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Impacts of the Japan-Mexico EPA on Bilateral Trade*

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Abstract

This paper examines the impacts of the Japan-Mexico EPA on bilateral trade by using two different types of information, trade statistics and the EPA utilization rate. Using trade data, we found that Japan's exports of built-up cars, auto parts, base metals, electrical machinery, precision machinery, and ballpoint pens to Mexico increased sharply. We also found that Japan's imports of live animals and products, leather, and footwear with leather from Mexico increased significantly. These are some of the products that are protected by the respective governments. Using the results of a questionnaire survey of Japanese firms on their utilization of the Japan-Mexico EPA, the overall utilization rate was found to be rather low. However, the utilization rate for Japanese exports to Mexico was found to be high for iron and steel and transport machinery, which are the products most protected by the Mexican government. These findings indicate that the EPA has contributed to the opening up of Japan's and Mexico's protected markets. The questionnaire survey identified two problem areas for the EPA: one is the difficulty in getting information on the use of the EPA, and the other is the high cost of obtaining the certificate of origin for utilizing the EPA. These findings indicate the need for the government to provide information on the use of EPAs and to simplify the application procedures for obtaining the certificate of origin.

Keywords: effects of EPA, Japan-Mexico EPA, gravity model, and EPA utilization.
JEL classification: F13; F14

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1. Introduction

Japan-Mexico Economic Partnership Agreement (EPA) was enacted on April 1, 2005 after approximately two years of difficult negotiation. Both Japan and Mexico were eager to have a free trade agreement (FTA) for various reasons[1]. Japanese businesses were suffering from discrimination in the Mexican market vis-à-vis US and European firms, as US and European firms could export their products to Mexico without paying tariffs because of their FTAs with Mexico. Besides, Japan could not enter government procurement market in Mexico, because local firms and the firms from FTA members only are allowed to enter that market. Japanese businesses put a lot of pressure on the Japanese government to have an EPA with Mexico, and the Japanese government responded to a request from the business. Like the Japanese government, the Mexican government has various reasons for having an EPA with Japan. The Mexican government was eager to expand agricultural exports to Japan, as it was not able to increase agricultural exports to the US or the EU through its FTAs with these two countries/regions[2]. The Mexican government was keen on attracting Japanese foreign direct investment (FDI) in order to expand machinery sectors, especially automobile and electronics sectors. The Mexican government sought to achieve this objective by providing business-friendly environment such as free trade and investment environment through an EPA.

Japan-Mexico EPA has a comprehensive coverage including trade in goods and services, FDI, movement of natural persons, government procurement, cooperation, etc. As for the elimination of tariffs, Japan agreed to eliminate tariffs on all products excluding some agricultural products in ten years, while Mexico will eliminate tariffs on all products except some agricultural products, and busses and trucks with large engines in ten years. As to the sensitive products, Japan will liberalize imports of pork, frozen orange juice, chicken, and oranges under tariff-quota system, while Mexico will eliminate tariffs on iron and steel products in ten years and use tariff-quota system for the liberalization of automobiles.

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[1] Strictly speaking EPA and FTA are not identical. EPA is generally considered as more comprehensive than FTA, under which tariffs on trade involving FTA members are eliminated, while EPA includes not only FTA but also other measures such as trade facilitation, investment liberalization and facilitation, and economic cooperation. However, in this paper we use these two terms interchangeably.

[2] See Espach (2006) for the discussions on Mexico's FTA strategy.

Against the backdrop of these developments, we attempt to investigate the impacts of Japan-Mexico EPA on bilateral foreign trade. FTAs are expected to result in expansion of bilateral trade (so-called "trade creation effect") as tariffs on bilateral trade are eliminated. However, expected trade creation effect may not be realized if free trade scheme under FTAs is not used. In order to benefit from FTAs, an exporting firm has to obtain a certificate of origin (COO), which certifies the product under question is produced in that country. Obtaining a COO is not free and the cost of obtaining a COO includes cost for gathering information on the origins of inputs and others, which are necessary for filling out the application form. If a COO is issued by a third party such as the Chamber of Commerce in the case of Japan, the firm, or applicant, has to pay for the application fee.

We analyze the impacts of Japan-Mexico EPA on bilateral trade by adopting two different approaches. First, we examine the developments on bilateral trade before and after the enactment of Japan-Mexico EPA (Section 2). In this paper we examine Japan's exports to and imports from Mexico by using tariff information and international trade statistics at the product/sectoral level as well as at the aggregated level. Second, we examine the use of Japan-Mexico EPA by Japanese firms by utilizing the results of questionnaire survey (Section 3). For both approaches, we first conduct a descriptive analysis to capture a broad picture and then undertake an in-depth statistical analysis. After conducting these analyses in Sections 2 and 3, some concluding remarks are presented in Section 4.

2 Impacts of Japan-Mexico EPA on Japan's Trade with Mexico

At the end of the second year from the enactment, the Japan-Mexico EPA had a certain degree of positive impacts on trade, particularly on the export side, and investment, reflecting the introduction of an additional zero-tariff import quota for built-up cars under the EPA by Mexico[3]. Several important outcomes of the EPA beyond tariff removal are also revealed; for instance, possible participation in international bidding for contracts of government procurement and improved business environment through bilateral consultations at the Committee for the Improvement of the Business Environment under

[3] See Ando (2007) for the detailed analysis on the impacts of Japan-Mexico EPA as the preliminary post evaluation.

the EPA such as improved security at the international airport, improved and efficient immigration controls in Otay at the US-Mexico border, and newly initiated direct flight between Narita and Mexico City via Tijana where many affiliates of Japanese firms are located. On the other hand, satisfactory effects of tariff reduction on the import side are quite limited, and they are observed only for a small number of agricultural products at that time. Recognizing the objective of an EPA is to promote foreign trade involving EPA members, it is important to investigate the impacts of Japan-Mexico EPA on Japan's imports as well as exports vis-à-vis Mexico at the timing of many more years since the enactment. Due to the data availability, we descriptively investigate trade patterns until 2008 and attempt to examine econometrically the impacts of the EPA on Japan's exports to and imports from Mexico.

2.1 Descriptive Analysis

A. Exports

The major items of Japanese exports to Mexico is machinery and base metals (Table 1)[4]. While exports in terms of value were the largest in the electric machinery industry (HS85) until 2006, exports in transport equipment (HS86-89), precision machinery (HS90-92), and base metals (HS72-83) industries in particular have rapidly increased since the enactment of the EPA in 2005. As a result, exports in the transport equipment industry have exceeded those in the electric machinery industry, with the largest share in total exports, since 2007. While Mexico is not so significant in terms of Japan's exporting partner, as suggested by low shares of Mexico in Japan's total exports in Table A.1, Japan has become a significant importing partner for Mexico, particularly in machinery products; Japan's exports account for more or less 10 percent of Mexico's total imports in electric machinery, transport equipment, precision machinery, respectively.

== Table 1==

Table 2 lists selected products subject to tariff reduction due to the EPA, most of

[4] Table A.1 in the Appendix shows Mexico's shares in total Japan's exports and those in total Japan's imports at the industry level. Similarly, Table A.2 in the Appendix presents Japan's shares in total Mexico's exports and those in total Mexico's imports at the industry level.

which are categorized into the above-mentioned sectors. The table also presents their exports in terms of value and quantity from 2004 to 2008 as well as most-favored-nation (MFN) and EPA tariffs in 2008. Most of the major export-expanding products with tariff reduction by the EPA are motor vehicles (HS8703 and HS8704), motorcycles, and parts and components of transport equipment. In general, exports of built unit (BU) cars to Mexico are virtually prohibited, with MFN tariffs of 50 percent or 20 percent. The Mexican government, however, provided automobile manufacturers producing in Mexico with a zero-tariff import quota, equivalent to 10 percent of local production in the previous year in terms of units (see Table A.3 in the Appendix).[5] Therefore, Japanese automobile manufacturers with local production (namely Nissan, Honda, Toyota, and Mitsubishi) exported BU cars with an import tariff of zero percent within the quota.[6] In addition, under the EPA, a zero-tariff import quota for BU cars, equivalent to five percent of sales in the Mexican market in the previous year, is provided to Japanese automobile manufacturers, regardless of whether they produce locally.[7] As a result, some Japanese automobile manufacturers such as Mazda, Suzuki, Isuzu, and Subaru without local production obtain a zero-tariff import quota for BU cars under the EPA, though the quota is much smaller than that allocated to local producers. In the case of BU cars, the zero-tariff import quota under the EPA has direct and significant effects on Japan's exports to Mexico. Given the fact that out-quota tariff under the EPA is supposed to be phased out from the base rate of 20 percent or 30 percent to zero percent by April 1, 2011, further impacts of tariff removal on exports of BU cars are expected.[8][9]

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[5] A zero-tariff import quota means that the tariff is zero percent within the quota and at the level of the MFN tariff beyond the quota.

[6] Although Mitsubishi Automobiles does not have production sites in Mexico, it can utilize a part of the zero-tariff import quota that is allocated to DaimlerChrysler, with which it has a business alliance.

[7] The total amount of the zero-tariff import quota for Japanese automobile manufactures under the EPA in 2005F/Y (54,839 units) and 2006F/Y (56,585 units) is close to the total amount of zero-tariff import quota for Japanese automobile manufacturers with local production in 2005 (58,218 units) and 2006 (65,305 units).

[8] When the tariff quota system is introduced, lower import tariffs (in-quota tariffs) are applied to the imports within the quota, and higher tariffs (out-quota tariffs) are applied to the imports beyond the quota. In the case of FTA/EPA, FTA/EPA tariffs beyond the quota are usually set at the level of MFN tariffs.

[9] MFN tariffs on BU cars rose: although MFN tariffs on BU cars are currently 50 percent, they were 20 percent or 30 percent in 2003, depending on the types. In this case, a choice

== Table 2 ==

Interestingly, some products with EPA tariffs lower than MFN tariffs have rapidly increased in values as well as quantities, leading to large Japanese shares in Mexico's imports from the world. Such products include motorcycles (a cylinder capacity not exceeding 800cc) (HS871140) with 65 percent in terms of values and 76 percent in terms of quantity, trolley buses (HS870290) with 75 percent and 66 percent, sheets and plates of polarising materials (HS90012001) with 94 percent and 90 percent, and motor vehicles for the transport of goods (not exceeding 20 tons) (HS87042203) with 99 percent and 97 percent. In addition to these products, exports of ball point pens (HS96081099) have rapidly expanded with the tariff reduction.

B. Imports

Japan's imports from Mexico have steadily increased since 2005 when Japan-Mexico EPA entered in force. The major importing items are agriculture and fishery products (HS01-24 in Table 3) and mineral products (HS25-27) including salts (HS2501) and molybdenite (HS2613): the shares in total imports from Mexico in 2008 are about 20 percent and 14 percent, respectively. Note that the rise in the price of molybdenite, as a result of an increasing demand for mineral resources in international markets, is one of the factors that induce a significant gap between total mineral imports before and after 2005.[10] In addition to these sectors, footwear and umbrella (HS64-67) increased in the import share as well as the import value. It seems to be worth further investigating the changes in imports of those sectors to see the possible impacts of Japan-Mexico EPA, considering the actual reduction of tariffs induced by the EPA.

== Table 3==

Similar to Table 2, Table 4 lists selected products subject to tariff reduction due

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of phasing out tariffs has indeed had a positive aspect of securing the ceiling of tariffs, though the immediate removal of tariffs is still the first best choice.

[10] The import price of molybdenite in 2005 is 2.4 times that of 2004 (JETRO, 2006).

to the EPA, most of which are categorized into the above-mentioned sectors. The table also presents their imports in terms of value and quantity from 2004 to 2008 as well as MFN and EPA tariffs in 2008. Tariffs in parentheses indicate those applied under the tariff quota system, and EPA tariffs beyond the quota are usually set at the level of MFN tariffs. The major features of EPA tariffs for these products are classified into the following: i) immediate elimination of tariffs, ii) introduction of import tariff quota, iii) implementation of phasing out tariffs over four to eight years (for products in Table 4), and iv) exclusion from the list of tariff removal. These features suggest that a certain portion of agricultural imports has been liberalized through EPA negotiations. However, a complicated protection structure in MFN tariffs still remains in EPA tariffs such as price-differential tariffs, seasonal tariffs, and import tariff quota. If the administrative procedure is costly and preferential margin is small, actual utilization of EPA tariffs would be predictably low.

== Table 4 ==

The product with the largest share among agricultural imports from Mexico is pork; in 2008, the share of fresh, chilled, or frozen pork reaches as large as 40 percent of agricultural imports from Mexico. As Table 4 shows, imports have steadily increased since 2005 for fresh, chilled, or frozen pork in terms of both value and quantity; imports of fresh, chilled, or frozen pork in total for 2008 are 1.6/1.7 times those for 2004 in terms of value/quantity. Furthermore, Mexico's pork is likely to have increased its market share in Japan as is suggested by an increasing Mexico's share in Japan's imports from the world from four percent to seven percent. These imply that Japan's imports of fresh, chilled, or frozen pork from Mexico clearly increased absolutely and relatively.[11]

Such a relative and absolute increase in imports of pork seems to be realized as a result of the reduction of tariffs under the EPA. Japan introduced an import tariff quota

[11] Regarding the pork (HS0203), only about 20 countries are the importing countries for Japan. When we look at import values of pork (HS0203) from 2004 to 2008, around 80 percent of the imports consist of imports from the United States, Canada, and Denmark. Although the Mexico's ranking moves up from fifth to fourth largest country, there is still a significant gap in import values between the major three countries and countries from the fourth. There is a possibility of trade diversion for pork due to the Japan-Mexico EPA, but it is not clear at this moment if any.

for pork under the EPA, combined with a price-differential tariff; the amount of import quota in total (including other categories of pork) from the first to fifth year is 38,000t in 2005F/Y, 53,000t in 2006F/Y, 65,000t in 2007F/Y, 74,000t in 2008F/Y, and 80,000t in 2009F/Y. For fresh, chilled, or frozen pork, in-quota tariffs are i) the difference between 535.53 yen and a value for custom duty per kilogram[12] when an import value for the custom duty per kilogram is more than 53.53yen but not more than the value obtained by dividing 535.53yen by 1.022 (524yen) and ii) 2.2 percent when the value for the custom duty per kilogram is more than the value obtained by dividing 535.53yen by 1.022 (524yen), while out-quota tariffs are i) 482 yen/kg and ii) 4.3 percent (see Table 4 and Figure 1). Although a complicated tariff structure clearly remains for pork under the EPA, the tariff reduction induced by the EPA does contribute to expansion of imports from Mexico.

== Figure 1 ==

On the other hand, prepared or preserved pork (excluding ham, bacon, pressed ham, etc) is excluded from the list of tariff elimination, though their imports increased; the MFN tariff of 20 percent remains under the EPA. It indicates that while an increase in imports of fresh, chilled, or frozen pork can be interpreted as a consequence of the import tariff quota with EPA tariffs being lower than MFN tariffs, an increase in imports of prepared or preserved pork should not be interpreted as an effect of tariff reduction by EPA.

Beef has also grown in imports, with a fluctuation, since 2005. Indeed, Japan introduced an import tariff quota for beef under the EPA: the tariff within a quota of 10 tons is zero percent for the first and second years.[13] The rapid increase in imports of beef in 2005, however, may not be fully a consequence of the introduction of import tariff quotas, particularly in view of the small quota, but rather of the prohibition on the imports of U.S. beef due to Bovine Spongiform Encephalopathy (BSE), after which Mexico have surfaced as an alternative import source.

[12] A value for the custom duty per kilogram means an imported price per kilogram before an import duty is imposed.

[13] Tariff quota from the first to fifth year for beef is 10t in the first and second years, 3,000t in the third year, 4,000t in the fourth year, and 6,000t in the fifth year.

Sea urchins, fruit puree, and grapefruit juice are examples of products subject to phasing out tariffs under the EPA; tariffs on these products are supposed to be removed through 4, 8, and 8 times of annual reduction, starting from the standard rates, 7 percent, 21.3 percent, and 25.5 percent, respectively. In 2008, EPA tariffs imposed on sea urchins are about one-third of MFN tariffs, and those on fruit puree and grapefruit juice are half of MFN tariffs. Increasing value and quantity as well as increasing Mexico's share for sea urchins and fruit puree indicate that such tariff reduction under the EPA is likely to have positive impacts on imports of these two products. As for grapefruit juice, imports fluctuated with a big jump in 2005. The EPA may have played a role in exploring market entry of this product in Japan in 2005.

Typical commodities subject to the import tariff quota system other than meats in the agriculture sector are natural honey, banana, and frozen orange juice; in-quota EPA tariffs are zero percent, zero percent, and 12.7 percent, respectively, while MFN tariffs are 25.5 percent, 20 percnet/25 percent, and 25.5 percent. Among them, a significant increase in import value and the share is observed in frozen orange juice: imports in 2008 are 4.1/2.3 times those in 2004 in terms of value/quantity, and the Mexico's share in Japan's imports from the world increases from 2.5 percent to 8.7 percent or 8.3 percent. This absolute and relative increase would be a consequence of introducing an import tariff quota with an in-quota tariff of 12.75 percent (half of MFN tariffs) under the EPA since the preferential margin of 12.75 percent (= MFN tariff of 25.5 percent - EPA tariff of 12.75 percent) is large. Banana is special in the sense that it is subject to a combination of phasing-out tariffs, zero-tariff import quota, and seasonal tariffs under the EPA; in-quota tariff is zero percent, and out-quota tariff is to be removed through 11 times of annual reduction from the standard tariff rates of 20 percent (October to March)/10 percent (February to September), which are equal to the GSP tariff, rather than MFN tariffs (25 percent/20 percent).

As for manufacturing goods, leather shoes and leather prepared after tanning (bovine) are examples of non-agricultural products with an expansion of imports and introduction of zero-tariff import quota under the EPA: in-quota EPA tariffs for leather shoes and leather prepared after tanning are zero percent while EPA tariffs beyond the quota and MFN tariffs are 21.6 percent to 30 percent for leather shoes and 12.0 percent to 16.0 percent for leather prepared after tanning. Imports of men's cotton trousers also increased with EPA tariffs of zero percent and MFN tariffs of 9.1 percent. The tariff

reduction due to the EPA seems to have contributed to the increase in imports of these products.

2.2 Econometric Analysis

This subsection quantitatively examines the impact of Japan-Mexico EPA on Japan's exports and imports. More specifically, we attempt to investigate whether Japan's exports and imports have expanded as a result of trade liberalization through its EPA with Mexico, considering basic economic conditions/relationships such as distance, size of economy, and income level. For this purpose, we conduct gravity model estimation at aggregate level as well as sectoral/product level, with a particular focus on sectors/products mentioned in subsection 2.1, from the perspective of both Japan' trade and Mexico's trade.[14] As our sample pools data from 1990 to 2008, both pooled Ordinary Least Squares (OLS) (with White's corrected standard errors) and fixed effects/random effects model are applied to our estimation; The Hausman specification test is used to decide which model, fixed effect model or random effect model, to choose. Also, F test/the Breusch and Pagan Lagrange multiplier (ML) test is used to decide which model, fixed/random effects model or OLS, is more appropriate. Our sample for the analysis of Japan's trade consists of 41 countries listed in Table 5 as Japan's important trading partners with exports/imports of no less than 0.1 percent of Japan's total exports/imports in the period from 2004 to 2008.

== Table 5==

In addition to the gravity model estimation for Japan's trade, we also conduct similar analysis of Mexico's trade in order to examine whether its imports from Japan (i.e., Japan's exports to Mexico) and its exports to Japan (i.e., Japan's imports from Mexico) have expanded as a result of trade liberalization through the EPA from the perspective of Mexico. Our sample for the analysis of Mexico's trade consists of 23 countries listed in Table 5 as Mexico's important trading partners with exports/imports of no less than 0.1 percent of Mexico's total exports/imports in the period from 2004 to 2008.

[14] Although Japan's EPAs with Brunei and the Philippines entered into force at the end of July 2008 and December 2008, respectively, we do not include dummies for these two FTAs in the equation since the effective period is too short for our investigation period.

Before explicitly incorporating the possible effects of EPAs, let us capture the general trend of Japan's exports/imports, particularly those to/from Mexico. In order to examine whether its exports to/imports from Mexico (imports from/exports to Japan) are greater than the level explained by basic economic conditions, Mexico dummy is included in the following equation (1):

$$\ln(Trade_{Ji}^{t}) = \beta_0 + \beta_1 \ln(Dist_{Ji}) + \beta_2 \ln(GDP_i^t) + \beta_3 \ln(GDPPC_i^t) + \beta_4 Mdummy + \varepsilon, \quad (1)$$

where $Trade_{Ji}^{t}$ expresses Japan's exports to country i or its imports from country i in year t in real terms, $Dist_{Ji}$ distance between (capitals of) Japan and country i, GDP_i^t real GDP of country i in year t, $GDPPC_i^t$ real GDP per capita of country i in year t, and $Mdummy$ dummy for Mexico, which is one if the trading partner is Mexico and 0 otherwise. Data on trade are obtained from UN comtrade (online).[15] Note that the wholesale price index in the U.S. is used as a proxy for the deflator to convert nominal trade values into real terms. Data on the wholesale price index in the U.S., real GDP, and real GDP per capita are available from World Development Indicators 2009 (online),[16] and distance measures are obtained from the CEPII (centre d'etudes prospectives et d' informations internationals) website.[17] [18]

Similarly, the basic equation for Mexico is as follows:

$$\ln(Trade_{Mi}^{t}) = \beta_0 + \beta_1 \ln(Dist_{Mi}) + \beta_2 \ln(GDP_i^t) + \beta_3 \ln(GDPPC_i^t) + \beta_4 Jdummy + \varepsilon, \quad (2)$$

where $Trade_{Mi}^{t}$ expresses Mexico's exports to country i or its imports from country i in year t in real terms, $Dist_{Mi}$ distance between (capitals of) Mexico and country i, GDP_i^t real GDP of country i in year t, $GDPPC_i^t$ real GDP per capita of country i in year t, and $Jdummy$ dummy for Japan.

Table 6 presents our results of gravity model estimations with OLS, using

[15] See the website of UN COMTRADE (http://comtrade.un.org/).

[16] See the World Bank website for the World Development Indicators (http://publications.worldbank.org/WDI/). Data for Taiwan are obtained from the following website: http://eng.stat.gov.tw/mp.asp?mp=5.

[17] The CEPII distance database is available at http://www.cepii.fr/anglaisgraph/bdd/distances.htm.

[18] Summary statistics and correlation matrix are available upon request.

equations (1) and (2), for Japan's exports and imports and Mexico's imports and exports both at the aggregate level for 2004. Our results indicate that Japan has a larger (smaller) amount of exports to and imports from countries located closer to (farther from) Japan and countries larger (smaller) in economic size. Also, the coefficient for Mexico dummy for the analysis of Japan's imports and the coefficient for Japan dummy for the analysis of Mexico's exports are negative and statistically significant, suggesting that Japan's imports from Mexico in general tend to be smaller for their economic relationships, particularly before the enforcement of EPA.

== Table 6==

Tables 7 to 10 in turn present the results of the impacts of EPAs on Japan's trade at the aggregate, sectoral and product levels, based on the following equations:

$$\ln(Trade_{Ji}^{t}) = \beta_0 + \beta_1 \ln(Dist_{Ji}) + \beta_2 \ln(GDP_i^t) + \beta_3 \ln(GDPPC_i^t) + \beta_4 \ln(GDP_J^t) + \beta_5 \ln(GDPPC_J^t) + \beta_6 EPAdummy_J^t + \varepsilon, \quad (3)$$

where $EPAdummy_j^t$, dummy for the Japan-Mexico EPA being effective since April 2005, GDP_J^t real GDP of Japan in year t, and $GDPPC_J^t$ real GDP per capita of Japan in year t are added to the equation (1), and country dummy is excluded from the equation.[19] Since Japan has EPAs that entered into force by 2008 with Singapore (effective since November 2002), Malaysia (July 2006), Chile (September 2007), and Thailand (November 2007), dummies for these EPAs are also included in the equation when the effect of Japan's EPA with Mexico is examined.

== Table 7==

== Table 8==

== Table 9==

[19] Although Tables 7 to 10 include only the results of panel data analysis that are selected by the Hausman specification test, fixed effects model or random effects models, the results that are not selected are available upon request.

== Table 10==

Similarly, Tables A.4 to A.7 in the Appendix present the results of the impacts of EPAs on Mexico's trade at the aggregate sectoral level, and product levels based on the following equations[20]:

$$\ln(Trade_{Mi}^{t}) = \beta_0 + \beta_1 \ln(Dist_{Mi}) + \beta_2 \ln(GDP_i^t) + \beta_3 \ln(GDPPC_i^t) + \beta_4 \ln(GDP_M^t) + \beta_5 \ln(GDPPC_M^t) + \beta_6 EPA/FTAdummy_M^t + \varepsilon, \quad (4)$$

where $EPA/FTAdummy_M^t$, dummy for the Japan-Mexico EPA, GDP_J^t real GDP of Mexico in year t, and $GDPPC_J^t$ real GDP per capita of Mexico in year t are added to the equation (2), and country dummy is excluded from the equation. Since Mexico also has some more FTAs that entered into force before 2008, those with the U.S. and Canada (NAFTA) (effective since January 1994), G3 (January 1995), Chile (August 1999), EU (July 2000), and Central-America (March 2001) are considered as the form of EPA/FTA dummies.

Sectors examined on the Japan's export (Mexico's import) side are base metals (HS72-83), general machinery (HS84), electrical machinery (HS85), transport equipment (HS86-89), and precision machinery (HS90-92), which are of our interest, implied from the descriptive analysis. Products investigated are those at the HS four-digit level that correspond to products in Table 2 with no less than 20 exporting countries for Japan: rubber tires (HS4011), flat-rolled alloy steel (HS7225), parts for engines (HS8409), self-propelled bulldozers (HS8429), machine tools (HS8459), taps, cocks, and valves (HS8481), motor vehicles (HS8703), parts for motor vehicles (HS8708), optical fibers (HS9001), and ball point pens and other pens (HS9608).

On the other hand, sectors examined on the Japan's import (Mexico's export) side are live animals and products (HS01-05), vegetable products (HS06-14), products in food industry (HS16-24), mineral products (HS25-27), textile (HS50-63), and footwear

[20] Although Tables A.4 to A.7 include only the results of panel data analysis that are selected by the Hausman specification test, the results that are not selected are available upon request.

and umbrella (HS64-67), which are again of our interest, indicated by the descriptive analysis. Products investigated are pork (fresh, chilled, or frozen) (HS0203), molluscs (HS0307), natural honey (HS0409), fruit and nuts (HS0811), fruit juices (HS2009), leather (HS4107), and footwear with leather (HS6403); among products at HS four-digit level that correspond to the products in Table 4 (some are more disaggregated), those with no less than 20 importing countries for Japan are chosen in addition to pork, which is imported from only 17 countries in our sample but is a major importing product with a share of 40 percent in agricultural imports.

As the results of Hausman text show in Tables 7 to 10 and Tables A.4 to A.7, fixed effects model is selected for many more sectors/products than random effects model for Japan' trade, while random effects model is chosen for many more sectors/products for Mexico's trade. In addition, as the results of F test/ML test show, fixed/random effects model is more appropriate than OLS for all estimations. Therefore, we discuss our results using fixed/random effects model estimation that is selected by the Hausman specification text below.

Our results of gravity model estimation reveal interesting insights. The coefficient for EPA dummy at the aggregate level in the analysis of Japan's exports is positive and statistically significant. It indicates that the positive impact of EPA on Japan's exports to Mexico does exist at the aggregate level from the perspective of trade for Japan (Table 7).[21] In particular, base metals (HS72-83), flat-rolled alloy steel (HS7225), electrical machinery (HS85), transport equipment (HS86-89), motor vehicles (HS8703), parts for motor vehicles (HS8708), precision machinery (HS90-92), optical fibers (HS9001), and ball points pens (HS9608) are typical sectors/products that obtain a positive coefficient for Japan-Mexico EPA dummy with statistical significance for Japan's exports (Tables 7 and 8).[22] These results suggest that Japan's exports to Mexico of these sectors or products, among those with relatively many exporting countries, tend to have significantly expanded due to the tariff reduction by Japan-Mexico EPA.

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[21] The corresponding coefficient in the analysis of Mexico's imports is negative but insignificant (Table A.4).

[22] Among sectors/products with positive and statistically significant coefficients of EPA dummy in the analysis of Japan's exports, most of them are statistically insignificant in the analysis of Mexico's imports (Tables A.4 and A.5). It suggests that from the perspective of Mexico's imports, the effects of Japan-Mexico are still marginal for many sectors/products.

On the contrary to Japan's exports (and Mexico's imports), the coefficient for EPA dummy at the aggregate level is statistically insignificant in the analysis of Japan's imports and that of Mexico's exports (Table 9 and Table A.6). It implies that the positive impact of the EPA on Japan's imports from Mexico does not exist or it is not so significantly great at the aggregate level, regardless of whether it is from the perspective of trade for Japan or Mexico.

The coefficient, however, tends to be positive, particularly in the analysis at the product level. As Tables 9, 10, A.6, and A.7 show, sectors/products that obtain a positive coefficient for Japan-Mexico EPA dummy with statistical significance are live animals and products (HS01-05 for both Japan's trade and Mexico's trade), molluscs including frozen octopus and sea urchin (HS030 for Japan's trade), fruit juices including frozen orange juice and grapefruit juice (HS2009 for Mexico's trade only), leather (HS4107, OLS and random effect for both Japan's trade and Mexico's trade), footwear etc (HS64-67 for Japan's trade and Mexico's trade), and footwear with leather (HS6403 for both Japan's trade and Mexico's trade). These results suggest that Japan's imports from Mexico of these sectors or products, among those with relatively many importing countries, in particular, are likely to have significantly expanded due to the tariff reduction by Japan-Mexico EPA.

On the other hand, products of fruit and nuts (HS0811 for Japan's trade), mineral products (HS25-27 for Japan's trade), and textile (HS64-67 for Mexico's trade) are the examples of sectors/products that obtain a negative coefficient for Japan-Mexico EPA dummy with statistical significance. Given that they include some products showing an increase in imports with the tariff reduction by the EPA as discussed in sub-section 2.1, the trade is still below the level expected from basic economic conditions/relationships between Japan and Mexico, though it tends to grow. In other words, there is enough room to expand trade by further liberalizing trade under the EPA.

Note that the coefficient of EPA dummy in the analysis of pork, which is the product with the largest share among agricultural imports of Japan from Mexico, is statistically insignificant. As discussed in section 2, a complicated tariff structure is applied to pork. In addition, a large portion of pork in terms of values is subject to EPA tariffs of 2.2 percent (within quota) or 4.3 percent (beyond quota); given the MFN tariff imposed on the pork of this category is 4.3 percent, preferential margin is small. Moreover, as mentioned in footnote 11, around 80 percent of Japan's imports of pork are

from the United States, Canada, and Denmark. All of these facts may partially explain why pork does not have a positive coefficient of EPA dummy with statistical significance. Although the imports tend to grow, the trade expansion effect is not so significant when basic economic conditions/relationships are considered.

These observations suggest that the Japan-Mexico EPA has had a positive impact on Japan's exports to and imports from Mexico, particularly on specific products among those with EPA tariffs that are significantly lower than MFN tariffs, in the fourth year from the enforcement.

3. Utilization of Japan-Mexico EPA by Japanese Firms

Firms are required to obtain a certificate of origin (COO) in order to take advantage of preferential tariff treatment under an EPA/FTA. For some countries such as Thailand and Malaysia the government collects information on the use of preferential tariff treatment of traded products under FTAs, but for many countries including Japan the government does not collect such information. For these countries a survey of firms is a method for obtaining the information on the use of FTAs. On Japanese firms the Japan External Trade Organization (JETRO) conducts a survey of their overseas affiliates' activities on regular basis. In that survey questions on the use of EPAs are often included. To the best knowledge of the authors, this JETRO survey is the only publicly available information source on the use of FTAs by Japanese firms.

Our study uses the results of the questionnaire survey on the use of FTAs conducted jointly by the Research Institute of Economy, Trade and Industry (RIETI) and the Japan Chamber of Commerce and Industry (JCCI) in February 2008[23]. It was the largest survey of its kind and covered firms located in the Tokyo, Osaka, Nagoya, Kyoto and Kobe regions. A questionnaire was sent to 10,953 member companies of JCCI, of which 1,688 responded for the response rate of 15.4%. This survey attempted to discern the use of Japan's EPA with Mexico, Malaysia and Chile by Japanese firms. For our study we only examine the responses concerning the Japan-Mexico EPA.

[23] Takahashi-Urata (2010) provides the information on the survey.

This section examines the use of the Japan-Mexico EPA by Japanese firms. It further analyzes the characteristics of firms using or not using the Japan-Mexico EPA. Through this analysis we would like to identify the problems or obstacle in using the Japan-Mexico EPA, in order to provide policy suggestions for increasing the use of EPAs. We first conduct descriptive analysis on the use of the Japan-Mexico EPA for exports and imports by Japanese firms and then perform a simple statistical analysis of the determinants of the use of the Japan-Mexico EPA.

3.1 Descriptive Analysis of the Use of Japan-Mexico EPA by Japanese Firms

Out of 1,688 firms that responded to the RIETI-JCCI Survey, 189 and 50 firms indicated that they exported to and imported from Mexico, respectively. These firms are chosen for our analysis.

A. Exports

Table 11 shows some characteristics of the Japanese exporting firms using and not using the Japan-Mexico EPA. Out of 189 firms that exported products to Mexico, 53 firms, or 28 percent of total, used the Japan-Mexico EPA. Considering that a 2009 JETRO survey of Japanese firms operating in Mexico found that 41.3 percent of them benefited from the use of the Japan-Mexico EPA, our finding may indicate limited use of the Japan-Mexico EPA by Japanese firms[24]. Our observation may need qualification because of the differences in the timing of two surveys, our survey in February 2008 and the JETRO survey in July-August 2009. This is because the number of firms using EPAs is likely to increase with the passage of time as the firms learn to know about the EPAs.

== Table 11==

One observes differences in the size of the firms between those using and not

[24] JETRO (2009).

using the Japan-Mexico EPA. Comparison of average firm size in terms of employment, sales and paid-in capital shows that those firms using the Japan-Mexico EPA are larger than those not using it. Although a more rigorous analysis is needed, this casual observation is consistent with the finding from earlier studies such as Takahashi and Urata (2010). A large firm tends to use EPAs more than small firms, because large firms with abundant human and financial resources can afford the costs for obtaining COOs and because large firms may utilize COOs more effectively with large amount of exports compared to small firms with small amount of exports. Despite these differences in terms of average firm size and the use or non-use of EPA, a statistical test of the differences in means shows that these differences in firm size are statistically significant only in the case of size measured in paid-in capital. We will undertake a more rigorous statistical analysis to examine the impacts of firm size on the use of EPAs in a later section.

A comparison of the composition of the products, which the EPA using and non-using firms deal with, indicates that those firms exporting iron and steel and transport machinery tend to use the Japan-Mexico EPA. The compositional shares of iron and steel, and transport machinery for EPA using firms are 10.7 and 23.8 percent, respectively, which are significantly greater than the corresponding shares of 4.7 and 10.5 percent, respectively, for EPA non-using firms. These observations may be explained by substantial liberalization of iron and steel, and automobiles under the Japan-Mexico EPA as mentioned in the introductory section. Under the Japan-Mexico EPA, tariffs of 0~5 percent on steel products specifically for automobiles, electronic and electric appliances and capital goods under the PROSEC (Program of Sectoral Promotion) system were immediately eliminated. Concerning automobile imports, the Mexican government allowed foreign auto makers producing automobiles in Mexico to import automobiles without tariffs up to 10 percent of the number of automobiles produced in Mexico. This import system changed as a result of the Japan-Mexico EPA. Under the Japan-Mexico EPA, tariff-quota system, which is applied to automobile producers without production facility in Mexico, was introduced. Taking advantage of new exporting opportunities,

Japanese firms in these businesses used the Japan-Mexico EPA.

A substantial difference is observed concerning the presence of foreign affiliates in Mexico between EPA using firms and non-using firms. 17 percent of EPA using firms have affiliates in Mexico, while the proportion is notably smaller at 8 percent for EPA non-using firms. One may conjecture that a firm with foreign affiliates tends to use EPAs more actively compared to a firm without foreign affiliates, because such internationalized firm would have abundant information on the use and the benefits of EPAs.

The impacts of using the Japan-Mexico EPA on firms' performance were found to be limited. As shown in Table 12, 15 percent of the firms using the Japan-Mexico EPA are reported to have experienced an increase in export sales, while only 6 percent of the firms enjoyed an increase in profits. Although the reasons are not clear, 15 percent of the firms using the Japan-Mexico EPA saw the increase in costs. One possible reason for experiencing the increase in costs may be due to the costs incurred to obtain the certificate of origin. Indeed, 95 percent of the firms that indicated the problem in using the Japan-Mexico EPA claimed incurring costs for obtaining the certificate of origin as a problem Table 13). It should be noted that more than a half of the firms experiencing the problems in using the Japan-Mexico EPA felt that an increasing number of EPAs would cause the Spaghetti bowl effect. Approximately 15-20 percent of the firms indicating the problem in using the EPA noted the difficulty in getting information on EPA preferential tariff rates and on the use of EPAs. Relatively speaking, this problem of obtaining information appears to be faced by small and medium sized firms when compared to larger firms.

== Table 12==

== Table 13==

Useful information about the difficulty in using an EPA may be obtained from

opinions of the firms that do not use EPAs. Table 14 reports the reasons behind the Japanese firms for not using EPA. Three types of reasons may be found from the results. One is small expected benefits from using an EPA. Indeed, the most important reason, although the absolute level is rather low, for not using the Japan-Mexico EPA was limited trade volume with Mexico. Three firms, or 7 percent of the total responding firms, indicated small tariff preference from the EPA as a reason for not using the EPA. Another reason is the lack of knowledge about the EPA, as 27.9 percent of the responding firms indicated that reason. This problem seems more serious for SMEs than for large firms. The third group of reasons has to do with the certificate of origin. Here two kinds of difficulty are raised. One is difficulty in collecting the information, which is required to obtain the certificate of origin. Indeed, detailed information on the origins of parts and components used for the production of exported items has to be supplied for the issuance of the certificate of origin. Another difficulty is fulfillment of the requirement of the rules of origin, which has to be met to obtain the certificate of origin. Rules of origin generally differ among different products. Rules of origin for some products are very stringent, for example, as high local content is required to be recognized as local product. A closer look at the problem associated with obtaining the certificate of origin reveals that several firms consider benefits to be lower than the costs. The cost here includes cost of collecting necessary information, fees for the issuance of the certificate of origin and the cost of disclosing information on cost structure of inputs. Relatively speaking, the problem of costs seems more serious for SMEs than for large firms.

== Table 14==

B. Imports

The utilization rate of preferential treatment under the Japan-Mexico EPA for Japan's imports by Japanese firms is 58 percent, substantially higher compared to the corresponding rate of 28 percent for Japan's exports to Mexico (Table 15). A comparison

of the firm size for those using the EPA and those not using the EPA shows somewhat a mixed picture. In terms of employment size, the firms using the EPA are on average smaller than those not using the EPA. The opposite patterns are found in terms of sales and paid-in capital. Having discussed the relationship between the average size of the firms and the status of the use or non-use of the Japan-Mexico EPA, a statistical test of the differences in the means shows that the relationships are not statistically significant.

== Table 15==

Turning to the composition of products, which the firms are engaged in, we find that foods account for the largest share of 21 percent among the firms using the Japan-Mexico EPA. Considering that the tariff differential between the most-favored-nation (MFN) rate and the EPA rate is rather substantial for foods in the case of Japanese imports, the high share of foods for the firms using the Japan-Mexico EPA is consistent with our expectation. What may not be consistent with our expectation is relatively large proportion of the firms engaged in food imports that did not use the EPA. Indeed, seven Japanese firms in food importing business, or 40 percent of those in that business did not use the EPA. It is important to discern the reasons for not using the EPA.

One may find it strange to know that the firms dealing with machinery products used the Japan-Mexico EPA in their imports from Mexico because Japan's MFN rates are very low, if not zero, for these products. This apparent inconsistency can be explained by the way the questions are asked in the survey. A question on the products, which the firm deals with, is asked as a part of general firm profile. As such, this question does not reveal the products, which the firm exports or imports. This problem of lack of correspondence between the products, which the firm deals with, and the products, which the firm trades, is likely to be serious in the case of imports rather than exports. This is because a firm dealing with automobiles does export automobiles but does not necessarily imports automobiles. It may import auto parts including rubber tires and others, which may not

necessarily be categorized as automobile or auto parts.

Similar to the findings on exports, the firms using the Japan-Mexico EPA do not find its impacts substantial, as very small portion of the EPA using firms indicated that the EPA resulted in the increase in exports or profits (Table 16). Concerning the problem of using the EPA, greater proportion of small firms indicated facing the problem in comparison with large firms. In response to the question about the types of problems in using the EPA, several firms raised the difficulty in getting information on the use of the EPA and on the EPA tariff rates (Table 17). In addition, several importing firms pointed out the difficulty in coordinating with the exporter for the use of the EPA.

== Table 16==

== Table 17==

3.2 The Determinants of the Use of the Japan-Mexico EPA by Japanese Firms.

In the previous section we examined the characteristics of Japanese firms using the Japan-Mexico EPA using the results of a firm survey. The analysis revealed a number of interesting findings including that a large firm is likely to use EPA compared to small firms. This section undertakes a statistical analysis, in order to analyze the issue more rigorously.

A. Previous Analyses

So far only few studies have examined the factors that determine the use or non-use of EPAs. A lack of data availability precludes one from undertaking such studies. Takahashi and Urata (2009, 2010) examined the determinants of the use of EPAs by Japanese exporting firms. Takahashi and Urata (2009) analyzed the cases of Japan's EPAs with Singapore, Mexico and Malaysia by using the results of questionnaire survey conducted on the Japanese firms located in the Osaka-Kobe-Kyoto region in 2006, while Takahashi and Urata (2010) examined the cases of Japan's EPAs with Mexico, Malaysia

and Chile by using the results of a questionnaire survey conducted on the Japanese firms located throughout Japan in 2008. These studies disclose several common factors determining the use of EPAs by Japanese firms. First, a large firm in terms of employment, sales, and paid-in capital is found to be likely to use EPAs. This is consistent with the expectation because use of EPAs incurs costs such as application fee for obtaining the certificate of origin and the costs for collecting information necessary for obtaining the certificate of origin. Second, a firm that has close relationship with EPA partner countries in the forms of having an affiliate or having large volume of trade is found to use an EPA with that county. Utilizing the information on the sectoral activities of a firm, Takashi and Urata (2010) found that a firm exporting the products that are subject to high tariffs is likely to use an EPA. This is consistent with an expectation that a firm facing high tariff protection in its export destination is likely to use an EPA, in order to take advantage of tariff differential between the MFN rate and EPA rate.

Hayakawa et.al (2009) analyzed the issue for the affiliates of Japanese firms in six ASEAN countries (Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam) by using the result of a JETRO survey. Similar to the findings by Takahashi and Urata, they also found that the affiliate size is an important factor in that a large affiliate tends to use EPA compared to a small one. They also found that a high tariff environment induces an affiliate to use EPA. It is noteworthy that affiliates in Singapore use EPA actively, while those in the Philippines and Vietnam do not. They argue that the differences in the cost of obtaining a certificate of origin are a major reason for these differences in the EPA usage. Cost of obtaining a certificate of origin is low in Singapore thanks to efficient administration, while cost of obtaining a certificate of origin is very high in the Philippines and Vietnam due mainly to an inefficient system of issuing the certificate of origin.

B. An Analysis of the Determinants of the Use of Japan-Mexico EPA

Following the previous analyses, we undertake an analysis of the determinants of the use of the Japan-Mexico EPA by Japanese firms in their exports to Mexico by

applying a probit estimation[25]. The dependent variable is a binary variable, which takes unity if a firm uses the Japan-Mexico EPA and zero if it does not. The explanatory variables include the firm size and the products, which a firm deals with. The firm size is measured by three different indicators, employment (EMPL), sales (SALE), and paid-in capital (CAPI). We expect the estimated coefficients of these firm size variables to be positive, because obtaining the certificate of origin incurs 'fixed' costs, for which large firms can deal with more easily compared to small firms.

The variables on products include the following ten categories, iron and steel (IRON), general machinery (GENM), transport machinery (TRAM), electric machinery (ELEM), textiles (TEXT), chemicals (CHEM), sundries (SUND), foods (FOOD), and others (OTHE). Recognizing that Mexico imposes high tariffs on machinery products, especially transport machinery, we expect positive signs on machinery products in the case of the use of the EPA for Japan's exports. In addition to these variables, we include a variable (AFFI) indicating the ownership of foreign affiliates in Mexico. The expected sign on AFF is positive as a firm with foreign affiliates in Mexico is likely to be able to take advantage of preferential tariff, thanks to its vast experiences in bilateral trading activities.

The results of the analysis for the use of the EPA for exports are shown in Table 18. As expected, the firm size measured in terms of employment (EMPL), sales (SALE) and paid-in capital (CAPI) is found to have positive impact on the use of the EPA but the coefficients are not statistically significant. The estimated coefficient on ownership of foreign affiliate in Mexico (AFFI) turns out to be positive, as expected, but the coefficient is not statistically significant. Turning to the results on product dummy variables, we find that dummy variables of iron and steel (IRON) and transportation machinery (TRAM) are positive and statistically significant at 5 and 1 percent levels, respectively. These findings are consistent with our expectation as barriers on these imports from Japan have been substantially liberalized under the Japan-Mexico EPA.

== Table 18 ==

[25] The analysis of the determinants of the use of Japan-Mexico EPA for their imports from Mexico by Japanese firms was undertaken, but small sample size precluded us from obtaining meaningful results.

5. Concluding Remarks

This paper examined the impacts of Japan-Mexico EPA on bilateral trade by using two different approaches. From the descriptive and econometric analysis using the detailed trade data before and after the enactment of the Japan-Mexico EPA, we found that Japan's exports of some products, typically built-up cars, the related parts and components, base metals, electrical machinery, precision machinery, and ball point pens, to Mexico dramatically increased. We also found that Japan's imports of several products, specifically live animals and products, leather, and footwear with leather, from Mexico significantly increased. Recognizing that Japan had protected heavily agricultural sector and leather industry before Japan-Mexico EPA, these findings indicate that EPA has contributed to opening up Japan's protected market, thereby improving efficiency in resource allocation.

Trade expansion effect of Japan-Mexico EPA was also observed from our analysis by using another approach. Using the results of questionnaire survey of Japanese firms on their utilization of preferential tariff treatment under the Japan-Mexico EPA, we observed that the utilization rate is high for iron and steel, and transport machinery in Japan's exports to Mexico. These products were two of most protected products by the Mexican government, but they became subject to import liberalization under the Japan-Mexico EPA. In order to verify the impacts of the Japan-Mexico EPA on Japan's exports to Mexico, we need to undertake a similar analysis, which was applied to Japan's imports from Mexico.

We found that the Japan-Mexico EPA led to an expansion of bilateral trade, but the magnitude of its increase appears below potential, because the utilization of preferential tariff treatment under the Japan-Mexico EPA is below 100 percent, 28 percent in the case of Japan's exports to Mexico and 58 percent in the case of Japan's imports from Mexico. The questionnaire survey identified two problems for the use of the EPA. One is difficulty in getting information about the use of EPA including information about EPA tariff rates, and the other is the cost incurred for using the EPA, which includes the fee for obtaining a certificate of origin and the cost for obtaining necessary data for the application of a certificate of origin.

These findings indicate the need for the government to simplify the application procedure for the certificate of origin and to provide helpful information on the use of EPAs. To simplify the issuing procedure for the certificate of origin, a self-certification

system, which has been introduced for Japan-Switzerland EPA, rather than the system applied in other EPAs, where the Japan Chamber of Commerce issues the certificate, may turn out to be more efficient. To provide information on the use of EPAs, the government should increase its efforts in disseminating the information through its own networks as well as through business associations and semi-government organization such as JETRO.

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Table 1 Japan's Exports to Mexico

		2001	2002	2003	2004	2005	2006	2007	2008
Value (Millions US$)									
HS01-05	Live animals & products	0.0	0.1	0.1	0.1	0.3	0.2	0.8	0.0
HS06-14	Vegetable products	0.4	0.2	0.3	0.0	0.0	0.0	0.1	0.1
HS15	Animal & vegetable oils	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
HS16-24	Products of food industry	0.7	0.7	1.1	1.1	1.3	3.1	3.4	3.2
HS25-27	Mineral products	1.0	0.8	6.7	9.1	1.0	1.1	138.6	356.6
HS28-38	Chemicals	108.5	107.0	106.9	113.3	104.2	124.6	109.7	116.2
HS39-40	Plastic & plastic materials	166.6	154.1	156.5	160.3	192.1	198.9	220.5	248.8
HS41-43	Skin, raw material	0.1	0.6	0.0	0.1	0.0	0.0	0.2	0.3
HS44-46	Wood & wood products	0.4	0.1	0.2	0.2	0.2	0.2	0.1	0.1
HS47-49	Pulp & paper	8.0	7.3	10.1	11.6	13.6	15.4	13.3	17.7
HS50-63	Textiles	20.4	14.7	13.4	16.1	17.2	20.4	22.7	28.0
HS64-67	Footwear, umbrellas	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
HS68-70	Cement, ceramic, et al.	66.3	68.4	34.3	33.8	73.5	98.3	61.7	24.9
HS71	Precious stones	0.4	1.1	0.3	0.4	1.1	2.1	2.6	3.8
HS72-83	Base metals & products	440.0	467.8	439.6	638.3	727.1	922.5	907.0	1152.8
HS84	General machinery	967.8	773.2	505.9	790.4	846.0	937.5	1357.6	1544.3
HS85	Electric machinery	1324.0	1080.8	1122.1	1713.5	2554.0	3315.1	3011.2	2470.1
HS86-89	Transport equipment	641.0	749.2	953.9	1321.1	1954.2	2786.9	3335.5	3128.7
HS90-92	Precision machinery	225.0	231.0	193.3	268.0	302.7	375.3	446.3	522.3
HS94-96	Various manufactured goods	36.0	35.0	37.3	33.9	35.9	50.1	65.0	125.2
Others	Others	86.3	85.0	59.7	81.1	105.2	424.4	554.7	205.6
Total		4093.0	3777.3	3641.8	5192.4	6929.8	9276.3	10251.4	9948.9
Sectoral share (%)									
HS01-05	Live animals & products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS06-14	Vegetable products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS15	Animal & vegetable oils	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS16-24	Products of food industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS25-27	Mineral products	0.0	0.0	0.2	0.2	0.0	0.0	1.4	3.6
HS28-38	Chemicals	2.7	2.8	2.9	2.2	1.5	1.3	1.1	1.2
HS39-40	Plastic & plastic materials	4.1	4.1	4.3	3.1	2.8	2.1	2.2	2.5
HS41-43	Skin, raw material	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS44-46	Wood & wood products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS47-49	Pulp & paper	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.2
HS50-63	Textiles	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.3
HS64-67	Footwear, umbrellas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS68-70	Cement, ceramic, et al.	1.6	1.8	0.9	0.7	1.1	1.1	0.6	0.3
HS71	Precious stones	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS72-83	Base metals & products	10.8	12.4	12.1	12.3	10.5	9.9	8.8	11.6
HS84	General machinery	23.6	20.5	13.9	15.2	12.2	10.1	13.2	15.5
HS85	Electric machinery	32.3	28.6	30.8	33.0	36.9	35.7	29.4	24.8
HS86-89	Transport equipment	15.7	19.8	26.2	25.4	28.2	30.0	32.5	31.4
HS90-92	Precision machinery	5.5	6.1	5.3	5.2	4.4	4.0	4.4	5.2
HS94-96	Various manufactured goods	0.9	0.9	1.0	0.7	0.5	0.5	0.6	1.3
Others	Others	2.1	2.2	1.6	1.6	1.5	4.6	5.4	2.1
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculation, based on UN comtrade and "trade statistics" available from the website of Ministry of Finance, Japan.

Table 2 Selected Products Subject to Tariff Reduction Due to EPA: Japan's Exports to Mexico

	Value (million$)					08/04	Quantity					08/04	Tariffs in 2008		
Product	2004	2005	2006	2007	2008	(%)	2004	2005	2006	2007	2008	(%)	MFN	EPA	unit
40119901	1.3	2.5	3.1	3.9	5.0	292.3	2,529	4,974	6,510	6,692	7,657	202.8	7.0	0.0	**PCE**
Pnermatic tyres of rubber	(53.9)	(48.3)	(49.4)	(52.0)	(55.8)		(41.8)	(43.5)	(47.8)	(44.2)	(49.9)				
72255099	7.9	9.5	19.5	30.8	37.1	369.7	14176	12480	25007	38158	41356	191.7	7.0	(0.0)	**t**
Alloy steel (not further worked than cold-rolled)	(6.4)	(8.3)	(15.1)	(42.2)	(53.5)		(6.8)	(8.2)	(13.8)	(43.4)	(50.0)				
84099911	4.8	6.4	8.3	16.7	24.0	397.1	262	284	516	1079	1343	412.6	7.0	0.0	**t**
Parts suitable for the diesel engines	(5.9)	(8.3)	(11.1)	(17.3)	(25.8)		(13.1)	(11.0)	(17.6)	(32.0)	(40.0)				
84272004	4.4	2.9	19.1	19.8	15.4	250.6	591	480	1311	3822	1344	127.4	20.0	0.0	**PCE**
Fork-lift trucks	(7.0)	(3.3)	(19.4)	(18.2)	(11.6)		(4.3)	(7.2)	(12.0)	(31.2)	(8.2)				
84292001	1.5	1.7	1.7	4.7	3.9	155.3	18	19	14	28	26	44.4	20.0	0.0	**PCE**
Graders and levellers	(2.4)	(2.4)	(1.6)	(4.0)	(2.5)		(0.3)	(0.1)	(0.9)	(0.6)	(1.4)				
84295102	6.2	7.4	17.8	20.5	12.9	108.7	111	112	193	208	129	16.2	20.0	0.0	**PCE**
Front-end shovel loaders	(6.8)	(6.5)	(10.8)	(10.7)	(6.8)		(4.4)	(1.0)	(1.7)	(2.8)	(0.8)				
84595101	0.2	0.1	0.2	23.4	0.6	213.1	11.0	4.0	6.0	97.0	6.0	-45.5	20.0	0.0	**PCE**
Knee type miiling machines	(13.6)	(8.3)	(6.0)	(31.1)	(6.4)		(12.8)	(5.0)	(5.6)	(48.7)	(5.8)				
84819099	19.2	20.2	33.4	46.9	56.0	191.6	875	769	1799	2419	2385	172.6	10.0	0.0	**t**
Taps, cocks, valves and similar appliances	(4.9)	(4.5)	(6.0)	(8.2)	(10.3)		(0.7)	(1.7)	(3.5)	(4.9)	(5.1)				
87084003	14.1	20.9	38.9	39.3	31.4	122.0	18908	30006	47094	45408	36065	90.7	7.0	0.0	**PCE**
Gear boxes	(13.2)	(16.0)	(17.6)	(16.1)	(13.9)		(4.0)	(9.2)	(12.3)	(7.4)	(1.9)				
87085002	0.0	0.0	0.0	1.1	4.4	n.a.	0	2	7	333	1363	n.a.	7.0	2.6	**PCE**
Drive-axles with differential	(0.0)	(0.0)	(0.0)	(4.0)	(7.4)		(0.0)	(0.0)	(0.1)	(0.8)	(0.7)				
87088099	3.0	3.8	5.6	8.1	10.1	234.6	360	385	478	635	820	127.8	10.0	0.0	**1000PCE**
Suspension shock-absorbers	(4.5)	(4.4)	(4.2)	(6.8)	(8.8)		(7.1)	(6.8)	(6.4)	(7.1)	(5.0)				
87089913	0.1	2.1	0.1	1.2	2.2	3810.9	2.1	53.5	3.7	111.2	175.8	8271.4	7.0	0.0	**1000PCE**
Other parts and accessories	(0.4)	(14.3)	(0.8)	(13.6)	(49.7)		(0.1)	(2.6)	(0.2)	(3.9)	(16.2)				
871130	1.1	2.3	2.5	2.6	2.2	91.8	375	1115	1233	1129	682	81.9	20.0	0.0	**PCE**
Motorcycles	(12.9)	(20.0)	(23.2)	(43.1)	(38.2)		(14.6)	(30.9)	(34.8)	(51.8)	(42.2)				
871140	4.1	9.9	11.0	13.5	14.7	259.1	953	4799	5055	4334	3470	264.1	20.0	0.0	**PCE**
Motorcycles	(43.6)	(57.0)	(61.0)	(64.7)	(65.1)		(49.8)	(76.2)	(78.0)	(74.6)	(76.2)				
871150	3.3	6.7	7.4	11.1	9.2	181.9	1498	1987	2247	2212	1586	5.9	20.0	0.0	**PCE**
Motorcycles	(14.3)	(22.2)	(24.3)	(28.7)	(23.5)		(34.5)	(41.6)	(43.3)	(39.8)	(26.2)				
90012001	0.6	0.1	0.2	15.3	72.8	11680.6	4.9	1.2	0.3	170.6	1872.2	38108.2	10.0	0.0	**t**
Sheets and plates of polarising material	(15.5)	(2.4)	(3.2)	(75.2)	(93.5)		(4.7)	(0.6)	(0.1)	(51.2)	(89.8)				
96081099	8.4	11.4	7.0	5.1	54.7	553.4	30926	36273	22703	15043	115932	274.9	20.0	13.8	**1000PCE**
Ball point pens	(17.8)	(23.5)	(13.4)	(9.5)	(54.1)		(7.5)	(6.7)	(4.6)	(3.1)	(22.3)				
870190	1.2	1.3	1.2	3.0	4.5	283.0	150	189	234	427	574	282.7	10.0	3.6	**PCE**
Tructors for agricultural purpose	(1.6)	(1.3)	(1.3)	(2.6)	(2.6)		(3.5)	(2.3)	(0.9)	(4.0)	(2.8)				
870290	20.0	36.2	40.5	43.1	76.4	282.3	1542	2377	2388	2465	4317	180.0	20.0	13.8	**PCE**
Trolley buses	(48.2)	(56.5)	(61.6)	(68.0)	(74.8)		(51.4)	(57.2)	(52.8)	(51.9)	(65.6)				
87032101	0.8	4.0	8.9	9.5	9.2	1013.2	341	1441	2779	3200	2749	706.2	20.0	0.0	**PCE**
Motor cars (a cylinder capacity not exceeding 1000cc)	(4.1)	(9.8)	(14.6)	(11.0)	(10.7)		(3.5)	(10.1)	(10.7)	(8.9)	(7.7)				
87032201	2.2	21.3	109.5	157.0	201.3	8896.6	5867	7107	14915	18661	22831	289.1	50.0	12.9*	**PCE**
Motor cars	(1.2)	(11.8)	(38.8)	(41.4)	(50.1)		(13.5)	(18.4)	(32.0)	(33.8)	(43.7)				
87032301	615.4	862.3	984.8	1103.5	841.8	36.8	76.5	86.6	94.0	94.9	76.3	-0.3	50.0	8.6*	**1000PCE**
Motor cars	(15.3)	(19.1)	(19.1)	(21.3)	(19.5)		(13.8)	(14.5)	(12.5)	(12.9)	(14.1)				
87032401	104.2	115.5	90.2	185.6	212.0	103.5	7481	7531	6665	11056	12264	63.9	50.0	8.6*	**PCE**
Motor cars	(4.9)	(3.9)	(2.5)	(5.0)	(6.4)		(3.4)	(2.1)	(0.9)	(1.6)	(2.3)				
87041001	2.5	4.2	3.2	1.5	2.9	15.4	10	11	7	9	8	-20.0	10.0	Excluded	**PCE**
Dumpers	(7.4)	(5.5)	(2.9)	(1.0)	(1.1)		(0.0)	(5.7)	(2.8)	(3.6)	(0.1)				
87042102	0.0	4.4	42.8	28.5	4.4	n.a.	0	402	4002	2536	384	n.a.	50.0	9.9	**PCE**
Motor vehicles for the transport of goods	(0.0)	(77.2)	(98.7)	(48.6)	(11.2)		(0.0)	(52.8)	(97.8)	(54.1)	(13.0)				
87042203	0.0	8.4	16.1	39.9	109.6	n.a.	0	439	866	2134	5329	n.a.	50.0	9.9	**PCE**
Motor vehicles for the transport of goods	(0.0)	(98.1)	(99.4)	(96.9)	(99.3)		(0.0)	(99.1)	(96.4)	(91.2)	(96.7)				
87043103	1.3	9.6	20.5	26.7	37.7	2753.3	84	735	1477	1832	2495	2870.2	50.0	9.9	**PCE**
Motor vehicles for the transport of goods	(0.2)	(1.0)	(2.1)	(2.8)	(4.0)		(0.1)	(1.1)	(2.2)	(2.6)	(3.7)				

Source: authors' preparation, based on WTA (World Trade Atlas), SIAVI<http://www.economia-snci.gob.mx:8080/siaviWeb/siaviMain.jsp> and Nakahata (2010).

Notes: Tariff rates in parentheses indicate those applied under the tariff quota system.

Figures in parenthesis for trade shows Japanese share in Mexico's imports from the world of the correspoding commodity.

* Within a quota of 5% of the total number of all motor vehicles sold in Mexico during the previous year - Free. The quota shall be eliminated as of January-1, 2011.

Table 3 Japan's Imports from Mexico

		2001	2002	2003	2004	2005	2006	2007	2008
Value (Millions US$)									
HS01-05	Live animals & products	228.9	244.4	241.7	283.7	324.3	324.7	375.2	443.9
HS06-14	Vegetable products	150.7	133.6	154.7	179.1	178.7	176.9	180.8	200.3
HS15	Animal & vegetable oils	2.0	2.0	1.3	3.3	3.2	4.0	6.4	29.0
HS16-24	Products of food industry	40.9	41.0	34.9	47.4	40.9	49.4	58.0	67.1
HS25-27	Mineral products	383.3	272.1	250.7	312.2	453.6	479.4	505.8	518.0
HS28-38	Chemicals	119.6	84.3	100.5	96.3	70.3	72.5	57.9	81.7
HS39-40	Plastic & plastic materials	30.1	5.3	6.1	7.4	10.4	12.5	60.9	96.1
HS41-43	Skin, raw material	2.2	1.6	2.1	2.0	2.7	3.4	4.4	3.4
HS44-46	Wood & wood products	1.3	0.8	0.9	0.7	1.1	0.8	0.5	1.4
HS47-49	Pulp & paper	2.7	4.0	4.9	4.7	4.0	2.3	1.6	2.5
HS50-63	Textiles	33.5	26.9	25.1	25.1	30.2	33.8	30.5	25.6
HS64-67	Footwear, umbrellas	1.3	2.2	1.0	1.4	5.2	5.0	4.6	5.9
HS68-70	Cement, ceramic, et al.	2.4	2.1	2.6	2.0	1.8	1.4	1.1	1.1
HS71	Precious stones	50.7	49.2	48.7	88.9	63.0	152.5	164.1	313.9
HS72-83	Base metals & products	5.7	14.4	10.6	42.7	29.6	43.5	32.5	49.2
HS84	General machinery	372.7	383.0	226.5	206.1	285.5	335.3	304.6	385.0
HS85	Electric machinery	228.6	221.5	243.6	284.5	308.5	293.8	406.6	512.7
HS86-89	Transport equipment	249.0	224.0	241.0	227.9	276.3	287.6	306.3	354.4
HS90-92	Precision machinery	64.1	48.9	75.5	179.7	226.1	290.3	369.4	455.6
HS94-96	Various manufactured goods	8.7	22.4	94.9	154.2	189.9	207.7	254.7	217.9
Others	Others	28.4	15.9	14.8	22.7	30.0	43.3	21.0	0.5
Total		2,006.6	1,799.7	1,782.2	2,172.0	2,535.2	2,819.9	3,147.1	3,765.4
Sectoral share (%)									
HS01-05	Live animals & products	11.4	13.6	13.6	13.1	12.8	11.5	11.9	11.8
HS06-14	Vegetable products	7.5	7.4	8.7	8.2	7.0	6.3	5.7	5.3
HS15	Animal & vegetable oils	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.8
HS16-24	Products of food industry	2.0	2.3	2.0	2.2	1.6	1.8	1.8	1.8
HS25-27	Mineral products	19.1	15.1	14.1	14.4	17.9	17.0	16.1	13.8
HS28-38	Chemicals	6.0	4.7	5.6	4.4	2.8	2.6	1.8	2.2
HS39-40	Plastic & plastic materials	1.5	0.3	0.3	0.3	0.4	0.4	1.9	2.6
HS41-43	Skin, raw material	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HS44-46	Wood & wood products	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
HS47-49	Pulp & paper	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1
HS50-63	Textiles	1.7	1.5	1.4	1.2	1.2	1.2	1.0	0.7
HS64-67	Footwear, umbrellas	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2
HS68-70	Cement, ceramic, et al.	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
HS71	Precious stones	2.5	2.7	2.7	4.1	2.5	5.4	5.2	8.3
HS72-83	Base metals & products	0.3	0.8	0.6	2.0	1.2	1.5	1.0	1.3
HS84	General machinery	18.6	21.3	12.7	9.5	11.3	11.9	9.7	10.2
HS85	Electric machinery	11.4	12.3	13.7	13.1	12.2	10.4	12.9	13.6
HS86-89	Transport equipment	12.4	12.4	13.5	10.5	10.9	10.2	9.7	9.4
HS90-92	Precision machinery	3.2	2.7	4.2	8.3	8.9	10.3	11.7	12.1
HS94-96	Various manufactured goods	0.4	1.2	5.3	7.1	7.5	7.4	8.1	5.8
Others	Others	1.4	0.9	0.8	1.0	1.2	1.5	0.7	0.0
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculation, based on UN comtrade and "trade statistics" available from the website of Ministry of Finance, Japan.

Table 4 Selected Products Subject to Tariff Reduction Due to EPA: Japan's Imports from Mexico

Product	Value (million$)					08/04	Quantity (t)[4]					08/04	Tariffs in 2008	
	2004	2005	2006	2007	2008	(%)	2004	2005	2006	2007	2008	(%)	MFN	EPA
0203	182.7	176.9	187.8	223.4	293.1	60.4	32,665	35,189	40,359	48,346	56,551	73.1		
Pork (fresh, chilled, or frozen)	(3.9)	(4.0)	(5.7)	(6.5)	(7.0)		(3.8)	(4.0)	(5.6)	(6.4)	(6.9)			
020312021, 020319021, 020322021, 020329021	5.7	3.4	13.8	16.4	29.6	415.4	969.0	670.8	3090.9	3712.3	5930.0	512.0	(482yen/kg)	*
Pork (fresh, chilled, or frozen) [1]	(0.6)	(0.4)	(1.6)	(2.9)	(3.2)		(0.6)	(0.4)	(1.6)	(2.9)	(3.2)			
020312022, 020319022, 020322022, 020329022	176.7	174.7	174.1	206.3	261.5	48.0	31696.1	34517.7	37268.5	44633.7	50620.9	59.7	(4.3)	(2.2)
Pork (fresh, chilled, or frozen) [2]	(4.7)	(5.1)	(7.2)	(7.2)	(8.2)		(4.5)	(5.0)	(7.0)	(7.0)	(8.0)			
160249220	0.1	0.1	0.0			n.a.	5.9	9.4	1.3			n.a.	(8.5)	
Prepared or preserved pork (ham, bacon, pressed ham) [3]	(0.6)	(0.5)	(0.0)				(0.6)	(0.5)	(0.0)					
160242090, 160249290	1.1	1.4	3.2	3.8	4.4	318.9	250.1	385.1	984.4	1174.8	1307.9	422.9	20.0	Excluded
Prepared or preserved pork (excl. ham, bacon, pressed ham)	(0.3)	(0.4)	(0.7)	(0.8)	(0.9)		(0.2)	(0.3)	(0.7)	(0.7)	(0.9)			
160249100	0.2	1.5	1.4	0.4	0.7	238.4	89.9	576.1	531.5	151.2	274.1	205.0	0.0	0.0
Prepared or preserved pork (simply boiled in water)	(9.0)	(14.6)	(22.4)	(11.3)	(15.7)		(10.3)	(12.7)	(16.1)	(9.0)	(17.2)			
0202	7.7	25.5	17.7	23.5	34.6	350.8	1127.4	4209.4	3781.2	5515.5	7959.2	606.0	38.5	(30.8)**
Beef (fresh, chilled, or frozen)	(1.2)	(3.7)	(2.6)	(3.1)	(3.9)		(0.5)	(1.8)	(1.6)	(2.1)	(3.1)			
020621	2.6	6.4	7.5	8.5	10.9	312.9	197.8	358.3	560.6	666.2	853.1	331.2	12.8	(7.6)**
Tongues and livers (beef)	(1.9)	(2.8)	(5.8)	(6.0)	(7.0)		(1.8)	(3.4)	(4.8)	(5.5)	(6.7)			
030759100	2.9	1.1	7.6	18.9	7.0	144.5	623.2	226.5	1482.1	3470.5	1070.1	71.7	7.0	0.0
Frozen octopus	(0.9)	(0.3)	(2.9)	(6.5)	(2.2)		(1.2)	(0.4)	(3.1)	(7.4)	(2.4)			
030791430	5.6	5.7	5.3	7.6	10.6	90.0	113.1	107.7	103.8	146.7	191.4	69.2	7.0	2.3***
Sea urchins	(5.4)	(6.2)	(6.8)	(10.9)	(14.7)		(4.6)	(4.9)	(5.5)	(9.3)	(13.2)			
0409	0.4	0.4	0.1	0.4	0.9	127.9	128.6	116.6	20.7	123.7	284.1	121.0	25.5	(0.0)
Natural honey	(0.6)	(0.7)	(0.1)	(0.5)	(1.1)		(0.3)	(0.3)	(0.1)	(0.3)	(0.7)			
070990091	16.9	16.2	23.4	19.9	22.8	35.3	20780.9	21032.9	32059.1	25067.8	26633.6	28.2	3.0	0.0
Pumpkins	(22.0)	(20.7)	(31.1)	(28.8)	(29.7)		(19.1)	(17.3)	(31.0)	(23.9)	(26.5)			
0803	3.3	3.7	4.0	4.5	5.5	66.6	3303.1	3740.3	3948.9	4610.8	5410.8	63.8	20.0/25.0	(0.0)****
Bananas (fresh or dired)	(0.6)	(0.6)	(0.7)	(0.8)	(0.7)		(0.3)	(0.4)	(0.4)	(0.5)	(0.5)			
081190220	1.0	1.3	1.7	2.1	3.2	209.7	402.9	453.8	570.8	768.0	743.1	84.5	3.6	0.0
Frozen fruit and nuts	(8.1)	(8.1)	(9.4)	(10.9)	(14.4)		(7.1)	(6.3)	(7.4)	(10.0)	(9.8)			
150420	0.3	0.4	1.3	2.7	24.9	7068.8	463.8	523.2	1535.3	2993.1	13993.4	2917.0	7.0	0.0
Fats and oils and their fractions, of marine mammals	(1.3)	(1.1)	(4.0)	(9.8)	(46.2)		(1.2)	(1.0)	(4.0)	(10.1)	(37.2)			
200799221	0.0	0.0	0.0	0.9	2.6	n.a.	0.0	0.0	48.0	885.6	2029.2	n.a.	21.3	10.6***
Fruit puree	(0.0)	(0.3)	(1.5)	(14.7)	(30.1)		(0.0)	(0.0)	(1.3)	(12.1)	(24.8)			
200911	1.9	2.8	3.0	7.5	7.8	308.3	1473.3	2251.1	2109.1	2901.3	3423.0	132.3	25.5	(12.7)
Frozen orange juice	(2.5)	(3.7)	(3.6)	(6.2)	(8.7)		(2.5)	(3.5)	(4.0)	(5.5)	(8.3)			
200929	0.0	3.2	1.9	2.0	1.1	n.a.	0.0	1136.0	762.1	896.3	702.8	n.a.	25.5	12.7***
Grapefruit juice	(0.0)	(4.8)	(3.7)	(4.4)	(3.2)		(0.0)	(3.6)	(3.7)	(4.0)	(3.3)			
220890129	7.6	7.4	8.3	9.0	9.4	24.6	1037.9	1030.8	1202.9	1266.6	1277.6	23.1	25.2yen/l	0.0
Tequila, mescal	(5.3)	(5.7)	(6.9)	(7.9)	(7.9)		(1.0)	(1.1)	(1.3)	(1.5)	(1.6)			
4107	1.0	1.4	1.9	2.4	1.6	53.8	156.5	183.2	252.8	277.6	159.5	1.9	12.0-16.0	(0.0)
Leather further prepared after tanning of bovine	(2.3)	(3.0)	(3.9)	(4.9)	(3.3)		(7.4)	(8.3)	(11.5)	(14.1)	(8.9)			
62034220	1.5	2.0	3.2	4.9	3.0	100.7	38.4	52.7	63.2	99.4	62.4	62.4	9.1	0.0
Men's or boys' trousers of cotton	(0.3)	(0.3)	(0.5)	(0.7)	(0.4)		(0.1)	(0.1)	(0.2)	(0.3)	(0.2)			
6403	1.0	4.9	4.7	4.1	4.4	348.0	18.6	128.0	126.9	102.5	93.1	399.8	21.6-30.0	(0.0)
Footwear with leather	(0.1)	(0.5)	(0.4)	(0.4)	(0.4)		(0.1)	(0.4)	(0.4)	(0.3)	(0.3)			

Source: authors' preparation, based on UN comtrade, trade statistics available from the website of MOF, and Nakahata (2010).

Notes: Tariff rates in parentheses indicate those applied under the tariff quota system.

Figures in parenthesis for trade shows Mexico's share in Japanese imports from the world of the correspoding commodity.

Banana's MFN tariffs are seasonal tariffs.

1) If a value for custom duty per kilogram is more than the upper limit prices for the specific duty applied to partial pork (53.53yen) but not more than the gate price of partial pork (524yen).

2) If a value for custom duty per kilogram is more than the gate price of partial pork (524yen).

3) If a value for custom duty per kilogram is more than the gate price of processed pork (897.59yen).

4) Unit for quantity is ton for all commodities except Tequila, mescal; unit for quantity of Tequila, mescal is kl.

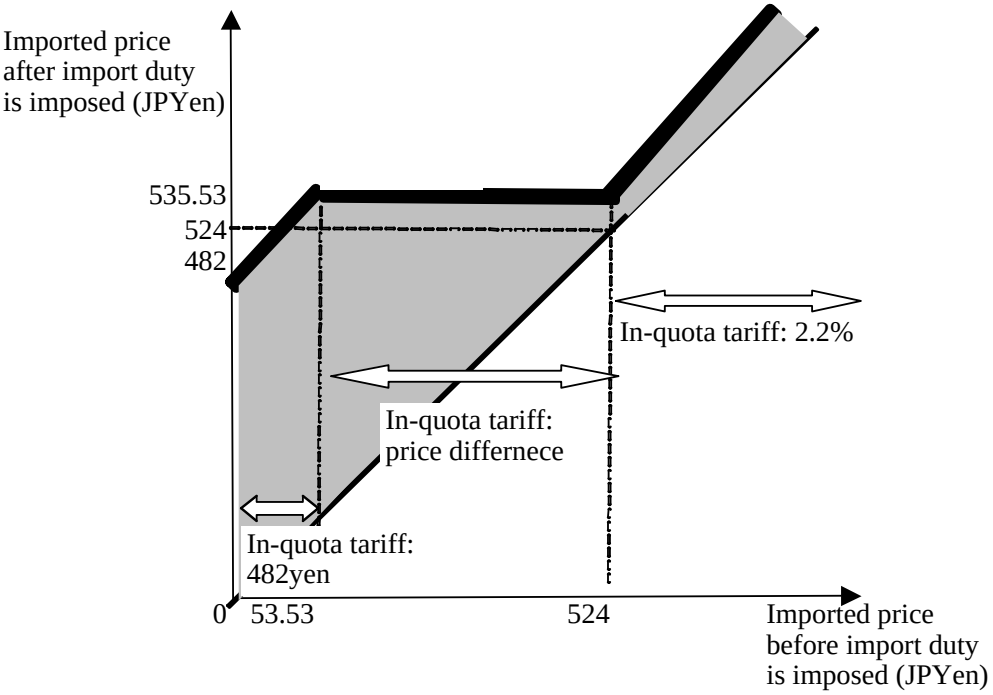
* Within quota, per kilogram, the difference between 535.53 yen and a value for custom duty per kilogram.

** Within quota, 0% for the first and second years for the market entry, and the rates will be discussed for the third to fifth year during the second year, subject to the rates not higher than 0.9 times of the applied MFN tariff rate at the beginning of 2003F/Y.

*** To be removed through 4, 8, or 8 times of annual reduction, starting from the standard rates (7 percent/21.3 percent/25.5 percent).

*** Out-quota tariff is to be removed through 11 times of annual reduction, starting from the standard rates (20/10 percent).

Figure 1 Imported Prices of Pork Per Kilogram Before and After Import Duty Is Imposed



Notes: pork is fresh, chilled, or frozen. Import duty in shadows is in-quota tariff under EPA.
Source: Ando (2007).

Table 5 List of Countries for Gravity Equation

I. Analaysis for Japan's trade				
Australia	France	Malaysia	Saudi Arabia	Viet Nam
Austria	Germany	Mexico	Singapore	
Belgium	Hungary	Netherlands	South Africa	
Brazil	India	New Zealand	Spain	
Canada	Indonesia	Norway	Sweden	
Chile	Iran	Oman	Switzerland	
China	Ireland	Philippines	Thailand	
Hong Kong SAR	Israel	Qatar	United Arab Emirates	
Denmark	Italy	Rep. of Korea	United Kingdom	
Finland	Kuwait	Russian Federation	USA	
II. Analysis for Mexico's trade				
Argentina	Chile	Germany	Peru	United Kingdom
Australia	China	Guatemala	Portugal	USA
Belgium	Colombia	India	Rep. of Korea	Venezuela
Brazil	Costa Rica	Japan	Singapore	
Canada	France	Netherlands	Spain	

Table 6 Gravity Model Estimation for Japan's Trade and Mexico's Trade at the Aggregate Level: 2004

	Japan		Mexico	
Independent variables	Exports	Imports	Exports	Imports
Constant	11.33 ***	13.43 ***	6.05 *	-1.07
	(3.61)	(3.52)	(1.86)	(-0.29)
GDP	0.69 ***	0.43 ***	0.83 ***	0.85 ***
	(7.24)	(3.15)	(5.94)	(5.43)
GDP per capita	0.03	-0.15	0.12	-0.02
	(0.34)	(-1.08)	(0.69)	(-0.08)
Distance	-1.34 ***	-0.62 ***	-1.54 ***	-0.53
	(-5.57)	(-2.54)	(-5.33)	(-1.66)
Mexico dummy	0.04	-1.11 ***		
	(0.05)	(-4.43)		
Japan dummy			-1.67 *	-0.10
			(-1.84)	(-0.10)
Adj R2	0.669	0.355	0.739	0.681
Number of observations	41	41	23	23

Data source: Authors' calculation.
Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and *at the 10 percent level.

Table 7 Gravity Model Estimation for Japan's Exports at the Aggregate and Sectoral Levels: 1990-2008

Independent variables	All products	(1) Base metals HS72-83	(2) Machinery appliances HS84	(3) Electrical machinery HS85	(4) Transport equipment HS86-89	(5) Precision machinery HS90-92
a) Pooled OLS						
Constant	157.76 *	171.53	261.47 **	152.68	148.20	212.46 **
	(1.80)	(1.38)	(2.48)	(1.31)	(1.56)	(2.19)
GDP: Mexico	0.69 ***	0.68 ***	0.83 ***	0.82 ***	0.51 ***	0.97 ***
	(29.23)	(20.08)	(32.62)	(27.60)	(16.78)	(40.54)
GDP per capita: Mexico	0.09 ***	-0.20 ***	-0.05 *	0.10 ***	0.25 **	0.15 ***
	(3.37)	(-6.10)	(-1.65)	(2.71)	(8.92)	(4.95)
Distance	-1.26 ***	-1.81 ***	-1.24 ***	-1.64 ***	-0.35 ***	-1.45 ***
	(-21.73)	(-28.15)	(-20.42)	(-18.47)	(-4.86)	(-19.22)
GDP: Japan	-8.29	-9.30	-14.40 **	-5.65	-8.81	-9.61 *
	(-1.58)	(-1.26)	(-2.29)	(-0.81)	(-1.56)	(-1.67)
GDP per capita: Japan	8.94	10.88	15.62 **	1.91	10.69	6.52
	(1.43)	(1.24)	(2.09)	(0.23)	(1.60)	(0.95)
EPA dummy: Mexico	0.44 ***	1.32 ***	-0.12	1.44 ***	0.51 ***	0.57 ***
	(5.63)	(14.05)	(-1.19)	(11.69)	(5.09)	(5.58)
Adj R2	0.660	0.597	0.626	0.619	0.472	0.733
Number of observations	728	712	712	712	712	712
b) Panel	**Fixed effects**	**Fixed effects**	**Random effects**	**Fixed effects**	**Random effects**	**Fixed effects**
Constant	268.05 ***	381.83 ***	322.56 ***	203.05 ***	211.24 ***	296.90 ***
	(7.41)	(7.85)	(6.91)	(3.73)	(4.24)	(6.88)
GDP: Mexico	0.66 ***	0.97 ***	0.93 ***	-0.05	0.58 ***	0.30
	(3.29)	(3.53)	(10.49)	(-0.17)	(6.96)	(1.23)
GDP per capita: Mexico	1.06 ***	0.74 ***	0.14	2.03 ***	0.36 ***	2.39 ***
	(4.96)	(2.49)	(1.51)	(6.13)	(4.02)	(9.11)
Distance			-1.39 ***		-0.42 ***	
			(-5.46)		(-1.79)	
GDP: Japan	-14.89 ***	-22.33 ***	-18.05 ***	-8.75 ***	-12.61 ***	-13.79 ***
	(-6.93)	(-7.72)	(-6.53)	(-2.71)	(-4.27)	(-5.37)
GDP per capita: Japan	14.96 ***	23.98 ***	19.67 ***	4.84	15.03 ***	8.59 ***
	(6.20)	(7.40)	(6.10)	(1.34)	(4.34)	(2.99)
EPA dummy: Mexico	0.40 **	0.38 *	-0.27	0.68 ***	0.90 ***	0.85 ***
	(2.54)	(1.82)	(-1.24)	(2.89)	(3.81)	(4.55)
R2（within)	0.384	0.301	0.196	0.190	0.230	0.400
R2(between)	0.118	0.031	0.626	0.000	0.508	0.026
R2(overall)	0.116	0.027	0.585	0.000	0.461	0.037
Number of observations	728	712	712	712	712	712
Hausman test	43.11 ***	35.62 ***	14.27	39.41 ***	6.69	115.72 ***
F test/ML test	123.34 ***	137.44 ***	3742.48 ***	93.35 ***	3315.96 ***	102.11 ***
Selected model	Fixed effects	Fixed effects	Random effects	Fixed effects	Random effects	Fixed effects

Data source: Authors' calculation.

Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level. The results for EPA dummies for Singapore, Malaysia, Chile, and Thailand are not presented in the table. The Hausman specification test is used to decide which model, the fixed-effects model or the random effects model, to choose.

Table 8 Gravity Model Estimation for Japan's Exports at the Product Level: 1990-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Tires of rubber	Flat-rolled products	Parts for engines	Fork lift trucks	Self-propelled bulldozers	Machine tools	Taps, cocks, valves	Motor vehicles	Parts of vehicles	Optical fibres	Ball point pens
Independent variables	HS4011	HS7225	HS8409	HS8427	HS8429	HS8459	HS8481	HS8703	HS8708	HS9001	HS9608
a) Pooled OLS											
Constant	-173.89	344.34 *	-152.80	561.42 ***	127.21	252.93	25.05	21.49	-196.88	-822.43 ***	-57.82
	(-1.37)	(1.66)	(-1.01)	(3.71)	(0.67)	(1.31)	(0.20)	(0.17)	(-1.29)	(-4.83)	(-0.44)
GDP: Mexico	0.48 ***	0.82 ***	0.89 ***	0.36 ***	0.67 ***	1.23 ***	0.87 ***	0.42 ***	0.92 ***	1.30 ***	0.81 ***
	(14.44)	(14.24)	(21.95)	(10.54)	(13.43)	(25.59)	(28.49)	(10.75)	(22.59)	(29.27)	(24.80)
GDP per capita: Mexico	0.23 ***	-0.41 ***	-0.26 ***	0.06	-0.09 *	-0.41 ***	-0.17 ***	0.52 ***	-0.16 ***	0.35 ***	0.24 ***
	(7.02)	(-8.24)	(-6.24)	(1.05)	(-1.74)	(-6.86)	(-5.12)	(12.11)	(-3.47)	(6.61)	(5.74)
Distance	-0.01	-1.73 ***	-0.98 ***	-0.39 ***	-0.88 ***	-1.92 ***	-1.33 ***	0.20	-0.68 ***	-2.78 ***	-0.53 ***
	(-0.06)	(-20.45)	(-14.12)	(-4.09)	(-5.67)	(-15.94)	(-25.38)	(1.39)	(-11.00)	(-19.77)	(-6.16)
GDP: Japan	9.42	-19.42	9.20	-33.25 ***	-11.66	-12.04	-1.55	-2.62	11.28	47.00 ***	6.54
	(1.25)	(-1.56)	(1.03)	(-3.70)	(-1.03)	(-1.04)	(-0.21)	(-0.35)	(1.24)	(4.65)	(0.84)
GDP per capita: Japan	-9.78	21.99	-10.96	39.31 ***	20.61	9.20	2.17	5.03	-12.83	-52.34 ***	-13.38
	(-1.11)	(1.46)	(-1.03)	(3.69)	(1.53)	(0.66)	(0.25)	(0.57)	(-1.19)	(-4.39)	(-1.42)
EPA dummy: Mexico	-0.63 ***	2.85 ***	0.59 ***	-0.21	-0.74 ***	0.15	0.63 ***	0.37 ***	1.73 ***	2.70 ***	1.02 ***
	(-5.19)	(15.21)	(4.41)	(-0.79)	(-4.06)	(0.43)	(5.58)	(3.06)	(11.20)	(9.01)	(3.65)
Adj R2	0.345	0.440	0.466	0.167	0.283	0.558	0.599	0.460	0.450	0.691	0.491
Number of observations	727	639	728	728	718	664	728	728	728	697	727
b) Panel	**Random effects**	**Fixed effects**	**Fixed effects**	**Fixed effects**	**Fixed effects**	**Fixed effects**	**Fixed effects**	**Random effects**	**Fixed effects**	**Fixed effects**	**Fixed effects**
Constant	-150.50 ***	760.24 ***	-155.93 **	1052.03 ***	430.59 ***	612.20 ***	75.36	85.19	4.15	-805.33 ***	142.65 *
	(-2.31)	(5.92)	(-2.36)	(12.02)	(3.60)	(4.07)	(1.07)	(1.11)	(0.05)	(-6.44)	(1.72)
GDP: Mexico	0.48 ***	3.76 ***	-1.15 ***	4.94 ***	0.78	1.70 **	-1.32 ***	0.52 ***	0.21	1.13	1.79 ***
	(4.22)	(5.29)	(-3.07)	(10.26)	(1.18)	(2.03)	(-3.39)	(4.76)	(0.49)	(1.63)	(3.93)
GDP per capita: Mexico	0.22 *	-1.30 *	2.00 ***	-2.71 ***	2.17 ***	1.56 *	3.07 ***	0.64 ***	2.10 ***	2.50 ***	0.43
	(1.80)	(-1.73)	(5.12)	(-5.24)	(3.09)	(1.75)	(7.36)	(5.49)	(4.67)	(3.36)	(0.87)
Distance	0.05							0.10			
	(0.17)							(0.32)			
GDP: Japan	7.98 **	-44.44 ***	9.04 **	-62.31 ***	-27.97 ***	-32.88 ***	-3.74	-6.09	0.40	45.89 ***	-5.48
	(2.07)	(-5.82)	(2.30)	(-11.99)	(-3.94)	(-3.67)	(-0.89)	(-1.34)	(0.09)	(6.17)	(-1.11)
GDP per capita: Japan	-8.03 *	43.80 ***	-8.00 *	63.97 ***	34.03 ***	28.36 ***	4.98	8.35	-2.52	-54.70 ***	-2.14
	(-1.78)	(5.13)	(-1.82)	(10.97)	(4.28)	(2.82)	(1.06)	(1.56)	(-0.49)	(-6.55)	(-0.39)
EPA dummy: Mexico	-0.30	1.31 **	-0.52 *	0.32	0.74	-0.21	0.10	2.05 ***	0.60 *	1.52 ***	0.89 **
	(-0.98)	(2.54)	(-1.82)	(0.40)	(1.44)	(-0.34)	(0.34)	(5.57)	(1.81)	(2.82)	(2.47)
R2（within)	0.146	0.122	0.181	0.239	0.297	0.088	0.210	0.222	0.246	0.400	0.129
R2(between)	0.379	0.333	0.216	0.112	0.008	0.065	0.165	0.518	0.000	0.105	0.519
R2(overall)	0.336	0.194	0.182	0.075	0.011	0.033	0.148	0.452	0.000	0.100	0.446
Number of observations	727	639	728	728	718	664	728	728	728	697	727
Hausman test	0.96	25.21 **	29.87 ***	105.30 ***	28.49 ***	16.94 **	56.36 ***	1.67	35.13 ***	16.37 **	14.71 *
F test/ML test	3251.73 ***	43.39 ***	113.36 ***	49.25 ***	46.54 ***	23.67 ***	54.46 ***	2755.40 ***	82.20 ***	23.72 ***	43.99 ***
Selected model	Random effects	Fixed effects	Fixed effects	Fixed effects	Fixed effects	Fixed effects	Fixed effects	Random effects	Fixed effects	Fixed effects	Fixed effects

Data source: Authors' calculation.

Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level. The results for EPA dummies for Singapore, Malaysia, Chile, and Thailand are not presented in the table. The Hausman specification test is used to decide which model, the fixed-effects model or the random effects model, to choose.

Table 9 Gravity Model Estimation for Japan's Imports at the Aggregate and Sectoral Levels: 1990-2008

Independent variables	All products	(1) Live animals & products HS01-05	(2) Vegetable products HS06-14	(3) Products of food industry HS16-24	(4) Mineral products HS25-27	(5) Textiles HS50-63	(6) Footwear, umbrellas HS64-67
a) Pooled OLS							
Constant	-110.21	-16.58	46.85	99.90	-122.58	391.97 **	292.16
	(-1.04)	(-0.07)	(0.20)	(0.55)	(-0.38)	(2.34)	(1.21)
GDP: Mexico	0.49 ***	0.81 ***	1.18 ***	1.13 ***	0.18 **	1.35 ***	1.45 ***
	(15.85)	(14.64)	(18.90)	(21.06)	(1.98)	(30.16)	(26.02)
GDP per capita: Mexico	-0.12 ***	-0.54 ***	-0.73 ***	-0.39 ***	-1.17 ***	-0.53 ***	-0.48 ***
	(-3.97)	(-9.82)	(-12.67)	(-7.50)	(-14.47)	(-12.00)	(-6.41)
Distance	-0.63 ***	-0.44 ***	-0.23 **	-0.44 ***	0.32	-2.08 ***	-2.25 ***
	(-12.24)	(-4.00)	(-2.05)	(-5.10)	(1.51)	(-23.96)	(-17.82)
GDP: Japan	6.56	2.77	-0.46	-4.86	8.13	-18.52 *	-13.84
	(1.04)	(0.20)	(-0.03)	(-0.45)	(0.42)	(-1.84)	(-0.96)
GDP per capita: Japan	-6.62	-5.95	-4.05	3.14	-9.24	14.20	10.35
	(-0.88)	(-0.36)	(-0.25)	(0.25)	(-0.40)	(1.18)	(0.60)
EPA dummy: Mexico	-0.93 ***	0.45 ***	0.43 **	-1.41 ***	0.28	-0.74 ***	-0.14
	(-10.25)	(2.65)	(2.47)	(-9.46)	(1.21)	(-4.67)	(-0.74)
Adj R2	0.378	0.263	0.389	0.431	0.227	0.657	0.534
Number of observations	728	687	661	686	695	693	627
b) Panel	**Fixed effects**	**Fixed effects**	**Random effects**	**Fixed effects**	**Random effects**	**Random effects**	**Fixed effectss**
Constant	92.90 ***	-334.11 ***	-71.56	59.80	438.08 ***	139.02 **	12.38
	(3.12)	(-3.88)	(-1.01)	(0.96)	(5.63)	(1.97)	(0.12)
GDP: Mexico	0.57 ***	-1.37 ***	0.54 **	4.37 ***	0.50 **	1.39 ***	-2.45 ***
	(3.50)	(-2.75)	(2.29)	(11.58)	(2.02)	(9.41)	(-3.24)
GDP per capita: Mexico	0.58 ***	0.71	-0.85 ***	-3.99 ***	-0.33	-0.66 ***	4.27 ***
	(3.30)	(1.34)	(-3.33)	(-9.79)	(-1.23)	(-4.14)	(5.07)
Distance			-0.05		-0.65	-1.97 ***	
			(-0.08)		(-0.74)	(-4.49)	
GDP: Japan	-5.30 ***	20.57 ***	5.15	-5.00	-26.11 ***	-3.66	3.97
	(-3.00)	(4.01)	(1.24)	(-1.35)	(-5.72)	(-0.88)	(0.64)
GDP per capita: Japan	5.61 ***	-21.18 ***	-6.84	2.02	31.74 ***	-3.04	-8.68
	(2.83)	(-3.70)	(-1.44)	(0.49)	(6.07)	(-0.63)	(-1.25)
EPA dummy: Mexico	0.10	0.84 **	0.15	-0.01	-0.72 **	0.35	0.74 *
	(0.75)	(2.35)	(0.49)	(-0.03)	(-2.12)	(1.10)	(1.76)
R2（within)	0.429	0.075	0.063	0.219	0.087	0.134	0.126
R2(between)	0.042	0.295	0.289	0.379	0.040	0.690	0.265
R2(overall)	0.056	0.233	0.274	0.313	0.077	0.652	0.245
Number of observations	728	687	661	686	695	693	627
Hausman test	27.31 ***	17.23 **	14.61	62.48 ***	8.32	1.19	30.01 ***
F test/ML test	281.39 ***	157.52 ***	4204.31 ***	190.24 ***	4536.85 ***	3654.49 ***	98.63 ***
Selected model	Fixed effects	Fixed effects	Random effects	Fixed effects	Random effects	Random effects	Fixed effects

Data source: Authors' calculation.

Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level. The results for EPA dummies for Singapore, Malaysia, Chile, and Thailand are not presented in the table. The Hausman specification test is used to decide which model, the fixed-effects model or the random effects model, to choose.

Table 10 Gravity Model Estimation for Japan's Imports at the Product Level: 1990-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Pork (fresh, chilled, or frozen)	Molluscs	Natural honey	Fruit and nuts	Fruit juices	Leather	Footwear with leather
Independent variables	HS0203	HS0307	HS0409	HS0811	HS2009	HS4107	HS6403
a) Pooled OLS							
Constant	-1247.93 **	-87.40	160.02	-521.61 *	-29.35	-31.67	-166.78
	(-2.45)	(-0.28)	(0.44)	(-1.82)	(-0.08)	(-0.11)	(-0.64)
GDP: Mexico	0.45 ***	0.69 ***	0.35 ***	0.78 ***	0.64 ***	0.80 ***	1.45 ***
	(3.40)	(8.80)	(3.40)	(10.06)	(6.15)	(12.62)	(24.83)
GDP per capita: Mexico	-0.01	-0.90 ***	-0.14	-0.03	-0.18	-0.24 ***	-0.63 ***
	(-0.03)	(-12.49)	(-0.92)	(-0.27)	(-1.42)	(-2.87)	(-8.27)
Distance	-0.24	-1.13 ***	-1.34 ***	-0.54 ***	0.86 ***	-0.19	-1.10 ***
	(-0.88)	(-6.62)	(-2.95)	(-3.57)	(4.47)	(-1.26)	(-8.00)
GDP: Japan	70.74 **	8.55	-8.90	30.44 *	-0.30	5.72	13.81
	(-2.34)	(0.46)	(-0.41)	(1.79)	(-0.01)	(0.32)	(0.88)
GDP per capita: Japan	-77.74 **	-14.39	10.56	-35.44 *	2.39	-13.76	-23.66
	(-2.18)	(-0.64)	(0.40)	(-1.75)	(0.09)	(-0.65)	(-1.27)
EPA dummy: Mexico	1.87	1.16 ***	0.72	0.93 ***	0.04	2.04 ***	0.48 **
	(3.57)	(3.06)	(1.24)	(4.13)	(0.14)	(7.22)	(2.16)
Adj R2	0.090	0.377	0.142	0.239	0.145	0.206	0.487
Number of observations	293	514	350	426	500	425	590
b) Panel	**Random effectss**	**Random effects**	**Fixed effects**	**Random effects**	**Random effects**	**Fixed effects**	**Fixed effects**
Constant	-1144.57 ***	210.09	-434.73 ***	-228.18	-78.01	-189.51	-483.44 ***
	(-3.98)	(1.50)	(-3.10)	(-1.54)	(-0.51)	(-0.71)	(-3.10)
GDP: Mexico	0.30	1.16 ***	-5.58 ***	0.90 ***	1.34 **	-4.86 *	-7.58 ***
	(0.65)	(4.20)	(-4.07)	(3.74)	(3.89)	(-1.96)	(-5.82)
GDP per capita: Mexico	-0.17	-0.85 ***	4.44 ***	-0.09	0.10	6.45 **	8.75 ***
	(-0.24)	(-3.01)	(3.04)	(-0.36)	(0.27)	(2.36)	(6.03)
Distance	-0.56	-1.76 **		-0.40	0.74		
	(-0.46)	(-2.45)		(-0.70)	(0.87)		
GDP: Japan	63.07 ***	-7.58	24.99 ***	11.66	0.94	17.25	36.38 ***
	(3.74)	(-0.91)	(2.96)	(1.33)	(0.10)	(1.06)	(3.89)
GDP per capita: Japan	-65.18 ***	1.31	-16.93 *	-11.67	1.64	-22.37	-42.58 ***
	(-3.36)	(0.14)	(-1.78)	(-1.13)	(0.16)	(-1.23)	(-4.07)
EPA dummy: Mexico	0.26	1.59 ***	0.04	-0.92 *	0.59	2.59 ***	1.26 **
	(0.32)	(2.93)	(0.09)	(-1.69)	(0.98)	(2.90)	(2.04)
R2（within)	0.143	0.119	0.195	0.103	0.175	0.048	0.151
R2(between)	0.143	0.403	0.096	0.238	0.144	0.118	0.343
R2(overall)	0.073	0.330	0.069	0.223	0.109	0.084	0.350
Number of observations	293	514	350	426	500	425	590
Hausman test	8.04	3.17	25.77 ***	0.44	8.73	35.40 ***	48.28 ***
F test/ML test	817.53 ***	2319.71 ***	85.89 ***	1411.37 ***	2158.79 ***	9.72 ***	40.47 ***
Selected model	Random effects	Random effects	Fixed effects	Random effects	Random effects	Fixed effects	Fixed effects

Data source: Authors' calculation.

Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and * a the 10 percent level. The results for EPA dummies for Singapore, Malaysia, Chile, and Thailand are not presented in the table. The Hausman specification test is used to decide which model, the fixed-effects model or the random effects model, to choose.

Table 11 Characteristics of Firms Using and Not Using Japan-Mexico EPA in Their Exports

	Using EPA		Not Using EPA		Total	
	Number	Share	Number	Share	Number	Share
Surveyed Firms	53	28%	136	72%	189	100%
Size of Surveyed Firms	Average	S.D	Average	S.D	Average	S.D.
Employment	3,067	6,984	1,838	6,237	2,183	6,460
Sales (billion yen)	375	1,087	173	626	229	785
Capital (million yen)	31,758	82,519	9,351	34,501	15,635	53,292
Exported Products by Surveyed Firms	Number	Product Share (%)	Number	Product Share (%)	Number	Product Share (%)
Iron and steel	9	10.7	8	4.7	17	6.7
Industrial machinery	17	20.2	46	26.9	63	24.7
Transport machinery	20	23.8	18	10.5	38	14.9
Electric machinery	9	10.7	29	17.0	38	14.9
Textiles	4	4.8	7	4.1	11	4.3
Chemicals	8	9.5	25	14.6	33	12.9
Miscellaneous	4	4.8	10	5.8	14	5.5
Foods	4	4.8	6	3.5	10	3.9
Others	9	10.7	22	12.9	31	12.2
Total	84	100.0	171	100.0	255	100.0
	Number of firms	Share in re-pondents(%)	Number of firms	Share in re-pondents(%)	Number of firms	Share in re-pondents(%)
Owning Affiliates in Mexico	9	17.0	11	8.1	20	10.6

Source: RIETI-JCCI Survey

Table 12 Impacts and Problems of Using Japan-Mexico EPA in Their Exports

	Number of Firms		Share of Total (%)	
	Yes	No	Yes	No
Impacts of EPA				
Increase in exports	8	45	15.1	84.9
Increase in profits	3	50	5.7	94.3
Increase in costs	8	45	15.1	84.9

Source: RIETI-JCCI Survey

Table 13 Problems in Using EPA for Their Exports by Japanese Firms

	Total	Large Firms	SMEs
Total valid responses	46	18	28
Problems in using EPA	21	9	12
Following problems *			
Shortage of information on the use of EPA	3	1	2
Difficulty in getting information on EPA tariff rates	4	1	3
Incurring costs in obtaining certificate of origin	20	9	11
Spaghetti Bowl effect	11	4	7

Notes: Large firms are those with 300 or more employees and SMEs are those with 299 or less employees.
* multiple answers are allowed
Source: RIETI-JCCI Survey

Table 14 Reasons for not Using Japan-Mexico EPA by Japanese Firms in Their Exports (Multiple Answers Allowed)

	Total	Large	SMEs
Reasons for Not Using EPA			
Valid responses	43	16	27
Trade volume with trading partner is small	14	5	9
Lack of knowledge/or do not know how to use it	12	3	9
Difficulty in acquiring certificate of origin	10	4	6
Tariff preference by EPAs is too small	3	2	1
MFN rate is lower than EPA rate	0	0	0
Difficult to fulfill the requirement of ROO	2	0	2
Under consideration	1	0	1
Others	6	4	2
Reasons for Difficutly in Acquiring Certificate of Origin (COO)			
Valid responses	10	4	6
Difficut to collect necessary data	7	2	5
Cost of collecting necessary data is too high to gain benefits	3	1	2
Do not want to disclose data necessary to obtain COO	1	0	1
Fee to obtain COO is very high	3	1	2
Others	2	2	0

Source: RIETI-JCCI Survey

Table 15 Characteristics of Firms Using and Not Using Japan-Mexico EPA in their Imports

	Using EPA		Not Using EPA		Total	
	Number	Share	Number	Share	Number	Share
Surveyed Firms	29	58%	21	42%	50	100%
Size of Surveyed Firms	Average	S.D	Average	S.D	Average	S.D
Employment	1,090	2,491	3,663	8,132	2,170	5,673
Sales (billion yen)	436	1,367	300	614	379	1,107
Capital (million yen)	31,549	90,448	24,636	67,020	28,645	80,746
Imported Products by Surveyed Firms	Number	Product Share (%)	Number	Product Share (%)	Number	Product Share (%)
Iron and steel	4	8.5	3	9.4	7	8.9
Industrial machinery	8	17.0	3	9.4	11	13.9
Transport machinery	6	12.8	1	3.1	7	8.9
Electric machinery	3	6.4	3	9.4	6	7.6
Textiles	2	4.3	3	9.4	5	6.3
Chemicals	6	12.8	7	21.9	13	16.5
Miscellaneous	2	4.3	1	3.1	3	3.8
Foods	10	21.3	7	21.9	17	21.5
Others	6	12.8	4	12.5	10	12.7
Total	47	100.0	32	100.0	79	100.0

Source: RIETI-JCCI Survey

Table 16 Impacts and Problems of Using Japan-Mexico EPA in Their Imports

	Number of Firms		Share of Total (%)	
	Yes	No	Yes	No
Impacts of EPA				
Increase in imports	4	25	13.8	86.2
Increase in profits	4	25	13.8	86.2
Increase in costs	2	27	6.9	93.1

Source: RIETI-JCCI Survey

Table 17 Problems in Using FTA for their Imports by Japanese Firms

	Total	Large	SMEs
Total valid responses	27	8	19
Problems in using FTA	15	3	12
Following problems **			
Shortage of information on the use of FTA	7	2	5
Difficulty in getting information on EPA tariff rate	6	3	3
Difficulty in coordinating with the exporter	5	1	4

Notes: Large firms are those with 300 or more employees and SMEs are those with 299 or less employees.
* multiple answers are allowed
Source: RIETI-JCCI Survey

Table 18 The Determinants of Use of EPAs for Exports by Japanese Firms

Equations	1	2	3	4	5	6
Constant	-0.73 ***	-1.68 **	-1.00 *	-0.99 ***	-1.71 **	-1.03
	(-3.4)	(-2.3)	(-1.81)	(-3.41)	(-1.97)	(-1.56)
lnEMPL	0.03			0.02		
	(0.79)			(0.52)		
lnSALE		0.05			0.04	
		(1.52)			(0.99)	
lnCAPI			0.02			0.01
			(0.78)			(0.25)
AFFI				0.26	0.23	0.31
				(0.74)	(0.66)	(0.88)
IRON				0.76 **	0.74 **	0.76 **
				(2.3)	(2.23)	(2.3)
GENM				-0.01	0.01	-0.02
				(-0.03)	(0.03)	(-0.08)
TRAM				0.88 ***	0.86 ***	0.86 ***
				(3.48)	(3.44)	(3.45)
ELEM				-0.32	-0.37	-0.30
				(-1.13)	(-1.28)	(-1.07)
TEXT				0.07	0.05	0.08
				(0.16)	(0.11)	(0.17)
CHEM				-0.05	-0.07	-0.06
				(-0.17)	(-0.26)	(-0.22)
MISC				-0.13	-0.10	-0.14
				(-0.32)	(-0.24)	(-0.33)
FOOD				0.17	0.12	0.17
				(0.36)	(0.26)	(0.35)
OTHE				0.24	0.22	0.24
				(0.85)	(0.78)	(0.85)
Pseudo R2	0.003	0.011	0.003	0.098	0.102	0.097
Observations	189	189	189	189	189	189

Note: figures in parenthesis are t-value.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A.1 Mexico's Share in Japan's Trade

		2001	2002	2003	2004	2005	2006	2007	2008
Mexico's share in Japan' total exports									
HS01-05	Live animals & products	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
HS06-14	Vegetable products	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
HS15	Animal & vegetable oils	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
HS16-24	Products of food industry	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1
HS25-27	Mineral products	0.1	0.0	0.3	0.3	0.0	0.0	1.4	1.8
HS28-38	Chemicals	0.4	0.4	0.3	0.3	0.2	0.3	0.2	0.2
HS39-40	Plastic & plastic materials	1.1	0.9	0.8	0.7	0.7	0.7	0.7	0.7
HS41-43	Skin, raw material	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.1
HS44-46	Wood & wood products	0.7	0.2	0.2	0.2	0.2	0.2	0.1	0.1
HS47-49	Pulp & paper	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.4
HS50-63	Textiles	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3
HS64-67	Footwear, umbrellas	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
HS68-70	Cement, ceramic, et al.	1.6	1.7	0.7	0.6	1.2	1.4	0.8	0.3
HS71	Precious stones	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
HS72-83	Base metals & products	1.8	1.8	1.4	1.6	1.6	1.8	1.5	1.6
HS84	General machinery	1.2	0.9	0.5	0.7	0.7	0.7	1.0	1.0
HS85	Electric machinery	1.5	1.2	1.1	1.4	2.1	2.6	2.2	1.8
HS86-89	Transport equipment	0.7	0.7	0.8	1.0	1.4	1.8	1.9	1.6
HS90-92	Precision machinery	0.8	0.9	0.7	0.7	0.8	1.0	1.3	1.4
HS94-96	Various manufactured goods	0.8	0.8	0.9	0.7	0.6	0.9	1.0	1.8
Others	Others	0.5	0.5	0.3	0.3	0.4	1.4	1.5	0.6
Total		1.0	0.9	0.8	0.9	1.2	1.4	1.4	1.3
Mexico's share in Japan' total imports									
HS01-05	Live animals & products	1.1	1.3	1.2	1.3	1.5	1.7	2.0	2.0
HS06-14	Vegetable products	1.2	1.1	1.1	1.1	1.2	1.2	1.0	0.9
HS15	Animal & vegetable oils	0.4	0.4	0.2	0.4	0.4	0.5	0.6	1.8
HS16-24	Products of food industry	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3
HS25-27	Mineral products	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.2
HS28-38	Chemicals	0.5	0.4	0.4	0.3	0.2	0.2	0.1	0.2
HS39-40	Plastic & plastic materials	0.4	0.1	0.1	0.1	0.1	0.1	0.4	0.5
HS41-43	Skin, raw material	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1
HS44-46	Wood & wood products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS47-49	Pulp & paper	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
HS50-63	Textiles	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HS64-67	Footwear, umbrellas	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1
HS68-70	Cement, ceramic, et al.	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
HS71	Precious stones	0.9	0.9	0.9	1.2	0.7	1.5	1.4	2.2
HS72-83	Base metals & products	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1
HS84	General machinery	1.0	1.0	0.5	0.4	0.5	0.6	0.5	0.7
HS85	Electric machinery	0.5	0.5	0.5	0.5	0.5	0.4	0.6	0.7
HS86-89	Transport equipment	2.1	1.6	1.5	1.3	1.5	1.5	1.4	1.6
HS90-92	Precision machinery	0.4	0.3	0.4	0.9	1.0	1.1	1.6	1.9
HS94-96	Various manufactured goods	0.1	0.3	1.0	1.5	1.7	1.7	1.8	1.6
Others	Others	0.5	0.3	0.2	0.3	0.4	0.5	0.2	0.2
Total		0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Table A.2 Japan's Share in Mexico's Trade

		2001	2002	2003	2004	2005	2006	2007	2008
Japan's share in Mexico' total exports									
HS01-05	Live animals & products	11.3	13.4	9.2	3.7	15.5	14.7	18.8	24.7
HS06-14	Vegetable products	1.8	1.6	2.0	0.9	2.1	2.1	1.8	1.7
HS15	Animal & vegetable oils	3.9	2.4	1.1	3.7	3.1	2.2	2.8	13.7
HS16-24	Products of food industry	1.4	0.9	0.7	0.7	0.9	0.7	0.7	0.8
HS25-27	Mineral products	1.8	1.3	1.1	0.3	1.1	0.8	0.9	0.5
HS28-38	Chemicals	1.5	1.3	1.5	1.0	0.8	0.9	1.1	0.7
HS39-40	Plastic & plastic materials	0.0	0.1	0.1	0.0	0.1	0.1	0.9	1.3
HS41-43	Skin, raw material	0.3	0.3	0.3	0.5	0.4	0.5	0.7	0.5
HS44-46	Wood & wood products	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
HS47-49	Pulp & paper	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1
HS50-63	Textiles	0.1	0.1	0.2	0.3	0.1	0.0	0.1	0.1
HS64-67	Footwear, umbrellas	0.1	0.2	0.1	0.1	1.3	1.1	1.3	2.0
HS68-70	Cement, ceramic, et al.	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
HS71	Precious stones	5.6	3.4	3.9	2.1	3.6	4.7	3.9	4.0
HS72-83	Base metals & products	0.1	0.2	0.1	0.1	0.1	0.3	0.2	0.2
HS84	General machinery	0.7	0.6	0.9	0.3	0.4	0.4	0.5	0.4
HS85	Electric machinery	0.5	0.5	0.4	0.1	0.2	0.2	0.2	0.3
HS86-89	Transport equipment	0.6	0.4	0.5	0.1	0.8	0.7	0.7	0.6
HS90-92	Precision machinery	1.0	0.6	0.7	0.6	0.6	0.7	0.7	0.8
HS94-96	Various manufactured goods	0.2	1.4	0.0	0.0	0.0	0.0	0.3	0.4
Others	Others	1.1	3.1	0.8	0.7	0.3	0.1	0.2	0.4
Total		0.8	0.7	0.7	0.3	0.7	0.6	0.7	0.7
Japan's share in Mexico' total imports									
HS01-05	Live animals & products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS06-14	Vegetable products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS15	Animal & vegetable oils	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HS16-24	Products of food industry	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
HS25-27	Mineral products	0.2	1.0	0.3	0.3	0.2	0.4	2.5	1.8
HS28-38	Chemicals	2.3	2.9	2.1	1.9	1.8	1.7	1.4	1.4
HS39-40	Plastic & plastic materials	2.7	2.7	3.0	3.1	3.0	3.0	3.0	2.9
HS41-43	Skin, raw material	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.1
HS44-46	Wood & wood products	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.0
HS47-49	Pulp & paper	1.0	1.5	1.4	0.9	1.2	1.1	0.5	0.6
HS50-63	Textiles	0.3	0.3	0.3	0.3	0.4	0.7	0.5	0.6
HS64-67	Footwear, umbrellas	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
HS68-70	Cement, ceramic, et al.	2.9	5.1	4.5	4.6	8.6	8.0	8.2	2.3
HS71	Precious stones	0.2	0.4	0.2	0.3	0.4	2.0	0.2	0.3
HS72-83	Base metals & products	4.8	5.0	4.8	5.0	4.9	4.7	4.7	5.2
HS84	General machinery	5.8	6.0	4.8	6.1	5.8	5.8	6.6	6.8
HS85	Electric machinery	8.9	11.0	8.3	9.9	11.6	10.7	9.3	8.5
HS86-89	Transport equipment	3.8	4.6	5.3	6.8	8.0	10.1	10.4	10.2
HS90-92	Precision machinery	6.5	6.3	7.2	12.9	15.3	13.9	11.9	9.9
HS94-96	Various manufactured goods	0.7	0.7	0.5	0.5	0.6	0.7	1.1	1.3
Others	Others	27.1	36.3	19.1	11.3	11.5	12.2	11.8	8.4
Total		4.8	5.5	4.4	5.4	5.9	6.0	5.8	5.3

Table A.3 Zero-tariff import quota for BU cars allocated to Japanese automobile manufacturers by Mexico

Unit: quantity

Automobile manufactures	Quota for local producers		Quota under EPA	
	2005	2006	2005F/Y	2006F/Y
Sub-total: companies with local production	**58,218**	**65,305**	**46,599**	**45,270**
Nissan	27,218	29,305	23,718	23,029
Honda	5,000	9,000	8,900	8,652
Toyota	16,000	17,000	6,664	6,487
Mitsubishi	10,000	10,000	7,317	7,102
Sub-total: companies without local production	**0**	**0**	**8,240**	**11,315**
Mazda	0	0	3,340	5,502
Suzuki	0	0	3,000	4,092
Isuzu	0	0	1,900	1,221
Subaru	0	0	0	500
Total	**58,218**	**65,305**	**54,839**	**56,585**

Source: Ando (2007). (Original source: documents provided at the JETRO seminar.)

Notes: 1) Zero-tariff import quota for local producers is provided as 10% of previous-year-local production in terms of quantity. 2) Zero-tariff import quota under EPA is equivalent to 5% of previous-year-sales at the local market in terms of quantity. 3) Mitsubishi automobiles without local production sites partially use zero-tariff import quota allocated to DaimlerChrysler in the same business alliance.

Table A.4 Gravity Model Estimation for Mexico's Imports at the Aggregate and Sectoral Levels: 1990-2008

Independent variables	All products	(1) Base metals HS72-83	(2) Machinery appliances HS84	(3) Electrical machinery HS85	(4) Transport equipment HS86-89	(5) Precision machinery HS90-92
a) Pooled OLS						
Constant	-125.80 ***	-115.85 ***	-165.13 ***	-114.76 ***	-92.45 *	-113.30 ***
	(-6.34)	(-4.00)	(-5.06)	(-2.66)	(-1.91)	(-3.36)
GDP: Japan	0.95 ***	1.21 ***	1.15 ***	1.32 ***	1.77 ***	1.51 ***
	(19.55)	(26.62)	(16.68)	(14.39)	(22.58)	(22.30)
GDP per capita: Japan	0.14 ***	-0.03	0.51 ***	0.44 ***	-0.13 ***	0.36 ***
	(3.20)	(-0.59)	(6.83)	(4.55)	(-2.15)	(5.30)
Distance	-0.57 ***	-0.84 ***	0.12	0.72 ***	-0.68 ***	0.11
	(-5.23)	(-7.56)	(0.71)	(3.04)	(-3.10)	(0.60)
GDP: Mexico	5.35 ***	4.98 **	7.30 ***	2.57	-0.54	3.93
	(3.49)	(2.19)	(2.93)	(0.78)	(-0.14)	(1.56)
GDP per capita: Mexico	-2.79	-3.48	-6.34	1.49	9.18	-2.98
	(-1.08)	(-0.90)	(-1.52)	(0.27)	(1.43)	(-0.72)
EPA dummy: Japan	-0.71 ***	-0.55 ***	-1.36 ***	-0.45	-0.28	-0.39 *
	(-4.62)	(-3.50)	(-6.54)	(-1.50)	(-1.06)	(-1.71)
Adj R2	0.839	0.762	0.813	0.752	0.770	0.829
Number of observations	381	420	420	420	416	419
b) Panel	**Random effects**	**Random effects**	**Random effects**	**Fixed effects**	**Random effects**	**Fixed effects**
Constant	-105.50 ***	-110.72 ***	-152.73 ***	-130.60 ***	-102.41 ***	-73.53 ***
	(-9.59)	(-6.99)	(-8.60)	(-6.30)	(-2.87)	(-3.25)
GDP: Japan	1.09 ***	1.22 ***	1.31 ***	1.88	1.62 ***	-2.74 *
	(8.30)	(7.64)	(6.81)	(1.42)	(6.78)	(-1.90)
GDP per capita: Japan	0.38 **	0.16	0.75 ***	0.88	-0.09	6.39 ***
	(2.52)	(0.85)	(3.37)	(0.64)	(-0.32)	(4.28)
Distance	-0.86 ***	-0.99 ***	-0.30		-0.55	
	(-3.05)	(-2.87)	(-0.72)		(-1.06)	
GDP: Mexico	4.29 ***	4.81 ***	6.59 ***	3.82 **	0.15	5.41 ***
	(5.19)	(3.97)	(4.88)	(2.19)	(0.05)	(2.86)
GDP per capita: Mexico	-2.21	-3.61 *	-5.86 ***	-2.03	8.48 *	-5.31 **
	(-1.64)	(-1.79)	(-2.64)	(-0.83)	(1.82)	(-2.00)
EPA dummy: Japan	-0.15	-0.08	-0.47	0.04	0.17	0.44
	(-0.64)	(-0.24)	(-1.25)	(0.08)	(0.21)	(0.98)
R2（within)	0.827	0.653	0.663	0.727	0.463	0.593
R2(between)	0.799	0.741	0.814	0.700	0.863	0.005
R2(overall)	0.800	0.722	0.788	0.694	0.762	0.009
Number of observations	381	420	420	420	416	419
Hausman test	13.77	10.53	8.47	40.40 ***	11.73	23.37 **
F test/ML test	1317.58 ***	1393.64 ***	1550.18 ***	78.54 ***	388.75 ***	35.98 ***
Selected model	Random effects	Random effects	Random effects	Fixed effects	Random effects	Fixed effects

Data source: Authors' calculation.

Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level. The results for FTA dummies for NAFTA, G3, Chile, EU, and Central-America are not presented in the table. The Hausman specification test is used to decide which model, the fixed-effects model or the random effects model, to choose.

Table A.5 Gravity Model Estimation for Mexico's Imports at the Product Level: 1990-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Tires of rubber	Flat-rolled products	Parts for engines	Fork lift trucks	Self-propelled bulldozers	Machine tools	Taps, cocks, valves	Motor vehicles	Parts of vehicles	Optical fibres	Ball point pens
Independent variables	HS4011	HS7225	HS8409	HS8427	HS8429	HS8459	HS8481	HS8703	HS8708	HS9001	HS9608
a) Pooled OLS											
Constant	-85.34	-118.05	-197.73 ***	-114.89	13.08	-29.61	-150.27 ***	-558.88 ***	-187.34 ***	-162.05 ***	-105.89 **
	(-1.49)	(-1.54)	(-3.54)	(-1.64)	(0.23)	(-0.55)	(-3.67)	(-6.26)	(-4.29)	(-2.87)	(-2.21)
GDP: Japan	2.01 ***	1.26 ***	2.00 ***	1.65 ***	1.31 ***	1.71 ***	1.77 ***	1.75 ***	1.82 ***	1.26 ***	1.91 ***
	(16.72)	(9.40)	(22.48)	(14.27)	(15.55)	(18.61)	(31.08)	(9.29)	(27.28)	(11.19)	(21.66)
GDP per capita: Japan	-0.77 ***	0.36 *	0.23	0.41 ***	0.69 ***	0.01	0.27 ***	0.19	0.20 ***	-0.06	-0.49 ***
	(-7.51)	(1.91)	(2.74)	(3.21)	(5.21)	(0.07)	(2.93)	(0.72)	(2.60)	(-0.80)	(-4.66)
Distance	-2.17 ***	-1.02 *	-1.64 ***	-0.85 *	-2.04 ***	-0.79 ***	-0.84 ***	-2.59 ***	-0.82 ***	0.02	-1.76 ***
	(-6.72)	(-1.77)	(-6.87)	(-1.88)	(-7.91)	(-2.63)	(-4.23)	(-4.83)	(-4.54)	(0.06)	(-7.77)
GDP: Mexico	0.79	1.95	9.51 **	6.56	-7.05 *	1.27	4.88	32.63 ***	5.99 *	5.22	7.14 *
	(0.17)	(0.32)	(2.17)	(1.17)	(-1.69)	(0.29)	(1.56)	(4.67)	(1.72)	(1.18)	(1.92)
GDP per capita: Mexico	5.36	5.32	-10.51	-11.04	18.93 ***	-4.15	-1.62	-39.15 ***	-0.76	-0.56	-12.70 **
	(0.63)	(0.52)	(-1.42)	(-1.13)	(2.79)	(-0.53)	(-0.31)	(-3.29)	(-0.13)	(-0.07)	(-1.97)
EPA dummy: Japan	-0.44	1.56 ***	-0.77 ***	0.48	0.04	0.71	-1.61 ***	0.61	-0.74 ***	1.76 ***	1.20 ***
	(-1.32)	(3.47)	(-2.59)	(0.95)	(0.11)	(1.62)	(-6.71)	(1.04)	(-3.04)	(4.49)	(2.81)
Adj R2	0.557	0.554	0.757	0.669	0.657	0.645	0.817	0.595	0.822	0.626	0.663
Number of observations	356	238	364	240	253	283	411	260	390	294	363
b) Panel	**Random effects**	**Fixed effects**	**Random effects**	**Fixed effects**	**Random effects**	**Random effects**	**Random effects**	**Random effects**	**Random effects**	**Fixed effects**	**Fixed effects**
Constant	-81.13 *	87.67	-192.96 ***	35.55	35.88	-2.42	-156.53 ***	-499.72 ***	-184.46 ***	-111.24 **	76.06 *
	(-1.74)	(1.49)	(-4.99)	(0.52)	(0.95)	(-0.06)	(-5.88)	(-7.12)	(-6.00)	(-2.23)	(1.65)
GDP: Japan	1.77 ***	-20.53 ***	1.89 ***	-14.71 ***	1.30 ***	1.64 ***	1.74 ***	2.15 ***	1.83 ***	-7.34 ***	-9.32 ***
	(4.97)	(-4.99)	(7.84)	(-3.41)	(4.82)	(6.05)	(9.91)	(4.39)	(8.52)	(-2.61)	(-3.24)
GDP per capita: Japan	-1.02 ***	25.06 ***	0.38	18.85 ***	0.84 ***	-0.08	0.42 **	0.19	0.37	10.06 ***	13.22 ***
	(-2.57)	(5.81)	(1.38)	(4.20)	(2.70)	(-0.27)	(2.04)	(0.35)	(1.52)	(3.39)	(4.48)
Distance	-1.85 **		-1.13 **		-1.98 ***	-1.08 *	-0.89 **	-2.76 ***	-0.81 *		
	(-2.46)		(-2.17)		(-3.38)	(-1.82)	(-2.35)	(-2.66)	(-1.76)		
GDP: Mexico	-0.01	9.88 **	8.22 ***	11.33 ***	-7.79 ***	-1.07	5.47 ***	27.57 ***	5.37 **	11.58 ***	3.60
	(0.00)	(2.28)	(2.77)	(2.73)	(-2.72)	(-0.36)	(2.64)	(5.12)	(2.25)	(3.04)	(0.96)
GDP per capita: Mexico	8.02	-2.04	-7.36	-12.59 **	18.40 ***	0.60	-2.75	-31.31 ***	0.63	-10.15 *	-4.10
	(1.32)	(-0.32)	(-1.48)	(-2.02)	(3.87)	(0.12)	(-0.79)	(-3.49)	(0.16)	(-1.83)	(-0.76)
EPA dummy: Japan	-1.27	-0.30	-0.38	-0.98	0.51	0.86	-0.24	-0.29	-0.30	2.33 ***	0.31
	(-1.38)	(-0.37)	(-0.49)	(-1.22)	(0.87)	(1.27)	(-0.41)	(-0.27)	(-0.46)	(2.99)	(0.37)
R2（within)	0.306	0.510	0.405	0.355	0.394	0.058	0.518	0.583	0.590	0.391	0.182
R2(between)	0.691	0.101	0.842	0.070	0.737	0.764	0.881	0.620	0.906	0.284	0.319
R2(overall)	0.525	0.029	0.732	0.053	0.643	0.637	0.808	0.574	0.816	0.113	0.200
Number of observations	356	238	364	240	253	283	411	260	390	294	363
Hausman test	7.78	32.42 ***	9.03	38.10 ***	9.62	7.05	2.84	5.00	3.27	84.08 ***	71.41 ***
F test/ML test	491.74 ***	18.31 ***	357.90 ***	13.52 ***	620.97 ***	443.72 ***	584.13 ***	363.31 ***	492.28 ***	13.11 ***	16.39 ***
Selected model	Random effects	Fixed effects	Random effects	Fixed effects	Random effects	Random effects	Random effects	Random effects	Random effects	Fixed effects	Fixed effects

Data source: Authors' calculation.

Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level. The results for FTA dummies for NAFTA, G3, Chile, EU, and Central-America are not presented in the table. The Hausman specification test is used to decide which model, the fixed-effects model or the random effects model, to choose.

Table A.6 Gravity Model Estimation for Mexico's Exports at the Aggregate and Sectoral Levels: 1990-2008

Independent variables	All products	(1) Live animals & products HS01-05	(2) Vegetable products HS06-14	(3) Products of food industry HS16-24	(4) Mineral products HS25-27	(5) Textiles HS50-63	(6) Footwear, umbrellas HS64-67
a) Pooled OLS							
Constant	-68.66 ***	-161.20 ***	-142.43 ***	-241.63 ***	95.42 *	-131.07 ***	35.14
	(-3.74)	(-2.63)	(-5.18)	(-9.53)	(1.87)	(-4.41)	(0.79)
GDP: Japan	0.63 ***	1.35 ***	0.94 ***	0.67 ***	0.79 ***	0.79 ***	0.84 ***
	(14.34)	(11.55)	(19.65)	(16.06)	(8.54)	(13.63)	(10.52)
GDP per capita: Japan	0.23 ***	0.63 ***	0.73 ***	0.64 ***	0.23	0.08	0.94 ***
	(5.29)	(4.51)	(8.22)	(8.67)	(1.52)	(0.92)	(8.44)
Distance	-1.30 ***	-1.93 ***	-2.16 ***	-2.03 ***	-1.80 ***	-1.98 ***	-2.47 ***
	(-13.09)	(-5.83)	(-15.95)	(-17.80)	(-7.98)	(-13.63)	(-11.47)
GDP: Mexico	3.73 **	13.80 ***	10.59 ***	16.31 ***	-7.21 *	12.04 ***	1.73
	(2.57)	(2.98)	(4.70)	(8.55)	(-1.80)	(5.28)	(0.51)
GDP per capita: Mexico	-2.75	-26.30 ***	-16.78 ***	-22.34 ***	12.10 *	-21.61 ***	-9.62 *
	(-1.11)	(-3.37)	(-4.19)	(-7.15)	(1.75)	(-5.70)	(-1.70)
EPA dummy: Japan	-0.81 ***	2.69 ***	0.00	-1.28 ***	1.09 ***	-2.14 ***	1.25 ***
	(-6.32)	(5.43)	(-0.01)	(-7.26)	(2.78)	(-7.38)	(3.68)
Adj R2	0.790	0.524	0.781	0.789	0.403	0.676	0.652
Number of observations	425	388	423	421	420	426	400
b) Panel	**Fixed effects**	**Random effects**	**Random effects**	**Fixed effects**	**Fixed effects**	**Random effects**	**Fixed effects**
Constant	-50.64 ***	-164.37 ***	-135.38 ***	-239.12 ***	160.63 ***	-117.52 ***	-38.72
	(-4.09)	(-3.98)	(-6.28)	(-11.26)	(4.03)	(-5.68)	(-0.97)
GDP: Japan	2.80 ***	1.26 ***	0.95 ***	4.24 ***	6.63 ***	0.81 ***	5.70 **
	(3.60)	(3.40)	(7.33)	(3.19)	(2.71)	(6.35)	(2.24)
GDP per capita: Japan	-0.32	1.01 **	0.85 ***	-2.08	0.03	0.22	-5.33 **
	(-0.40)	(3.40)	(5.56)	(-1.50)	(0.01)	(1.49)	(-2.03)
Distance		-2.05 **	-2.07 ***			-1.90 ***	
		(-2.56)	(-7.34)			(-6.87)	
GDP: Mexico	-0.36	13.32 ***	9.64 ***	11.72 ***	-19.91 ***	11.02 ***	-0.20
	(-0.34)	(4.26)	(5.72)	(6.62)	(-6.00)	(6.81)	(-0.06)
GDP per capita: Mexico	0.52	-24.45 ***	-14.88 ***	-18.45 ***	24.73 ***	-20.26 ***	-5.89
	(0.35)	(-4.78)	(-5.20)	(-7.34)	(5.27)	(-7.38)	(-1.27)
EPA dummy: Japan	-0.01	1.67 **	0.36	-0.12	0.24	-1.17 **	1.86 **
	(-0.03)	(2.04)	(0.74)	(-0.29)	(0.30)	(-2.49)	(2.41)
R2（within)	0.689	0.230	0.396	0.637	0.290	0.322	0.223
R2(between)	0.321	0.555	0.870	0.059	0.199	0.712	0.000
R2(overall)	0.301	0.474	0.765	0.089	0.173	0.637	0.006
Number of observations	425	388	423	421	420	426	400
Hausman test	41.22 ***	6.76	14.23	28.46 **	49.30 ***	10.14	32.14 ***
F test/ML test	38.60 ***	870.60 ***	351.42 ***	12.02 ***	34.24 ***	505.96 ***	13.00 ***
Selected model	Fixed effects	Random effects	Random effects	Fixed effects	Fixed effects	Random effects	Fixed effects

Data source: Authors' calculation.

Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level. The results for FTA dummies for NAFTA, G3, Chile, EU, and Central-America are not presented in the table. The Hausman specification test is used to decide which model, the fixed-effects model or the random effects model, to choose.

Table A.7 Gravity Model Estimation for Mexico's Exports at the Product Level: 1990-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Pork (fresh, chilled, or frozen)	Molluscs	Natural honey	Fruit and nuts	Fruit juices	Leather	Footwear with leather
Independent variables	HS0203	HS0307	HS0409	HS0811	HS2009	HS4107	HS6403
a) Pooled OLS							
Constant	-297.49 **	-229.41 **	54.61	-133.60 **	-30.05	-346.15 ***	66.94
	(-2.29)	(-2.12)	(0.57)	(-2.09)	(-0.59)	(-4.84)	(1.32)
GDP: Japan	1.40 ***	1.28 ***	0.76 ***	0.65 ***	0.69 ***	1.02 ***	0.85 ***
	(3.81)	(9.44)	(3.82)	(5.64)	(6.90)	(7.06)	(9.42)
GDP per capita: Japan	0.80	-0.02	1.02 **	1.07 ***	1.16 ***	-0.58 ***	1.30 ***
	(1.24)	(-0.11)	(2.54)	(5.96)	(7.09)	(-4.38)	(6.05)
Distance	-0.38	-0.23	-1.53 ***	-0.63 **	-2.36 ***	-1.25 ***	-2.73 ***
	(-0.50)	(-0.58)	(-3.26)	(-2.08)	(-10.70)	(-3.87)	(-10.47)
GDP: Mexico	20.33 *	19.23 **	1.02	8.63 *	5.81	20.66 ***	0.32
	(1.78)	(2.41)	(0.14)	(1.78)	(1.54)	(3.60)	(0.09)
GDP per capita: Mexico	-33.04	-36.39 ***	-10.57	-13.16	-14.76 **	-25.05 **	-9.10
	(-1.52)	(-2.81)	(-0.84)	(-1.63)	(-2.33)	(-2.48)	(-1.47)
EPA dummy: Japan	1.94 **	0.49	-1.09	-0.43	1.81 ***	0.70	1.53 ***
	(2.62)	(0.57)	(-1.23)	(-1.28)	(4.30)	(1.42)	(4.50)
Adj R2	0.599	0.449	0.401	0.514	0.556	0.425	
Number of observations	61	173	189	202	317	214	
b) Panel	**Fixed effects**	**Random effects**	**Fixed effects**	**Random effects**	**Random effects**	**Random effects**	**Fixed effects**
Constant	124.58	-256.39 ***	144.56	-168.43 ***	-5.04	-292.41 ***	-26.22
	(0.43)	(-2.81)	(1.63)	(-2.76)	(-0.10)	(-3.55)	(-0.51)
GDP: Japan	-33.11 *	1.23 **	-12.37 **	0.76 *	0.62 ***	1.29 ***	7.19 **
	(-1.80)	(2.34)	(-2.46)	(1.82)	(3.14)	(3.11)	(2.34)
GDP per capita: Japan	36.75 *	0.31	10.26 *	0.74	1.00 ***	-0.55	-6.97 *
	(1.74)	(0.42)	(1.93)	(1.27)	(4.19)	(-1.05)	(-2.00)
Distance		-0.43		-0.88	-2.17 ***	-0.95	
		(-0.37)		(-1.00)	(-4.94)	(-1.04)	
GDP: Mexico	27.96 **	20.80 ***	4.91	12.10 ***	3.76	17.17 ***	-1.32
	(2.17)	(3.08)	(0.86)	(2.67)	(1.00)	(2.76)	(-0.33)
GDP per capita: Mexico	-34.16 *	-38.32 ***	-3.62	-19.75 ***	-11.07 *	-21.59 **	-6.62
	(-1.68)	(-3.53)	(-0.42)	(-2.64)	(-1.76)	(-2.13)	(-1.19)
EPA dummy: Japan	0.15	1.20	-0.46	-0.15	2.00 **	0.88	2.33 ***
	(0.10)	(1.15)	(-0.46)	(-0.18)	(2.26)	(0.86)	(2.74)
R2（within)	0.216	0.129	0.127	0.074	0.054	0.226	0.213
R2(between)	0.173	0.234	0.022	0.661	0.840	0.344	0.005
R2(overall)	0.326	0.400	0.109	0.485	0.549	0.323	0.062
Number of observations	61	173	189	202	317	214	337
Hausman test	11.16 *	8.04	27.35 ***	8.80	16.96	8.74	23.26 **
F test/ML test	2.51 **	64.17 ***	17.50 ***	145.56 ***	109.22 ***	59.32 ***	8.08 ***
Selected model	Fixed effects	Random effects	Fixed effects	Random effects	Random effects	Random effects	Fixed effects

Data source: Authors' calculation.

Notes: figures in parenthesis are t value/z value. *** indicates that the results are statistically significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level. The results for FTA dummies for NAFTA, G3, Chile, EU, and Central-America are not presented in the table. The Hausman specification test is used to decide which model, the fixed-effects model or the random effects model, to choose.