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Competitive Positioning of Mexican Pork in Japan

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Abstract: Historically, Mexico has distinguished itself by its strong participation in exports to the US market; however, the pork sector's main destination is the Asian market, particularly Japan. Hence, this document aims to show the competitive position of Mexican pork in Japan during the period of 2000–2020, particularly by using Mexico, the United States, Canada, Denmark, and Chile as selected countries and considering these as the leading purveyors in the supply chain to the Japanese market. To achieve the proposed objective, a competitiveness analysis is developed through the Comparative Export Advantage methodology, strengthening it through the Constant Market Share (CMS). The results convey the growing competitiveness that Mexico is gaining in pork trade for the Japanese market, as well as globally. In addition, this research suggests that Mexican pork producers take the necessary steps toward increasing their level of competitiveness.

Keywords: Japan; trade; pork meat; competitiveness

1. Introduction

During the last several decades, it has been clear that the world has witnessed transformations in the economic, political, and social sectors. Specifically, the economic sector has seen constant movement in the markets. This has brought about processes for economic integration and thus a comparative advantagein satisfying customers' demands.

In Japan, analysis of competitiveness is mainly relevant for both dynamic market growth which represents goods and services commerce and for the processes of economic integration, establishing economic relations between the countries that make up the region. The flow of international business in this region has increased in recent decades, specifically since the founding of the Asia–Pacific Economic Cooperation forum (APEC), which promotes economic development in the Asia–Pacific region through trade liberalization and investment [1].

The aforementioned is an incentive for the development of different economic sectors in the region, promoting market sharing amongst various economic bodies. Regarding the trade of agrifood sector products between Mexico and the countries of the Asia–Pacific region, it is important to refer to competitiveness studies of products that have marketed and positioned the trade relations of the countries of that said region.

Historically, various products were traded between these nations, such as in the case of pork, in addition to playing an important role in human consumption. Production and consumption are aligned with agricultural development. Throughout history, one can observe that with an increase in the level of agricultural production, the consumption of pork increases incrementally, meaning that pig breeding is a prominent sector on all continents [2].

During the last few decades, the agricultural sector has undergone a transformation in the production and trade of its products. The pork industry in Mexico is one of the main economic bodies in the livestock subsector. In the last two decades, Mexican pig farming has faced a significant change in the economic environment in which it has been developing, which has caused variations in the rate of production growth. Currently, pork consumption

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is third in terms of the importance of meat production at a national level [3]. As a result of the dynamics that the livestock sector represents, mainly in terms of meat products, it is relevant to delve into the subject. This allows us to understand the competitive position of pork, which helps the business sector to learn about the opportunities that this industry has in Japan, and especially the possibility of expanding the sale of its products to the Asian market.

The importance of studying Japan in this research hinges on the fact that this country signed a complementation agreement with Mexico, but the most important issue is that Japan is the third largest importer of agrifood products in the world [4].

It is for this reason that the objective of this investigation was to develop a diagnostic for the competitive positioning of the pork trade in Japan. To accomplish this, a timeline from 2000 to 2020 was used for the export numbers of the contributing countries to the international trade of these products in the Japanese country and for analysis of the data using the Revealed Comparative Advantage methodology, also known as the Vollrath Index [5]. Additionally, the Constant Market Share (CMS) method, adapted by Ahmadi-Esfahani [6], was used.

The application of the Revealed Comparative Advantage analysis is relevant in contributing to understanding the competitive positioning of agrifood products through statistical analysis of the export numbers of a determined product. The analysis offers the advantage of identifying the periods during which the product maintained competitiveness and in which it fell short. The aforementioned analyses permit the industry, as well as policy makers, to identify patterns of competitiveness to stimulate the selected product, in this case namely pork meat. Moreover, the CMS analysis supports an understanding of the export behavior of pork product purveyors.

2. Literature Review

In the traditional economic theory, the concept of competitiveness is synonymous with the absolute advantage of Adam Smith and the comparative advantage of David Ricardo. Cost, productivity, efficiency, and specialization are the fundamentals of these concepts. They interpret the benefit of international trade for countries if they export goods or services with relatively lower costs and import goods or services with relatively higher costs [7].

Competitiveness is a key element of the market economy regardless of the sector concerned [8]. The economic literature cites several definitions for competitiveness. Indeed, the concept of competitiveness is inherent to the analyzed economic context and relates to three different levels, namely the individual company, individual sector, and the whole company, as well as to both the domestic and the international market [9].

Empirical evidence shows that the duration of global agrifood export competitiveness is heterogeneous at the agrifood sector product level. Long-term survival rates, as revealed by the comparative advantage indices, are among the highest for the Netherlands, France, Belgium, the USA, Argentina, and New Zealand. The level of economic development, the share of agricultural employment, subsidies to agriculture, and differentiated consumer agrifood products increase the likelihood of failure in the duration of comparative advantage, while the abundance of agricultural land and export diversification reduce that likelihood [10].

Since the prosperity of the agrifood sector in Canada critically depends on international trade, issues related to measuring, maintaining, and enhancing the competitiveness of major agrifood sectors in Canada assumed the center stage since the mid 1980's. Despite significant attention focused on the competitiveness of Canadian agriculture, no study has investigated how the competitiveness of Canadian agriculture evolved through time employing longitudinal data. This article measured the international competitiveness of the wheat, beef, and pork sectors in Canada employing data from 1961 to 2011. Results show that this country enjoyed international competitiveness in the wheat sector but not

in the pork sector during the entire period of this study. The competitiveness of the beef sector improved rapidly after NAFTA was implemented [11].

In the Asian region, there is a study from ASEAN countries about agricultural competitiveness. The aim of this study is to identify the competitiveness of this sector in the global market during the period of 1997–2015. The results show that ASEAN countries achieve the strongest competitiveness in rice, rubber, spices, vegetable fat and oils, wood, fuel wood, fish, and crustaceans. Vietnam, Thailand, and Indonesia are the most competitive whilst Brunei, Singapore, and Cambodia are the least competitive. They have convergent patterns in agricultural competitiveness, they successfully maintain ranking of the strong competitive sectors, and ASEAN countries obtain benefits from the regional integration and the specialization in competitive products [7].

3. Production and International Trade of Pork

Pork established its position in the market as a basic foodstuff many years ago [12]. Data show that China consolidates 55 percent of pork meat production, which positions its economy as the principal center of global production of this meat product (Table 1). With more than nine percent, the United States, representing North America, is another important producer at a global level. Likewise, another important production region is Europe, with leading producers Germany and Spain, comprising a joint 6.43 percent of global production. This is evidence shows that the three main centers of global production are Asia, led by China; North America, with the leader the United States; and Europe, with productions leaders Germany and Spain.

Table 1. Global pork meat production in 2021.

Country	%
China	55%
United States of America	8%
Germany	3%
Spain	3%
Brazil	3%
Russian Federation	3%
Viet Nam	2%
Canada	2%
France	1%
Others	19%

Source: Elaborated with data from the UN Comtrade database (2021).

The globalization of the world's economies and the processes related to trade liberalization and the free flow of capital and technology has consequences for the development of the pork meat sector. Hence, the importance of analyzing the import/export behavior lies in identifing the principal agents in the international trade of these products and inunderstanding economic and geographic trends. Figure 1 shows the evolution of export of the principal purveyors of pork meat in the world, with leading participants being the United States and four European economies.

In accordance with the UN Comtrade, during the period under study (2000–2020), the principal economic market participants in the purveyance of pork meat were explored. The United States was delineated in 2020 as the primary exporter with 2.191 million tons, while Germany maintained global market leadership between 2009 and 2018 in the export of meat products, but for 2019 its exports decreased by 59 percent.

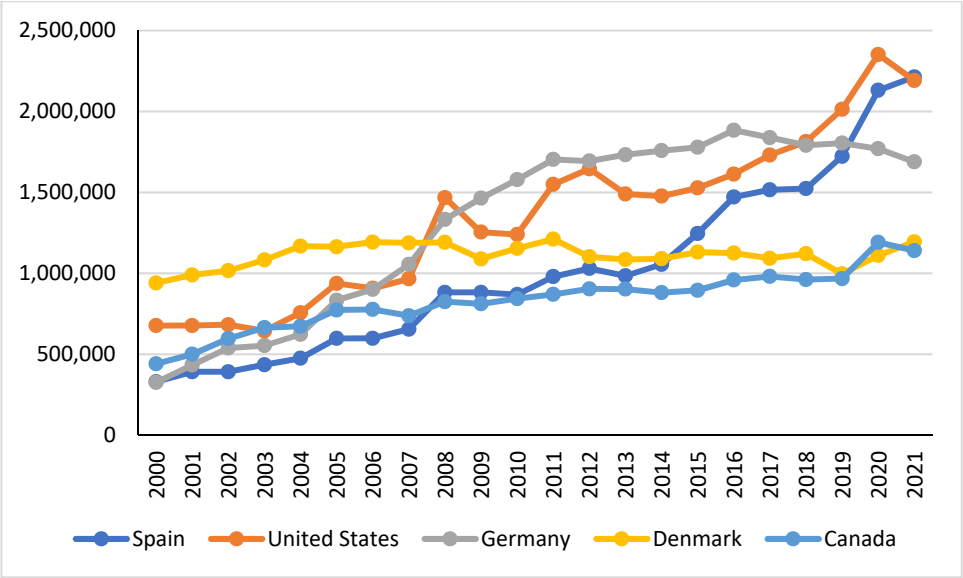

Figure 1. Leading global exporters of pork during 2000–2020. Source: Elaborated with data from the UN Comtrade database (2021).

Figure 2 shows the principal importing economies of pork meat: China, Japan, Mexico, Italy, and Germany. In the case of China and Mexico, they have seen an increase in consumption over the last ten years, which can be attributed to a change in consumption patterns, or rather, an increase in revenue. In Japan, Italy, and Germany, meanwhile, we can observe that trends have remained steady in recent years.

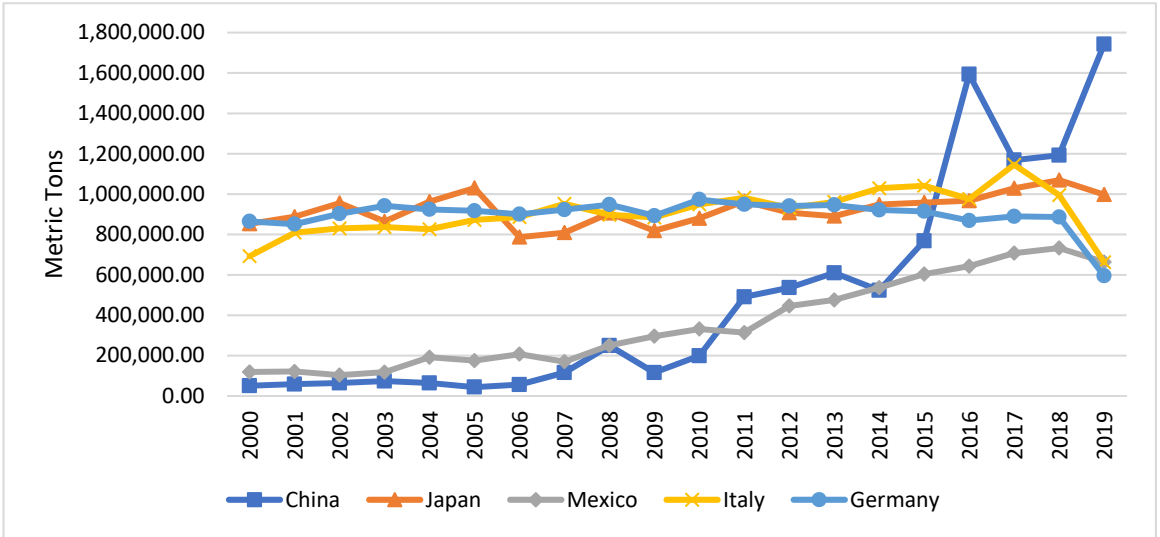

Figure 2. Leading global importers of pork during 2000–2019. Source: Elaborated with data from the U.S. Department of Agriculture. Foreign Agricultural Service. (2021).

It also points out that China, in addition to being considered the principal purveyor of pork meat on a global scale, also stands out as the primary consumer of said product. Nevertheless, maintaining the primary position in the production of this meat product is not enough to satisfy the demand in its own market, as the increase in import numbers has shown. In 2000, China imported 50,991 tons of meat and in 2008 it imported 249,612 tons. However, in 2009, caused by the effects of a global crisis, its imports decreased to 116,076 tons. In subsequent years, it can be found that imports increased significantly: in 2019 it imported 1,742,374 tons of said product.

There exists the possibility that this increase is related to migratory movements, or that the affluence of rural populations to urban zones spurring larger conurbations that stimulate the growth of consumption conjoined with the increase of revenue for the population to occupy cities with better wages, which causes an increase of both consumption of pork meat and other benefits [12].

Japan is known the have problems balancing its agrifood industry with its demand [13]. Currently, it is the second largest importer of pork meat. In 2008 this Asian economy's imports accounted for approximately half of its national consumption of this meat product, presenting an increase since 1990 when its imports presented roughly one quarter. Its leading purveyors in 2000 were Denmark, the United States, and Canada, with 33, 29, and 17 percent, respectively [14]. Presently, Mexico has been looking for a significant position in Japan's supply chain in an effort to compete with the aforementioned economies, looking for spaces to satisfy the demand for high added value to the Japanese.

Even though Mexico is one of the leading suppliers of meat products to Japan, it likewise needs to obtain this product from abroad to satisfy its own internal demand, or rather, obtain it mainly from the United States, which in 2014 provided more than 500 thousand tons to Mexico. As one can see in Figure 2, in 2005 a growing import process started, of more than 100 thousand tons, while in 2019 imports already exceeded 663 thousand tons. Nevertheless, in terms of quality, indications show that imported pork meat is of inferior quality to the pork produced nationally [15]. In general, it arrives frozen and registers a significant loss of liquid, and the spoilage window is shorter. Likewise, meat produced in Mexico has to pass through various processes of federal inspection, the Tipo Inspección Federal (TIF), which ensure better quality. The principal buyer of pork meat in Mexico is the food processing industry, which produces sausages, ham, canned meat, chorizo, etc.

4. Production and Trade of Mexican Pork Meat

The pork industry in Mexico is one of the main economic bodies in the livestock subsector. In the last two decades, Mexican pig farming has faced significant changes in the economic context in which it has operated due to variations caused in the production growth rate. Currently, pork meat consumption takes third place in terms of importance in the production of meat at a national level. It represents the production activity with the most significant uptake of feed grain production [3].

It is relevant to note the importance of the concentration of state-level production in Mexico, where Jalisco and Sonora produce around 40 percent of pork meat in the country. Likewise, Sonora has dedicated itself to specializing export processes, specifically to the Asian market, while Jalisco has dedicated itself to the national supply chain. For this reason, the industry has not been able to meet the demand of the Mexican market and had to fall back on the importation of pork meat from the United States [3].

In terms of international trade, Table 2 shows the evolution of Mexico's market share in total agrifood exports, which has varied between 2000 and 2020. It demonstrates that the highest percentage of international market share was in the year 2020, with 4.38 percent. In terms of the performance of meat product exports, it shows a constant market share during the said period. Specifically, meat products have considerably increased their market share: in 2000, the total of agrifood exports was only 4.31 percent, while in 2020, this increased to 14.37 percent. The noted increase is due to factors such as the increased use of technology in the pork industry and certification processes, which have contributed to the acceptance of these products in international markets.

In addition, it is important to note that market agents have found an opportunity to market this type of food product and one of the reasons is the futures market for its financing opportunity, which has made trading these products so attractive. Commodity futures play a major role in the financial markets. Commodity trade includes items such as precious metals, crude oil and other sources of energy, industrial metals, and agricultural products. The reasons for trading can be both speculation and hedging [16].

Table 2. Mexico. Total and agrifood exports. Share of pork meat exports. 2000–2020 (thousands of dollars).

Years	Total Exports (A)	Agrifood Exports (B)	% (B/A)	Meat Exports (C)	% (C/B)	Pork Meat Exports (D)	% (D/C)
2000	166,120,737	4,752,470	2.86	205,026	4.31	180,541	88.06
2001	158,779,733	4,435,331	2.79	214,365	4.83	190,196	88.73
2002	161,045,980	4,195,980	2.61	204,060	4.86	180,025	88.22
2003	164,766,436	5,022,502	3.05	172,780	3.44	142,473	82.46
2004	187,998,555	5,666,476	3.01	226,659	4.00	172,816	76.24
2005	214,232,956	5,981,081	2.79	310,746	5.20	191,975	61.78
2006	249,925,144	6,835,911	2.74	351,488	5.14	205,784	58.55
2007	271,875,312	7,414,951	2.73	431,825	5.82	243,615	56.42
2008	291,342,595	7,894,639	2.71	536,322	6.79	333,599	62.20
2009	229,703,550	7,725,938	3.36	468,298	6.06	237,945	50.81
2010	298,473,146	8,610,443	2.88	635,654	7.38	277,635	43.68
2011	349,433,386	10,309,451	2.95	957,717	9.29	330,437	34.50
2012	370,769,890	10,914,240	2.94	1,240,900	11.37	388,526	31.31
2013	380,015,051	11,245,759	2.96	1,185,224	10.54	453,180	38.24
2014	396,911,688	12,181,297	3.07	1,380,119	11.33	435,040	31.52
2015	380,549,593	12,970,645	3.41	1,494,755	11.52	402,616	26.94
2016	373,946,694	14,672,300	3.92	1,515,309	10.33	441,435	29.13
2017	409,401,075	15,827,532	3.87	1,634,673	10.33	528,760	32.35
2018	450,572,161	16,254,609	3.61	1,668,748	10.27	551,464	33.05
2019	460,603,695	17,832,328	3.87	2,099,503	11.77	720,829	34.33
2020	416,999,406	18,284,587	4.38	2,627,624	14.37	916,176	34.87

Source: Elaborated with data from the Banco de México (2021).

Nowadays, commodity markets offer diversification benefits to traditional stock and bond portfolios and the potential of an inflation hedge. As a result, commodity markets have experienced a dramatic expansion in investor interest over the past few decades [17].

With respect to pork meat exports, this product has been losing market share within the meat export sector as a whole: between 2000 and 2003, it represented 80 percent of all meat exports. However, from 2011 to 2000, its market share was a mere 30 percent. This situation can be attributed to the change in the diet of global consumers due to the preference for and cost of foodstuffs, among which poultry and fowl have made significant gains.

Exports of Mexican pork meat since 2000 have concentrated on the markets in Japan and the United States, but starting in 2005 until 2019 exports have focused specifically on Japan, as Figure 3 shows. It is important to point out that in 2005 Mexico and Japan signed an Economic Partnership Agreement which facilitates trade of this type of product, a tool that has contributed to the economic momentum between these economies.

Likewise, it is important to add that the Japanese Department of Agriculture, Forestry, and Fishery solely recognizes the states of Baja California, Chihuahua, Jalisco, Sinaloa, Sonora, and Yucatán as swine flu-free states. Nevertheless, starting on 1 February 2016, the department approved the Animal Health Export Certificate. Due to this, currently any entity in the Mexican republic may export pork meat to Japan [4].

For 2020, pork meat exports to Japan were so significant in that country that they made up 14.2 percent of all sales to Japan, thus positioned in first place above passenger cars and automotive parts and accessories, which had a market share of 9.6 and 7.2 percent, respectively [18], On another level, in 2019, China appeared as a procurer of Mexican pork meat, with a supply of 29,113 tons on behalf of Mexican exports, and by 2020 it was already demanding 81,689 tons.

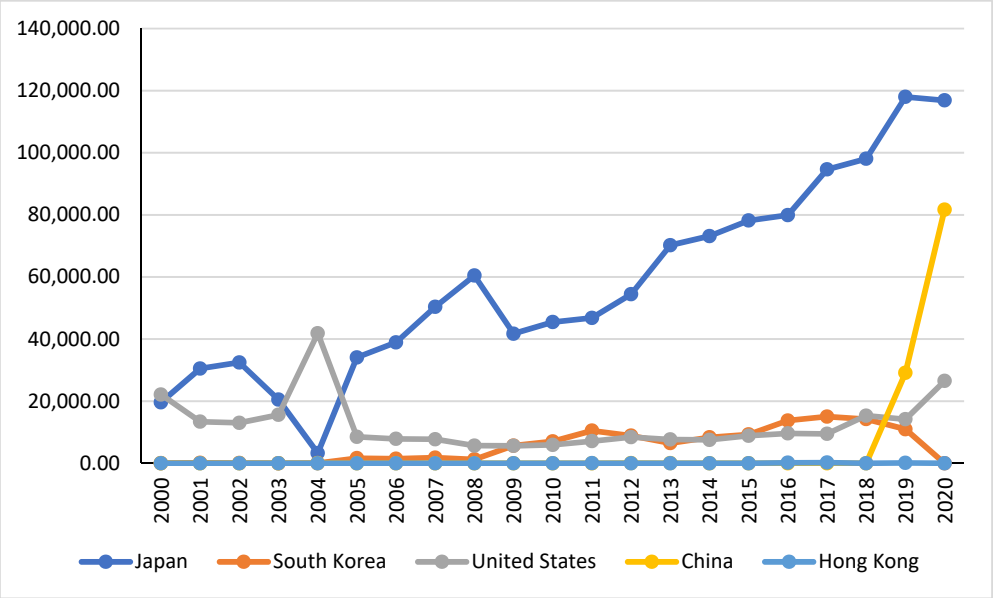

Figure 3. Pork exports from Mexico. Source: Elaborated with data from the U.S. Department of Agriculture. Foreign Agricultural Service. (2021).

5. Materials and Methods

To conduct this empirical exercise, the performance of exports and imports of the principal member states of the international trade in pork meat in Japan was used for the period 2000–2020.

Comparative Advantage is a central concept in economic theory. A better understanding of how it relates to the real world is helpful in identifying the consequences of political change and clarifying economic wellbeing. The empirical measures of Added Comparative Advantage can identify the direction and the impetus that investment should take, and the direction a country's trade should take to benefit from international differences in the supply and demand of products and factors [5]. The index consists of measuring revealed comparative advantages for specific agricultural products using information from actual trade data.

The proposed index is designated the Comparative Export Advantage (VRE) and is defined as:

$$VRE_{ai} = (\frac{X_{ai}}{X_{ni}})/(\frac{X_{ar}}{X_{nr}})$$

where:

VRE_{ai} = Comparative Export Advantage of goods a in country i.
X_{ai} = Export value of goods in country i.
X_{ni} = Total export value (except goods a) in country i.
X_{ar} = Global export value of goods a (except country i).
X_{nr} = Total export value (except a) globally (except country i).

If VRE_{ai} is greater than 1, this indicates that the country has a Revealed Comparative Advantage of said product. If it is less than the unit, the country has a comparative disadvantage. The greater the value of this index, the higher the level of specialization of this country of that product y; therefore, it is "revealing" greater competitiveness. Changes in this indicator over time give us information about trends in the competitiveness of the product during a determined period. If it increases, it indicates that the country is gaining competitiveness, and if it decreases, it is losing competitiveness.

To strengthen the competitiveness analysis, the method of Constant Market Share (CMS) was developed. This method allows for explaining changes in exports of a determined product drawn from the structure and competitiveness. Richardson [11] analyzed its theoretical and empirical limitations, and several authors have presented improved versions

broadening the breakdown with the purpose of resolving these limitations. Jepma's [19] improved version was adapted to a product and market case by Ahmadi-Esfahani [6], who deconstructed export changes on two levels: first, direct effects, and second, the components of each effect.

The first level of deconstruction is defined in the following manner:

$$\Delta q = S_{j0}\Delta Q_j + \Delta S_j Q_{j0} + \Delta S_j \Delta Q_j$$

where:

S = exporter country's market share of the total exports of pork meat to the destination market.

S_j = exporter country's market share of the total exports of pork meat to each destination market.

Q = quantity of total of total exports of pork meat to the destination markets.

Q_j = quantity of total exports of pork meat to each destination market.

$S_{j0}\Delta Q_j$ = Structural Effect. This refers the expected change in exports if the initial market shares of a country in the global market and the Japanese market remain constant. If it is positive, this indicates that an increase in demand for this product will positively affect the export increase.

$\Delta S_j Q_{j0}$ = Competitiveness or Residual Effect. This indicates the part of the export changes that can be attributed to changes in competitiveness that have occurred in the course of the period. If it is positive, this means that the country has increased competitiveness, and if it is negative, the country has lost competitiveness.

$\Delta S_j \Delta Q_j$ = Interaction or Secondary Effect. This refers to the influence of interaction between changes in market share and changes in demand. On a secondary level of deconstruction, every one of these three effects is divided in two, and a total of six effects are obtained:

$$\Delta q = S_{t0}\Delta Q_j + \left(S_{j0}\Delta Q_j - S_{t0}\Delta Q_j\right) + \Delta S_t Q_{j0} + \left(\Delta S_j Q_{j0} - \Delta S_t Q_{j0}\right) + \left(\frac{Q_{t1}}{Q_{t0-1}}\right)\Delta S_j Q_{j0} + [\Delta S_j \Delta Q_j - \left(\frac{Q_{t1}}{Q_{t0-1}}\right)\Delta S_j Q_{j0}]$$

where:

$S_{t0}\Delta Q_j$ = Growth Effect. This calculates the part of the increase of a country's exports that can be attributed to the growth of global demand for this product. Hence, it is the possible change in exports that could have occurred if the market share of an exporter in the global market had been maintained constantly during the period.

$S_{j0}\Delta Q_j - S_{t0}\Delta Q_j$ = Market Effect. This represents the additional expected change in exports if the exporter maintains its initial share in the Japanese market during the period. If the result is positive, this indicates that the country in question tends to concentrate its sales of pork meat in rapidly growing markets, such as Japan.

$\Delta S_t Q_{j0}$ = Pure Residual Effect. This refers to the part of the hypothetical export change that can be attributed to changes in general competitiveness.

$\left(\Delta S_j Q_{j0} - \Delta S_t Q_{j0}\right)$ = Static Structural Residual Effect. This calculates the part of the hypothetical export change related to changes in export, specifically in the Japanese market.

$\left(\frac{Q_{t1}}{Q_{t0-1}}\right)\Delta S_j Q_{j0}$ = Pure Secondary Effect. This represents the relation between changes in the market share of an exporter in the Japanese market and changes in the level of global demand.

$\left[\Delta S_j \Delta Q_j - \left(\frac{Q_{t1}}{Q_{t0-1}}\right)\Delta S_j Q_{j0}\right]$ = Dynamic Structural Residual Effect. This measures the interaction between changes in the market share of an exporter in the target market with a change in demand in said market.

6. Discussion of the Results

The competitiveness studies have given an opportunity to discern what has been the positioning of selected products in different countries or regions as a destination. The

Comparative Export Advantage (VRE) methodology has been used in various studies which have been able to discern the competitive level of agrifood products specifically. One can find studies such as [20], which identified the competitiveness of wheat in Canada and Australia, as well as those which identified the factors which caused its decrease. Concerning the meat industry, Comparative Export Advantage analysis has also been used [21] to analyze the competitiveness of beef in the United States market, concluding that there has been a substantial increase in market share in the United States. The same methodology has also been used in several other studies [22–24].

With respect to the results of this study, in Figure 4 the results of the Comparative Export Advantage of pork meat are represented. One can observe that in the global market, Mexican pork meat does not have a Comparative Export Advantage up until 2018, which suggests that this product did manage to improve its export performance during the analyzed period. Nevertheless, it can be noted that from 1990 to 1997, a significant increase in the VRE index therefore occurred. We can consider the efforts that were pooled in the export of this product; however, the indicator shows that it was not successful in increasing its competitive advantage during the first years.

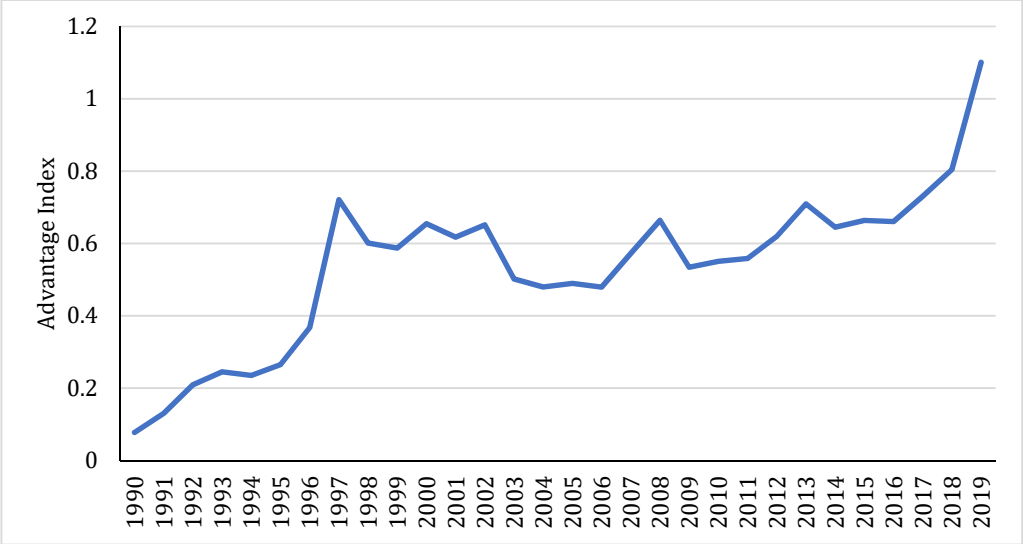

Figure 4. Comparative Export Advantage. Source: Elaborated with data from the United Nations Food and Agriculture Organization (2021).

That said, it should be noted that the competitiveness of this product at a global level precedes the commercial launch in the country, which has not only produced changes in employers of the productive base and of foreign trade, it has also generated a favorable trend towards globalization of the agrifood industry [25]. Another element that has favored the globalization of agrifood products, and specifically the pork meat trade with Asia, is the Economic Partnership Agreement between Mexico and Japan. This policy has favored a stimulus of said meat products to enter the Asian market.

In this sense, pork companies have the possibility of continuing with adequate strategies to maintain or increase their exports to the Japanese market, as has been seen from the trade policy called the Economic Association Agreement between Mexico and Japan, which has helped to strengthen the commercial relations of these two countries, benefiting the pork sector and in this sense generating competitiveness and increasing employment and income of the population in Mexico.

This product obtained a competitive advantage since the year 2019. Nevertheless, during the period under study, it has shown a positive trend, which has permitted it to obtain a place in the global market.

The constant market share indicator shown in Table 3 presents the various factors which have generated changes in market share in the Japanese market. One of the elements that can be attributed to the increase of Mexican pork competitiveness is the growing use of technology in this industry and the increase of federal inspection (TIF) traces.

Table 3. Constant Market Share Analysis.

Effect	Mexico	Canada	Denmark	United States	Chile
Change in exports	1,112,939.55	1,218,744.53	299,095.66	844,360.36	241,969.85
Structural Effect	−15,530.85	−67,079.07	−115,739.37	−259,582.70	−5322.28
Competitiveness or Residual Effect	335,838.43	420,573.29	103,693.75	330,367.78	75,118.53
Interaction or Secondary Effect	792,631.98	865,250.31	311,141.29	773,575.29	172,173.61
Growth Effect	−5209.84	−54,309.98	−83,333.47	−62,231.94	−1420.98
Market Effect	−10,321.01	−12,769.10	−32,405.90	−197,350.76	−3901.31
Pure Residual Effect	8488.03	14,258.11	−38,458.96	26,243.38	13,139.13
Static Structural Residual Effect	327,350.40	406,315.19	142,152.70	304,124.40	61,979.40
Pure Secondary Effect	1,041,748.95	494,070.28	16,801.04	554,662.52	923,432.66
Dynamic Structural Residual Effect	−1,313,527.94	−861,241.40	−93,915.09	−957,462.67	−976,346.97

Source: Elaborated with data from the United Nations Food and Agriculture Organization (2021).

The aforementioned, combined with certifications that have made the industry accredited, can be seen as a mark of quality for the national and international markets.

During the period under study, 2000–2020, the main suppliers of pork to Japan, namely Mexico, Canada, the United States, Denmark, and Chile, have demonstrated positive changes in terms of market share. One can confirm in Figure 1 that Denmark's and Chile's market shares have been in decline in recent years, specifically since the year 2007. Countries that gained market share were the United States, Canada, and Mexico.

The main increase in Mexico's market share was in the factor of interaction, showing the interaction that exists between changes in market share, changes in demand, and the effect of the latter, which indicates the interaction between changes in Mexican exports to the Japanese market and the change in global demand.

In the case of Canada, we can see that it dominates the selected countries in the factor of competitiveness, which can be attributed to changes in competitivity that have occurred over the entire period. Nevertheless, in Figure 1 the importance that the United States has as a global supplier can be seen, positioning itself as the second largest exporting economy of pork meat.

7. Conclusions

The Asia–Pacific region has taken a leading role in the production and trade of goods and services, positioning itself as one of the highest performing regions in terms of logistics at a global level. Mexico forms part of this economic process, and part of its economic integration process occurs through its industries. This study analyzed the importance of Mexican pork meat to pork meat in Japan, an economy that has been characterized by its high demand for this meat in the world.

It was successful in identifying the main centers of the production of pork meat, which are located in Asia and North America. China and the United States are these producers. In terms of international trade, Mexico has emerged as an importing economy since 2009, and since 2020 it has positioned itself as the country with the most significant number of imports of this product.

At a national level, one can observe that the agrifood industry has maintained a constant market share in the total exports of Mexico. In the particular case of pork meat, this has dropped performance in relation to the total of meat products. At the start of the period under study, pork meat had a market share of over 88 percent, even accomplishing periodic market shares of over 80 percent. By the end of the studied period, specifically in 2020, the pork meat industry represented only 29 percent in relation to other exported meat products.

Mexico has demonstrated growth in terms of competitiveness, in the period under study, even though it had not accomplished a comparative advantage in the industry up until 2019. It has focused efforts to establish a growing competitive tendency during the last decades. It is clear that Japan has been a key procurer of Mexican exports; in significant part, this has been due to good trade relations that Mexico has established with this country.

Regarding the limitation of the research, the authors sought a way to carry out a more in-depth analysis of the effects of COVID-19 on the competitiveness of this product. However, the databases do not provide updated data for all countries, which makes it difficult to give an assertive judgment with this methodological technique.

The findings allow for the interpretation that to continue to strengthen the trade of pork meat, to maintain Mexico's competitiveness, and to continue strengthening its trade relations with Japan in addition, it should explore the Chinese market for the export of these types of products. Finally, using the data to determine export trends, it emerged that China has appeared as a new market in the supply of pork meat in recent years, which represents an opportunity for integration of the agrifood industry. At the same time, we must not lose sight of the fact that this economy has been characterized for its growth in the demand for products with high added value.

As it has been shown that China is a new opportunity for the Mexican market, as well as the competitiveness of Mexico in recent years in the Japanese pork market, the authors recommend the development of new lines of research, focusing on the integration of new agrifood markets under the Global Value Chain approach, which would allow various aspects of analysis, and thus give Mexican agrifood producers the opportunity to identify the elements where they can increase their competitiveness.

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