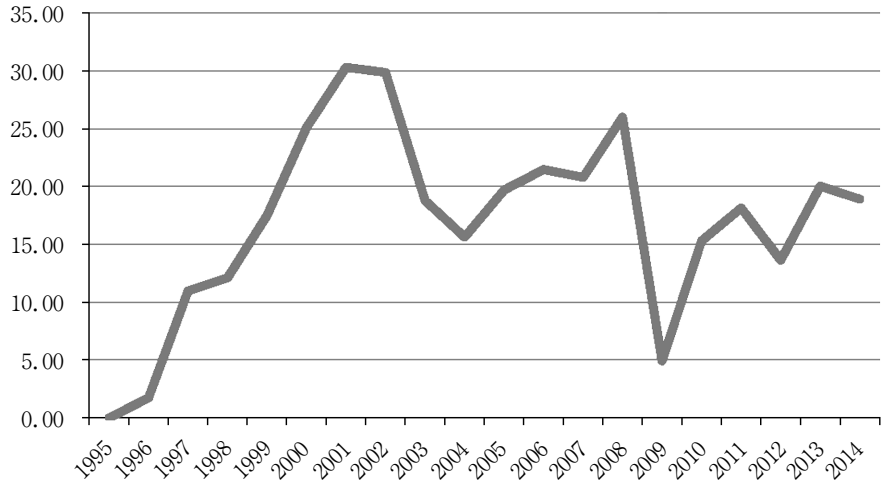
Source: Elaborated by the author with data from the organizations cited in Figure 1. Exchange rates data obtained from: www.oanda.com/currency/historical-rates.

5) The real depreciation of the last sub-period may extend throughout 2015, due to the current stage of international strengthening of USD.

Figure 3

Rate of overvaluation of Exchange rates peso/dollar

(Percentages with respect to the nominal rate)

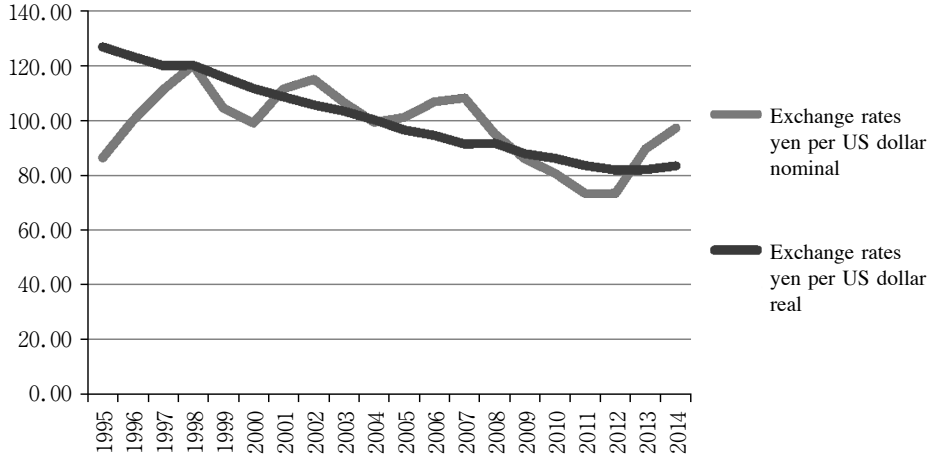


Source: Elaborated by the author with data from the organizations cited in Figure 1. Exchange rates data obtained from: www.oanda.com/currency/historical-rates.

Figure 4

Exchange rates yen per US dollar nominal and real,1995-2014

(Yen per one dollar)

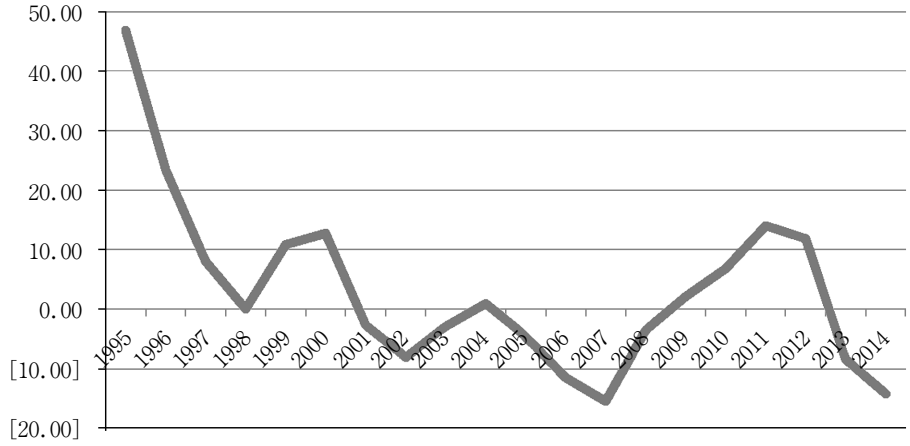


Source: Elaborated by the author with data from the organizations cited in Figure 1. Exchange rates data obtained from: www.oanda.com/currency/historical-rates.

Figure 5

Rate of over or undervaluation of Exchange rates yen/dollar

(Percentages with respect to the nominal rate)



Source: Elaborated by the author with data from the organizations cited in Figure 1. Exchange rates data obtained from: www.oanda.com/currency/historical-rates.

3.2 Participation of Japan in the foreign trade of Mexico

After analyzing these monetary details, it is proceeded to show the trade data of Mexico. First, a preliminary analysis of information from the economic relationship between Mexico and the US is important because of its decisive influence on the structure of the relationships of Mexico with respect to any other country. **Table 1** explains the following behavior: i) from the beginning of NAFTA (1994) until 2000 the commercial participation rate approaches 80 percent with respect to the total trade of Mexico with the world, showing that this treaty has encouraged the commercial exchange considering that, between 1993 and 1994, the participation rate was 75 percent; b) after 2000, the rate gradually reduces until 2008, establishing an approximate 64 percent share of the total world trade that Mexico records and remains until 2014. Definitely, this reveals that the trade decentralization of Mexico respect to United States has declined and there are several factors to influence this. Quite possibly, an important factor to consider is the growing dominance of China in both world trade and attracting foreign investment; for example, relocation to this country and others in the Asia Pacific region of the emerging industry of electronic assembly that was settled in Mexico, thus affecting trade flows of products, parts

and components for this industry. On the other hand, they may also have influenced the abundant trade agreements that Mexico has signed with several countries; however, this even should prove empirically and analyze in more detail, particularly the use and effectiveness of these treaties and international agreements.

Regarding the participation of trade between Mexico and Japan (**Table 1** third column, see also **Figure 6**) it is showed a downward trend between 1993 and 2000, recording a minimum of 2.1%. This observed result is associated with two phenomena: first, coincides with the first sub-period of overvaluation of JPY[6] (**Figure 5**); second, it should also be attributed to the strong commercial dynamism arisen between Mexico and the United States over the same period. Subsequently, the trend of commercial relationships with Japan begins with a growing phase (2001-2008) until reach to a second largest value of 3.3%, tendency, also associates with the decreasing trade relationship of Mexico with the United States and the undervalued price of JPY against USD.

In subsequent years (2009-2014) for which one might assume a phase of consolidation of MJEPA, the trend of bilateral relations in trade is relatively decreasing, with a participation rate that reaches lower values between 2013 and 2014 (2.5 percent, see third column of **Table 1** and **Figure 6**). Note that this result occurs in a context in which the rate of commercial participation of Mexico with the United States is constant and JPY goes through a real overvaluation sub-period (from 2009-2012) to another real undervaluation (2013-2014). Even relative data about Mexican exports to Japan from the Ministry of Finance of Japan (fourth column of **Table 1**)[7], trends in the participation rate of trade between Mexico and Japan, shows the same downward trend in the last six years, with a minimum of 2.8 percent in 2014, despite the fact that the undervaluation of JPY reaches 14.3 percent in the last year.

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6) Thus increasing the Japanese imports values to Mexico, whose values is almost four times that of Mexican exports to Japan.

7) Including direct exports to Japan and those effectuated during stops at ports in other countries (particularly the United States). The latter exports are not registered or allocated by Mexican customs since 2002. Consequently, exports to Japan registered by the Secretariat of Economy of Mexico (with data from Bank of Mexico and Mexican IRS) tend to be lower than those registered by the Ministry of Finance of Japan (about 25 percent).

Table 1

Trade participation rates: Mexico – United States (MX-USA) and Mexico – Japan (MX-JP) relative to the total trade of Mexico with the world (MX-World), 1993-2014*

(In percentages)

Year	MX-USA / MX-World	MX-JP / MX-World	MX-JP / MX-World**
1993	75.2	4.0	
1994	75.9	4.1	
1995	79.1	3.2	
1996	79.9	3.0	
1997	80.1	2.5	
1998	80.8	2.2	
1999	81.0	2.1	
2000	80.7	2.2	
2001	77.7	2.7	
2002	75.4	3.2	
2003	74.5	2.6	2.8
2004	71.6	3.1	3.3
2005	69.3	3.3	3.6
2006	67.6	3.3	3.6
2007	65.5	3.3	3.5
2008	64.1	3.1	3.4
2009	64.1	2.8	3.1
2010	64.0	2.8	3.1
2011	64.1	2.7	2.9
2012	63.8	2.7	3.0
2013	63.9	2.5	2.8
2014	64.5	2.5	2.8

Notes: * Trade consists of the sum of bilateral imports and exports MX-USA and MX-JP and of the total trade of Mexico with the world, MX-World.
** Includes total exports to Japan: direct exports and those effected during stops in ports.

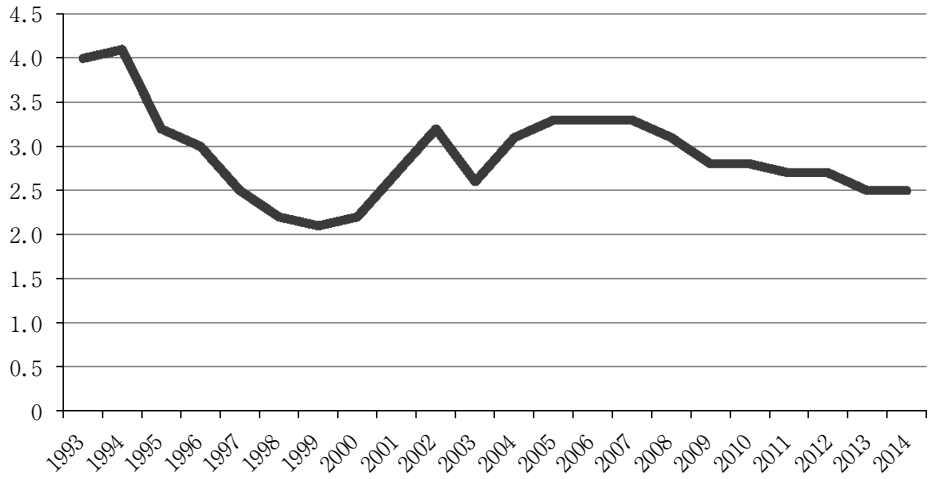
Sources: 1/ Secretariat of Economy with data from the Bank of Mexico; 2/ JETRO, with data from the Ministry of finance of Japan:
http://www.customs.go.jp/toukei/srch/indexe.htm?M=23&P=1

Notes about the Secretariat of Economy: 1. Data is subject to change, in particular the most recent. 2. The data of exports for the period 1993 to 2001 follows the criteria of buyer country. From 2002, the criterion used is that of country of destination (in consequence, the exports from Mexico to Japan are undervalued about 25 percent from 2002 afterwards, due to the exports effectuated during stops at ports in United States or other countries).

Figure 6

Mexico – Japan trade participation (MX-JP) relative to the total trade of Mexico with the world (MX-World), 1993-2014

(In percentages)



Source: Elaborated by the author with data from the organizations cited in Table1.

Figure 7

Annual variation of GDP of Mexico and Japan, 2000-2014

Price values from 2005 (In percentages)

Notes: The original values of USD taken from 2005.

Source: World Development Indicators (WDI) with data from the National Accounts of the World Bank and data on National Accounts of OECD.

http://datos.bancomundial.org/indicador/NY.GDP.MKTP.KD?page=2 (accessed on July 26th, 2015).

In summary, it can be concluded that the expected consolidation of bilateral trade under the EPA has yet not achieved yet (particularly for the period 2009-2014) and a relative decline is observed instead.

Another relevant factor intervening in the context of the trade between Mexico and Japan in the last six years, is definitely the financial crisis in the United States. Manifested in a global crisis in 2009 and, particularly, the minimal Japanese economic growth after 2010, which circumscribes economic crisis in 2011 and 2014 (see **Figure 7**) represents discouraging context for tMJEPA in the commercial matter. However, the Japanese foreign direct investment to Mexico holds a very favorable performance in this period but has not been a consistent engine of relative growth on bilateral trade with Japan, but rather, with markets in other countries where products are sent to, particularly the United States.

3.3 Mexico-Japan Trade Balance, 2003-2014

Both exports and imports between Mexico and Japan are also expressed in participation rates relative to the corresponding total flows that Mexico carries out with the world[8] (see **Table 2** and **Figure 8** and **9**). Regarding the export rates from Mexico to Japan, overall, it can be observed that levels don't exceed 1.6 percent of total exports of Mexico, while imports show relatively higher values, between 4.4 and 6 percent of total imports. The trends of the shares of both exports and imports, as expected, obey the trend already described for the sum of both flows. That is, a growing trend in exports recorded since 2003, achieving the highest value in 2008 (1.59 percent) and sustaining maximum imports percentages between 6 to 5.3 from 2004 to 2008. Then both trends reversed from 2009, in coincidence with the depression impact of the financial crisis in the US, particularly as it was already said, on the Japanese economy. Consequently, the commercial benefits of the EPA for Mexico were insufficient to reverse the downward trend in the relative values in bilateral exports and imports during the period 2009-2014.

In short this implies, on one hand, the exports to Japan, were relatively less dynamic than those experienced by the total non-oil exports that Mexico has carried out with the world in the last six years. As will be seen, within the group of the top 50 tariff products, the amount of exports of minerals (particularly raw silver) and cars

8) Total exports of Mexico do not include the export of oil, to avoid abrupt movements in the short term making it difficult to describe variations in participation rates.

to Japan has decreased.

For the case of imports (**Table 2** and **Figure 9**) the highest rates in the study period has achieved rapidly since 2005, when the EPA just barely started, making it difficult to attribute this dynamism to an effect of the EPA. However, it is possible to associate some of this effect at least for the years 2006-2010, for which participation rates reaches up levels of about 5 percent of total imports by Mexico. Finally the subsequent decline of the share of imports from Japan is, at least partially, a result of lower relative growth in imports of cars and their parts and accessories (see **Table 3**) upon the growing establishment of Japanese assembly plants and their suppliers in Mexico, established in the states of Guanajuato and Aguascalientes.

Overall, the trends do not support the hypothesis that MJEPA is a strong stimulus to bilateral trade. Even the relative decline observed in the Mexico-Japan trade in the past six years, produced an absolute decline in 2013 in response to the weak growth of the Mexican economy (**Figure 7**). Particularly, Mexican exports to Japan registered in 2014 reached only 4,299 million dollars (according to the Ministry of Finance of Japan; **Table 2**) and, are very far from the 12,000 million expected in 2015 by the Mexican negotiators of the EPA.

As for the Mexico-Japan trade balance, it recorded a deficit streak during the first decade of the EPA (2005-2014) of an average of 12,068 million dollars annually (**Table 2**) particularly due to the import requirements of inputs, parts and products of the automotive and electronic industries as well as imports of other manufacturing industries. In general, a significant proportion of the imports growth from Japan is associated with direct investments from this country, that is, with the establishment of Japanese manufacturing plants. In turn, Japanese multinationals in Mexico, largely target their exports to the US market and other markets in America and to a lesser extent to Japan, which contributes to Mexican trade surplus with the United States, but maintains a large deficit with Japan; which means that this deficit is mainly the result of economic triangulation of Japan with the United States through its plants installed in Mexico.

According to the analyzed elements we can conclude that this section indicates

Table 2

Trade between Mexico and Japan: Participation rates in non-oil exports and total imports of Mexico, 2003-2014

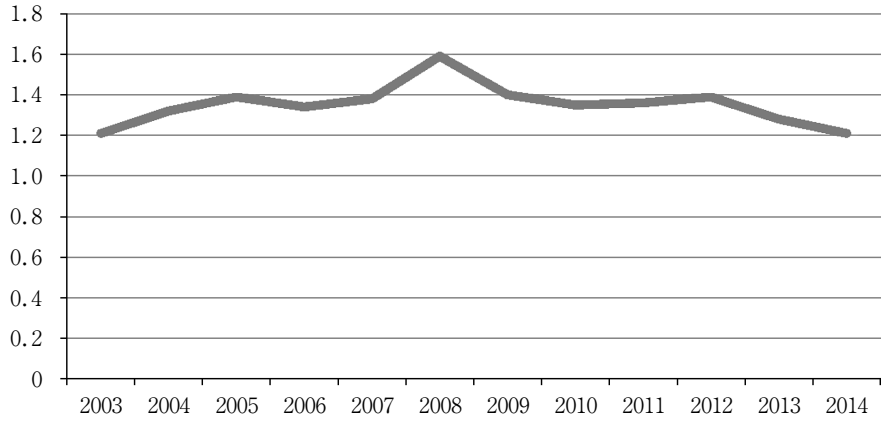
Year	Exports to Japan		Imports from Japan		Balance of Trade MX-JP
	Millions of dollars	Participation rate (%)	Millions of dollars	Participation rate (%)	Millions of dollars
2003	1,770.14	1.21	7,595.10	4.45	–5,825.10
2004	2,171.18	1.32	10,583.40	5.38	–8,412.22
2005	2,541.75	1.39	13,077.80	5.90	–10,536.05
2006	2,824.17	1.34	15,295.20	5.97	–12,471.03
2007	3,150.79	1.38	16,343.00	5.80	–13,192.21
2008	3,816.73	1.59	16,282.50	5.28	–12,465.77
2009	2,789.49	1.40	11,397.11	4.86	–8,607.61
2010	3,469.57	1.35	15,014.70	4.98	–11,545.13
2011	3,974.71	1.36	16,493.50	4.70	–12,518.79
2012	4,403.12	1.39	17,655.20	4.76	–13,252.08
2013	4,242.97	1.28	17,076.12	4.48	–12,848.34
2014	4,299.04	1.21	17,544.60	4.39	–13,245.56

Notes: 1. Both exports and imports are expressed in customs values and reflect the Exchange rate variation between Yen/Dollar and of the Peso/Dollar, respectively.
2. Data is subject to change, in particular the most recent.
Sources: 1. JETRO, Ministry of Finance of Japan, consulted for data about exports to Japan, equivalent values in yen of recorded Japanese imports from Mexico,
http://www.customs.go.jp/toukei/srch/indexe.htm?M=23&P=1
Annual exchange rates employed for USD/JPY, see:
http://www.oanda.com/lang/es/currency/historical-rates/
3. Secretariat of Economy, with data from the Bank of Mexico and SAT; National Institute of Geography and Statistics, Economic information Bank (BIE). Consulted on: June 8th, 2015. Sources consulted to obtain the values of the total imports and non-oil exports of Mexico with the rest of the world.

that MJEPA implementation after ten years in its effect, has not met the expectations, particularly in terms of export trade volumes, albeit indirectly contributes significantly to exports to the United States, particularly in the automotive industry[9]. In a broader perspective it should be considered that the EPA has brought a significant increase

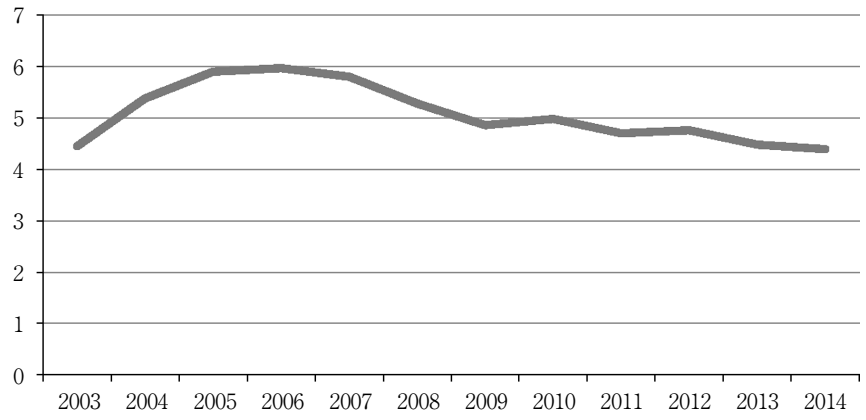
9） As well as the domestic market. According to the Mexican Association of Automobile Dealers, from January to July 2014, forty percent of the national market for new cars is comprised by the four major Japanese car makers (Nissan, Toyota, Honda and Mazda). http://www.amda.mx/images/stories/estadiscos/coyuntura/2015/ventas/1511ReporteMercadoAutomotor.pdf

Figure 8
Participation rates of total non-oil Mexican exports to Japan
2003-2014



Source: Compiled with data in Table 2

Figure 9
Participation rates of total Mexican imports from Japan
2003-2014



Source: Compiled with data in table 2

in direct investment for Mexico, reaching 7,851 billion dollars for the years 2007-2014. Mexico received between 2012 and 2014, 3.66% of total Japanese FDI that concentrated mainly in the automotive manufacturing industry, including a huge amount of Japanese auto parts suppliers. In other words, the EPAs of Mexico with a developed country, which transfers funds and production of highly technical processes, involves a peculiar structure and dynamics of trade flows, subject to the

needs of large companies and industrial clusters and, it should be recognize that trade flows are directly subject to fluctuations derived from the economies of Japan and Mexico. Moreover, while the prevailing undervaluation of the yen between 2013 and 2014, ingeneral that would have favored exports, in reality, export stagnation has been observed instead for Mexico in recent years.

4. Traded products

The interpretation of information on the products exported by both countries is carried out according to the discussion in the theoretical section and according to the characteristics of the economies of each country. This will allow differentiating the trade flows of intra and inter sectorial products. Japan is, for instance, a highly technical country in its manufactures, but with scarce land resources and other natural resources; on the other hand, has several monopolistic multinational companies in the automotive, electronics and other manufactures with large amounts of capital. Instead, Mexico has few multinational companies, which belong to the processed food industries, production of raw materials, construction and services such as telecommunications; otherwise, Mexico is technologically dependent on industrially developed countries. This situation has contributed to the design of reforms of diverse nature (energy, labor, etc.) that result in legal adaptations to compete globally as a recipient of foreign direct investment; that is, as the recipient of investments that result in industrial plants and subsidiary companies, whose production, as already indicated is destined to exports and the domestic market, depending on the industrial sector. Japan benefits from the EPA with Mexico, by obtaining facilities and by investing in Mexico and therefore, introducing their products with greater economic benefits and legal guarantees. Consequently as a result of these differences in resources and capital mobility between Mexico and Japan, the following occurs.

Japanese exports to Mexico comprise basically manufactured products in a proportion of 97 per cent of said exports in 2011 (JETRO, with data from the Ministry of Finance); also these manufactured imports from Japan represent all of the top 50

Table 3

Main Japanese products imported by Mexico

(In percentages with regard to total imports)

GROUP OF IMPORTED PRODUCTS	2008	2010	2012	2014
Rolled steel products (and other manufactures of steel and plastic)	2.30	2.58	2.71	4.32
Machinery and mechanical appliances and parts. It includes bulldozers and ink printers (the latter predominates with 30% to 50% within its group)	6.89	6.12	6.02	8.08
Machinery and electrical equipment and parts (recording, sound, tv, radiotelephone, etc.)	9.83	11.74	10.31	11.74
Motor vehicles	8.26	6.98	5.01	6.88
Automotive parts and accessories	4.40	8.79	9.84	8.21
Parts, accessories, equipment, and optical, photographic and surgical instruments	4.96	3.98	8.14	4.30
Other (consoles and video games devices)	–	–	0.16	0.46
Equipment for Automotive and Auto Parts Industry (Imported under the Sector Promotion Program of Automotive and Auto Parts Industry / Ministry of Economy)	0.84	0.47	0.46	0.75
Sum of included tariffs	**37.48**	**40.66**	**42.65**	**44.74**
Total imports (see table 2)	100.00	100.00	100.00	100.00
Sum of 50 included tariffs (millions of US dollars)	6,102.1	6,105.1	7,529.1	7,849.4

Notes: These imported products account for the aggregate of the main fifty tariffs.

Source: Working Group on Foreign Trade Statistics, composed of The Bank of Mexico, INEGI, Tax Administration Service and the Ministry of Economy.

http://187.191.71.239/sic_php/pages/estadisticas/mexicojun2011/K9ppm_e.html Consulted July13th,2015

tariff exhibited in **Table 3** and, among them, about fifty percent could be considered a part of intra sector trade in 2014.

Moreover, the value of the top 50 tariffs of Mexican exports to Japan is shown in **Table 4**, adding to 71 percent of total exports in 2008 and 81 percent in 2014, indicating a growing concentration or specialization of export products to Japan, particularly of high-tech manufactured products, possibly by Japanese companies. According to this information, 45 percent of exports to Japan consists of primary products (food, fuel and raw materials, including raw silver) in 2008 and in 2014; manufactured beverages account for less than 2 percent of that share; finally, manufactures represented in **Table 4**, constitute 24.7 percent of exports to Japan in 2008 and 35 percent in 2014. This growth in manufacturing exports, definitely comes from the growing number of Japanese companies in Mexico as a result of

Table 4

Main Mexican products exported to Japan

(In percentages with regard to total imports)

EXPORTED PRODUCTS	2008	2010	2012	2014
Boneless beef	2.14	2.88	4.08	3.00
Pork	14.34	11.84	12.05	13.74
Bluefin tuna	1.48	0.64	1.17	2.95
Guts, bladders and stomachs of animals except fish.	0.44	0.46	0.34	0.52
Avocado (avocado)	2.58	4.00	3.77	4.53
Melon and watermelon	0.87	0.58	0.42	0.59
SUM OF MEATS AND FRUITS	**21.86**	**20.4**	**21.84**	**25.32**
Orange juice and grapefruit juice	0.6	0.55	0.79	1.22
Stout beer	0.35	0.36	0.42	0.29
Tequila	0.34	0.43	0.59	0.43
SUM OF MANUFACTURED BEVERAGES	**1.29**	**1.34**	**1.80**	**1.94**
Salt for human use and consumption or livestock uses	4.75	5.40	3.50	2.77
Other minerals and concentrates (fluorspar, copper, zinc, molybdenum and silver)	8.72	4.55	3.56	5.85
Raw silver	10.11	7.06	6.82	2.28
Crude oils	0	0	0	8.25
SUM OF MINERAL PRODUCTS	**23.58**	**17.01**	**13.88**	**19.15**
Plastics (cellulose acetate without dyes and unplasticized).	4.01	3.66	1.81	1.88
Steel Manufacturing	0.05	0.14	0.87	0.93
Machinery and mechanical appliances and parts.	2.86	5.22	3.11	7.84
Machinery and electrical equipment and parts (recording, sound, tv, radiotelephone, etc.)	7.09	8.17	15.74	12.44
Motor vehicles	9.07	7.27	8.1	6.22
Automotive parts and accessories	0.12	1.64	1.34	2.34
Furniture, parts for seats	0.09	0.30	0.07	1.91
Other articles of electronics and chemical industries	1.41	3.11	1.40	1.41
SUM OF MANUFACTURED PRODUCTS	**24.7**	**29.51**	**32.44**	**34.97**
Sum of the export value of the top 50 tariffs to Japan	71.42	68.25	69.94	81.37
Total export value to Japan (millions of dollars)	2,046.0	1,925.6	2,610.7	2,608.5

Note: The export values presented here are lower than those of the Ministry of Finance of Japan in Table 2, as shipments of goods destined to Japan stop at ports in other countries where products are traded, and therefore, subtracted from the total exports.

Source: Working Group of Foreign Trade Statistics, includying the Bank of Mexico, the National Institute of Statistics and Geography, IRS, and the Secretariat of Economy.
http://187.191.71.239/sic_php/pages/estadisticas/mexicojun2011/K9ppx_e.html
accessed on July13th, 2015.

the EPA; at the same time, it also noted that about 90 percent of the export manufacturing industry belongs to the high-tech sector and can be classified as intra exports by Japanese subsidiaries or of other countries.

Consequently, it could be stated that the EPA brings greater intra-industry and intra-firm trade, not only with Japan but also with other countries, as a result of the global arrangement of production, promoted by MJEPA.

In short, except for intra industrial manufacturing exports from Mexico to Japan, in general, exports depend on high-tech subsidiaries settled in Mexico. Inter sector exports linked to the endogenous resources of the country are highly concentrated in a very limited number of products, in particular: pork, avocado, raw silver (which numbers have declined sharply), beef, salt, mineral (fluorine, copper, zinc, etc.) and oil (recently included). The rest of the products have a marginal participation. Consequently, the EPA is not sufficient to encourage greater diversification and dynamism of exports by Mexican companies.

Conclusions

1. Overall, the downward trend in the relative shares of Japan in the foreign trade of Mexico, observed in the last six years, does not support the hypothesis that MJEPA represents a significant stimulus to the volume of bilateral trade. This is true despite a presumably greater consolidation of the EPA, particularly regarding the tariffs and the improvements in the business environment. However, this observation is mediated by depression of the Japanese economy characterized by negative growth rates in 2011 and 2014, which probably prevented to generate a more dynamic bilateral trade, i.e. above the average of the total trade by Mexico.
2. The EPA brings a change in the distribution by type of product, generating a growing intra sectoral trade between Mexico and Japan (and the US) as a result of the global organization of production and encouraged by MJEPA.
3. Moreover, inter sectoral exports linked to the endogenous resources of Mexico, are highly concentrated in a very limited amount of food and mineral products,

therefore, the EPA is insufficient to encourage greater diversification and dynamism of local exports.

4. Mexico shows an overvaluation of the peso / dollar exchange, very consistent on the long-term, which has strengthened imports but hindered the development of national exports. In this regard, the growth and dynamisms of Mexican exports to Japan basically depend on Japanese multinationals (and from other countries) established in Mexico.
5. Japanese investment in Mexico made through major automotive companies and other industries, responds to a global location of production that allows for a greater access to regional markets; also gaining advantages like economies of scale and lower labor costs per unit. These investments lead to a process of intensification of intra sectoral trade flows between host countries of multinational subsidiaries, resulting in triangulations of international trade in goods, industrial parts and components. Namely, this process is described as follows: first, the needs of Japanese industrial plants are associated with strong imports of products and supplies; afterwards, these Japanese industries, spend substantial part of their production to the United States and other countries, facilitated by the EPA or NAFTA and other agreements where Mexico is subscribed. This triangulation explains, at least in part, the low rate of Mexican exports to Japan and, accordingly, strong trade deficits of Mexico, averaging 12 billion dollars annually during the first decade of the entry into force of the EPA.
6. Consequently the EPAs of Mexico with a developed country, which transfers capitals and highly technical production processes, implies a peculiar structure and dynamics of trade flows, subjected to the needs of large companies and industrial clusters; at the same time, these trade flows are directly subjected to the fluctuations of the US market and the growth rates of the economies of Japan and Mexico. In this regard, although the undervaluation of the Japanese currency prevailed during 2013 and 2014, in theory, it should have favored exports from Japan to Mexico; but, in practice, trade stagnation was observed instead.

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