

China’s Emerging Market for Maple Syrup: Opportunities and Challenges for U.S. Exports

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Abstract

While China’s maple syrup imports have increased steadily since 2009, from 2.85 metric tons in 2009 to 219.96 metric tons in 2020, the share of U.S. maple syrup in China’s imports has been less than 9%. This study reviews the development and trends of China’s maple syrup imports, assesses the strengths, weaknesses, opportunities, and threats of U.S. maple syrup in China, and derives recommendations for expanding U.S. exports to China. The U.S. maple industry needs to incorporate Chinese consumer preferences and market characteristics in its product development, trade negotiation, and market promotion to capture the opportunities in the Chinese market.

Keywords: U.S. maple syrup, maple syrup exports, China, SWOT analysis

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Introduction

As a large country that does not produce maple syrup, China's maple syrup imports increased steadily from 2.85 metric tons (mt) in 2009 to 219.96 mt in 2020 and then dropped to 157.01 mt in 2022 (United Nations Comtrade Database [UNCD], 2023). While China's limited maple syrup imports in the early years were used primarily to serve the demand of foreigners visiting or living in China, the significant increase in its imports in recent years has made maple syrup more widely available to Chinese consumers, mainly through online platforms. China as an emerging market for maple syrup may provide significant opportunities for the U.S. maple syrup industry, which has achieved remarkable growth in production volume since the early 1990s but has experienced a downward trend in its producer price since 2008 (USDA, 2023).

As shown in Figure 1, following an increasing trend in both production and average nominal producer price from 1992 to 2008, U.S. maple syrup production continued the increasing trend after 2008, except for the significant drops in 2020 and 2021 due to poor sugaring weather. On the contrary, the average nominal producer price has shown a downward trend since 2008, except for 2020 and 2021. The downward trend in average producer price since 2008 is more apparent when the nominal price is converted into the real price in 2008 dollars. For example, when the nominal producer price dropped from \$40.74 per gallon in 2008 to \$34.70 per gallon in 2022, the real producer price in 2008 dollars declined from \$40.74 to \$25.52 per gallon over the same period. Figure 1 further suggests that the average producer price tended to increase in the years with lower productions and decrease in the years with higher productions. This pattern is consistent with the economic principle of how market supply and demand work together to determine the market price.

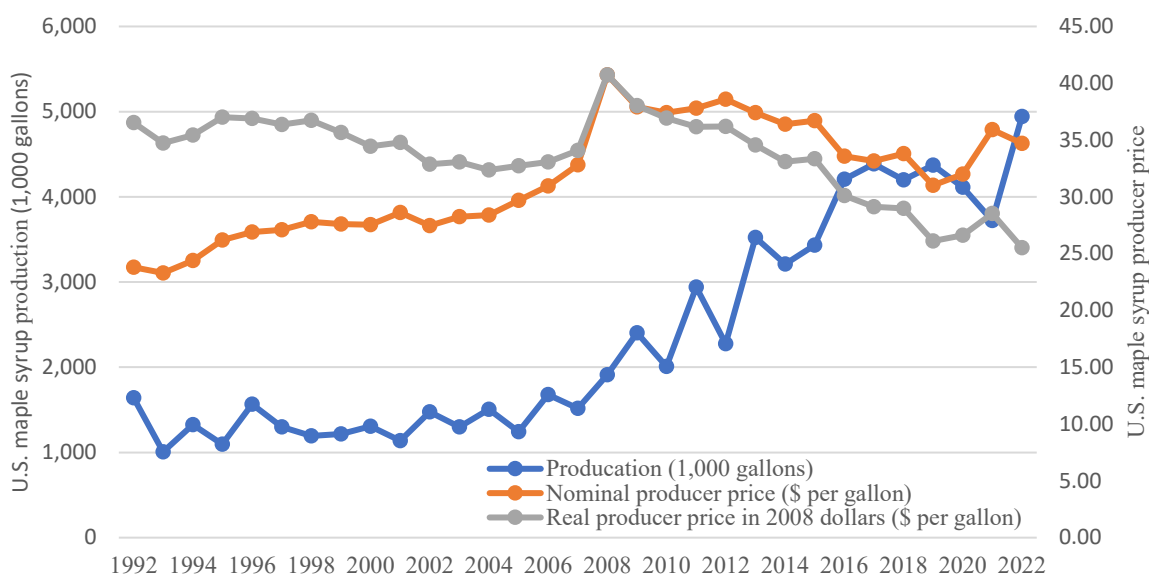


Figure 1. U.S. Maple Syrup Production and Average Producer Price, 1992–2022

Data sources: Production and nominal price data were from USDA NASS (1992–2023) and real price was calculated from the nominal price and consumer price index (CPI) from U.S. Federal Reserve Bank of Minneapolis (2023).

As U.S. maple syrup production is likely to maintain the increasing trend, a major challenge for the industry is to increase the demand in the domestic and foreign markets to reverse the downward trend in producer price as well as to reduce its fluctuations over time (Farrell and Chabot, 2012; Gabe, 2014; Becot et al., 2015). This study is motivated by the growing need for information on foreign demand for U.S. maple syrup and the potential opportunities in China's emerging market for maple syrup.

With a long history of an integrated food production system of grains, fruits, vegetables, nuts, livestock, seafood, etc., China's regional food consumption patterns have historically been determined by its regional food production. For example, rice has been a major staple food in Southeast China and wheat has been a major staple food in Northwest China, predominantly due to the product availability and relative prices. However, as a result of China's ongoing transition from a centrally planned economic system to a market economic system since the early 1980s, the dependence of food consumption on local food production in China has significantly and steadily declined for two major reasons. First, the transportation of food products, including both staple and non-staple food products, from production regions to consumption markets in China has improved remarkably in terms of costs and efficiency due to the development of transportation infrastructure, such as highway and train systems, and the reduction of government interventions in food transportation and distribution (Huang and Tian, 2019). Second, China's food imports have increased significantly since the early 1990s, particularly since China joined the World Trade Organization (WTO) in 2001 (Cao et al., 2021; Liu and Zhou, 2021). China has emerged as a large importer of many food and feed products, such as soybeans, vegetable oils, powdered milk, frozen pork, whey, and alfalfa (USDA, 2020; Wang and Zou, 2020; Ren et al., 2021). China's food self-sufficiency rate, calculated using data on calories from 54 major food products, decreased steadily from 94% in 2000 to 83% in 2010 and reached a record low of 76% in 2020 (Hadano, 2022).

China has gradually emerged as a large importer of many food products. Its maple syrup imports increased rapidly from 2.85 mt in 2009 to 219.96 mt in 2020 and then dropped to 157.01 mt in 2022 (UNCD, 2023). Canada and the United States, as the world's two largest maple syrup producers and exporters, have both made efforts to introduce maple syrup to Chinese consumers and increase their exports to China. For example, the Canadian government provided \$2.2 million to help maple syrup producers in the province of Quebec expand and diversify their exports to the United States, United Kingdom, Germany, Japan, and China (Desjardins, 2019). In the United States, the USDA has funded a number of educational, research, and Extension projects for promoting the maple syrup industry and exploring new market opportunities for U.S. maple syrup in the United States and abroad. As the largest maple syrup producer in the United States, the state of Vermont has made efforts to introduce and promote its maple syrup in Australia, the Republic of Korea, Japan, China, and several other nations. For example, the Vermont Chamber of Commerce maintained an office in Shanghai, China's largest city, to increase the visibility of Vermont's products, including maple syrup, in China for many years until the start of COVID-19.

Although China has emerged as a large market for maple syrup and significant efforts have been made by both government agencies and the maple industry in the United States and Canada to promote maple syrup in China, there is a dearth of information and many unanswered questions

about the Chinese market for maple syrup. For example, how is maple syrup imported and sold in China? What maple syrup attributes are important to Chinese consumers? Why has U.S. maple syrup had a very limited market share in China? How can we enhance Chinese consumer acceptance and preferences for U.S. maple syrup? What are the traditional Chinese foods and recipes that may complement or include maple syrup? This study is motivated by the growing need for information and answers to the above questions about maple syrup in the Chinese market. Specifically, this paper reviews the development and trends of China's maple syrup imports, analyzes Chinese market characteristics and consumer feedback on their purchase of maple syrup, and derives recommendations for the U.S. maple syrup industry to expand its maple syrup exports to China. This is likely the first or one of the first studies on China's maple syrup market.

China's Maple Syrup Imports

Maple syrup trade data used in this study are from the UNCD (2023). For China's annual maple syrup import, the searchable database provides data on the import quantity and value reported by China as well as by the exporting quantities and values reported by the exporting nations. Although the import quantity and value reported by China for each year should theoretically be equal to the corresponding sums of export quantities and values reported by the exporting nations, there are significant differences for all the years of the study period. Furthermore, the data reported by the exporting nations seems to contain more errors. For example, the maple syrup export quantity to China reported by Myanmar for 2020 and 2021 were significantly greater than China's total import quantity reported by China, and there is no supporting data that Myanmar has been a large maple syrup producer or exporter. Due to the concern about the quality of data reported by the exporting nations, this study uses the import data reported by the importing nations.

The trade data of "China" in the UNCD includes "mainland China" only and does not include Hong Kong and Macau. Although Hong Kong and Macau have been special administrative regions of China since 1997 and 1999, respectively, they are listed separately from China in the UNCD. Also, Taiwan is included in the database under "Other Asia, not elsewhere specified" (UN Statistics Division, 2023). It is beneficial to examine and compare the development and trends of China's maple syrup imports to that of Hong Kong, Macau, and Taiwan due to their similar culture, food consumption patterns, and consumer characteristics. The experience of Hong Kong, Macau, and Taiwan with significantly higher per capita income than that in mainland China may shed light on China's future demand for maple syrup.

Maple syrup imports of mainland China, Hong Kong, Taiwan, and Macau from 2009 to 2022, reported in Figure 2, suggest three major findings. First, their total maple syrup imports increased significantly from 41.14 mt in 2009 to 383 mt in 2020 and then dropped to 312.77 mt in 2022, resulting in an average annual growth rate of 16.89% from 2009 to 2022 and 24.50% from 2009 to 2020. The rapid growth suggests that this region has emerged as a significant import market for maple syrup in Asia. Second, mainland China accounted for most of the increase in this region's total imports of maple syrup over the study period, as its share increased from 6.93% in 2009 to 57.44% in 2020 and then dropped to 50.20% in 2022. Third, Macau's maple syrup imports have been limited, and its annual imports never exceeded 1 mt over the study period.

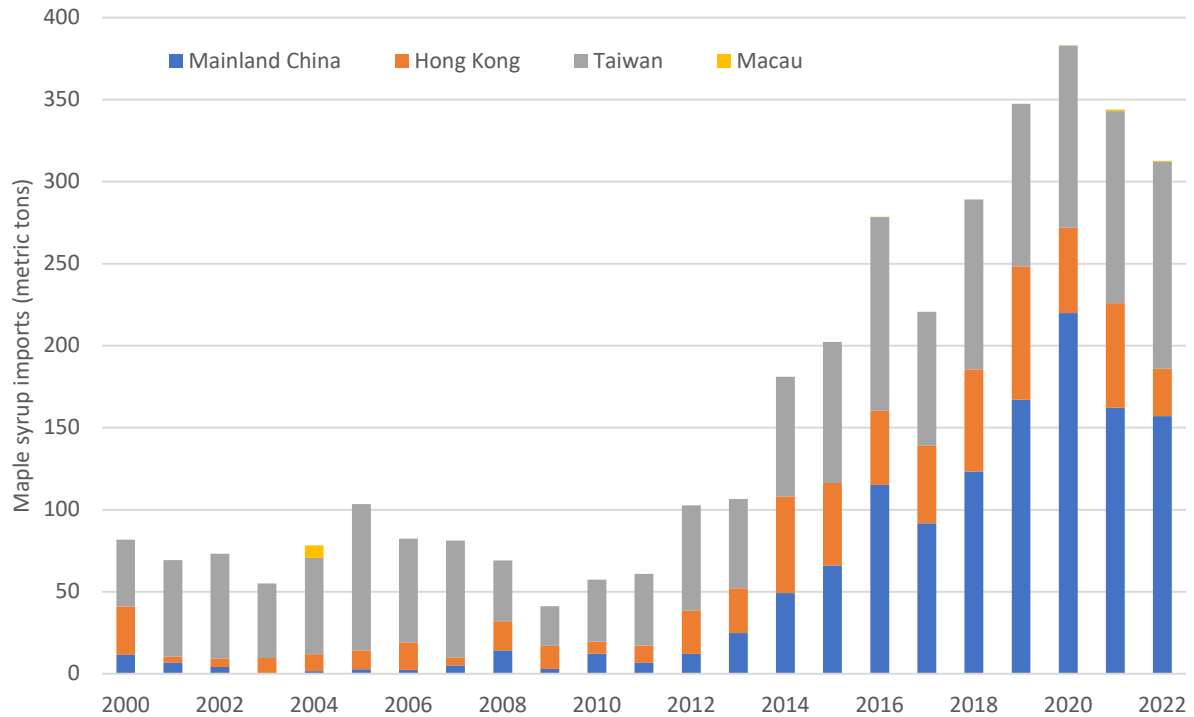


Figure 2. Maple Syrup Imports of Mainland China, Hong Kong, Taiwan, and Macau, 2009–2020

Data source: United Nations Comtrade Database (2023).

While data from the UNCD (2023) suggests that both Hong Kong and Taiwan exported maple syrup to China (i.e., mainland China) during the study period, there is no information on whether the exports of maple syrup from Hong Kong and Taiwan to China were included in China's total imports reported by the Chinese government. As discussed earlier in this section, there are significant differences between the data reported by the importers and those reported by the exporters in the database. A preliminary analysis of the import and export data of Taiwan and Hong Kong over the period of 2005 to 2022 indicates that likely about 10.93% of Taiwan's maple syrup imports were exported to China and about 11.62% of Hong Kong's imports were exported to mainland China.

The development and trends of Hong Kong and Taiwan's maple syrup imports in relation to their populations may indicate the preferences of Chinese consumers for maple syrup as well as foreshadow the market potential in mainland China due to their similar consumer characteristics and food consumption patterns. According to the 3-year average data from the UNCD for 2020 to 2022, Hong Kong and Taiwan imported an average of 6.57 and 4.95 grams of maple syrup per capita per year, respectively, but the corresponding value for mainland China was only 0.13 grams per capita over the same period. If the per capita import of mainland China reached 10% of Taiwan's per capita import, its total import would increase to 920 mt.

In addition to Taiwan and Hong Kong, Japan and the Republic of Korea's maple syrup import trends may also foreshadow the future growth of China's maple syrup market due to their similar food consumption and dietary history and patterns. Data from UNCD (2023), presented in Figure 3, suggest three major findings. First, Japan's maple syrup imports have increased significantly since 2000, from 1,352.76 mt in 2000 to 3,022.79 mt in 2022. Japan was the sixth largest importer of maple syrup in 2022, with a share of 4.8% of the global import. Second, the Republic of Korea's maple syrup imports increased dramatically from 39.70 mt in 2000 to 1,037.20 mt in 2022, resulting in an average annual growth rate of 15.99% over the period. Third, although the total maple syrup imports of mainland China, Hong Kong, Taiwan, and Macau increased significantly from 2000 to 2022, their total imports were much less than the imports of Japan and the Republic of Korea, especially in relation to their populations. For example, in terms of the average annual per capita import from 2020 to 2022, it was 23.80 grams for Japan and 19.42 grams for the Republic of Korea, but only 0.24 grams for the Greater China region (i.e., mainland China, Hong Kong, Taiwan and Macau) and 0.13 grams for mainland China.

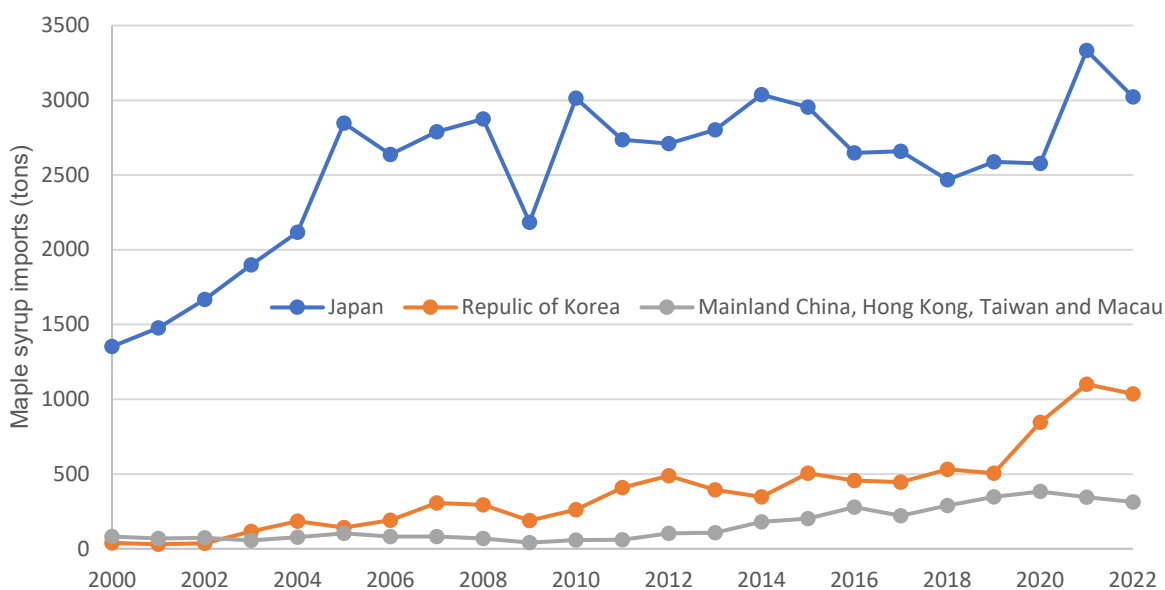


Figure 3. Maple Syrup Import Quantity of Japan, Republic of Korea, and Mainland China, Hong Kong, Taiwan, and Macau, 2000–2022

Data source: United Nations Comtrade Database (2023).

China's rapid growth in maple syrup imports in recent years and the experience of Taiwan, Hong Kong, Japan, and the Republic of Korea over the past two decades suggest that Chinese, Japanese, and Korean consumers likely have a strong acceptance of and preference for maple syrup as a foreign product when the product is available to them. The maple syrup market trends of Taiwan, Hong Kong, Japan, and the Republic of Korea, regions and countries possessing many food consumption and dietary characteristic similarities to that in mainland China, may also foreshadow the great potential of mainland China's imports of maple syrup in the future. On the other hand, with significantly lower per capita income and more government interventions in food imports as compared to Japan, the Republic of Korea, Taiwan, and Hong Kong, mainland China's future

growth in maple syrup imports will be determined highly by its income growth and trade policies, especially the trade policies with Canada and the United States. In recent years, there has been an increase in trade disputes between China and the United States as well as Canada and Taiwan.

Major Characteristics of China's Maple Syrup Market

Due to the lack of information and literature on China's maple syrup market, this study has collected primary data from media reports, retailers' websites, and our visits to supermarkets and import food stores in five large Chinese cities (Beijing, Shanghai, Wuhan, Xian, and Changchun) in the summer of 2021. Data collected through this study suggests three major findings. First, maple syrup products sold in China are not packaged and labeled for the Chinese market, but many Chinese retailers have added a label with information in Chinese. Figure 4 shows two maple syrup products sold at a Carrefour supermarket in Beijing in August 2021. The label in Chinese generally includes the brand name translated into Chinese, weight or volume, the country of origin, production and expiration dates, importer and/or distributor names and their addresses and phone numbers, and nutritional information.



Figure 4. Two Maple Syrup Products Found in a Carrefour Supermarket in Beijing

Data source: Photos of the authors' research team.

Second, according to data collected on maple syrup products with importer information that were sold online or in stores in China, maple syrup products were primarily imported by small importers with none of them being imported by a well-recognized large food importing company in China. Third, the major marketing channels of maple syrup in China are online sales and small grocers that specialized in imported food products and consumer goods in large cities. For online sales, Taobao.com and jd.com, China's two largest online retailers, offer more than 1,500 maple syrup listings each. The number of stores specializing in imported food products has increased rapidly in Shanghai and other large cities in recent years. These stores are generally owned and managed by franchise owners and most of them are located in neighborhoods with relatively high average income or more foreign residents. Data from China's 2020 Census indicated 845,697 foreigners were living in China in 2020, reflecting an increase of 42.41% from 593,832 in 2010 (National Bureau of Statistics of China, 2022). Foreigners living in China play an important role in introducing and popularizing foreign food products like maple syrup to Chinese consumers.

Among the 50 supermarkets we visited in Beijing, Shanghai, Xian, and Wuhan in the summer of 2021, only four carried maple syrup products. Further, a search of “maple syrup” in Chinese from the top 10 chain supermarkets’ websites in China (China Resources Vanguard, RT-Mart, Yonghui, Walmart, Lianhua, Freshhema, Wu-Mart, Carrefour, Jiajiayue, and Hyper-Mart) did not yield any results. Most of the large international and national chain supermarkets in China do not sell maple syrup, likely because their estimated demand quantity is not large enough to warrant shelf space. On the other hand, most of the large chain supermarkets in China have started to dedicate a section of shelf space for imported food products, including beer, wine, coffee, chocolates, snacks, and baby formulas. This could be a potential platform for maple syrup as an imported food product to be introduced to Chinese consumers through large supermarkets.

To assess the preferences and feedback of Chinese consumers who had purchased maple syrup products online, the top 200 maple syrup products listed at Taobao.com, China’s largest online retailer, were reviewed in December 2021. These were the top 200 listings of maple syrup products as ranked by the number of sales. Similar to Amazon.com and other online retailers, one vendor could have multiple listings, and the same product could be listed by multiple vendors. The review results, reported in Table 1 and Figure 5, suggest four major findings. First, maple syrup products listed at Taobao.com in China are dominated by products from Canada (79%), and only 7% of them were from the United States. These data were based on the country of product origin, not the country of the food manufacturer is located. For example, Kirkland maple syrup products were listed as Canadian products although Costco as the owner of the Kirkland brand is a U.S. company with its headquarters located in Seattle, the United States. The top six brands (Kirkland, Aodi, Kojo, NOW Foods, Maple Joe, and Taichuang by a Taiwanese company) accounted for 60% of the 200 reviewed listings.

Table 1. Characteristics of Maple Syrup Products Listed on Taobao.com

Country of origin	Canada (79%), the United States (7%), Japan (5%), and other nations (9%)
Brand	Kirkland (28%), Aodi (10%), Kojo (10%), NOW Foods (4%), Maple Joe (4%), Taichuang (4%), and all other brands (40%)
Container	Plastic (59%) and glass (41%)
Unit	Milliliter (ml) (43%), liter (35%), gram (12%), ounce (6%), and kilogram (kg) (4%)
Listing information	Price and weight or volume (100%), photos (95%), sale (discount) price (90%), recipe (85%), shipping and return policy (85%), customer feedback (80%), and video clips (40%)
Promotion	Price discount for current purchase (90%), price discount for future purchase (80%), free shipping (60%), free return (50%), and donation to charities (40%)

Note: See Figure 5 for Customer Feedback. Data source: Primary data collected by the authors’ research team.

Second, all the maple syrup products sold in China, except the brand of Taichuang, made by a Taiwanese company, were not packaged or labeled for the Chinese market. For example, the units that are listed in ounce, milliliter, and liter are not familiar to many Chinese consumers. Although China uses the metric system, most Chinese consumers, especially elder consumers, are more familiar with the weight units like the traditional unit of Jin (one Jin equals 500 grams), kilogram and gram for liquid products. For example, honey, as a likely competing product of maple syrup, has always been sold by weight, such as Jin, kilogram, or gram, not by volume, in China. Labeling maple syrup products by metric weight or by using both volume and weight may help many Chinese consumers better assess and compare the unit price between maple syrup and other related products, such as honey.

Third, most online retailers provide a large amount of information about their maple syrup products, but some of them may not be relevant to Chinese consumers. For example, 85% of the retailers provide maple syrup recipes like pancakes, waffles, and French toast, but none of these recipes are adapted for Chinese cooking. There is a great need for the further development of maple syrup recipes for Chinese consumers.

Fourth, for the 200 listings of maple products on Taobao.com we reviewed, each listing provides several key words, such as “delicious,” “sweet,” “healthy,” “nice color,” etc., based on the feedback from the customers who had purchased the product. The frequency of the top 18 key words across all 200 listings is presented in Figure 5. “Delicious” was the most frequent descriptor, followed by “sweet,” “great packaging,” “fresh,” and “affordable.” It is an encouraging finding that a large percentage of online consumers who had purchased maple syrup considered maple syrup to be affordable. Note that this finding is based on feedback from Chinese consumers who had purchased maple syrup online, and their income and characteristics are likely to be very different from that of average Chinese consumers.



Figure 5. Chinese Consumer Comments on Their Online Purchase of Maple Syrup

Data source: Primary data collected by the authors' research team.

A SWOT Analysis of U.S. Maple Syrup in the Chinese Market

SWOT analysis is a strategic planning and management technique used to help a business or organization identify strengths, weaknesses, opportunities, and threats of a new product, a new market, or a proposed organizational change (Benzaghta et al., 2021). A SWOT analysis was conducted to assess these four aspects of maple syrup as a relatively new foreign product in China, and the findings are summarized in Table 2.

Maple syrup as a new foreign product in China has several potential strengths in the market.

Table 2. A SWOT Analysis of U.S. Maple Syrup in China

Strengths	Weaknesses
Has been introduced as an all-natural sweetener enjoyed and appreciated by people in many countries	Limited recipes with maple syrup for typical Chinese food preparations
Delicious taste, beautiful color and good smell	Limited introduction and promotion of maple syrup in China
Has been introduced as a healthy food product in China	Limited information on Chinese consumers' preferences for maple syrup
The process of collecting sap from trees to boiling the sap into syrup is attractive to Chinese consumers	No maple syrup product has been developed, packaged or labeled for the Chinese market yet
Has been introduced as a western food in China, similar to coffee and wine	Relatively expensive as compared to honey and other syrups
Opportunities	Threats
China does not produce maple syrup and the demand must be met from imports	Maple syrup is not part of the Chinese diet and cuisine
Excellent customer reviews and feedback in China	Language and cultural barriers for maple syrup as a relatively new foreign product
China has emerged as a large importer of many food products	Ongoing China-U.S. trade war and retaliations
China will likely import more foods from the U.S. to reduce its huge trade surplus	Competition of Canadian maple syrup
China does not produce maple syrup and the demand must be met from imports	Increasing international transportation costs since 2000
Excellent customer reviews and feedback in China	Almost no growth in per capita sugar consumption in China since the mid-1980s
China has emerged as a large importer of many food products	Ongoing public health campaign of reducing sugar intake to prevent diabetics and obesity in China
China will likely import more foods from the U.S. to reduce its huge trade surplus	Lack of enforcement for trademark protection and punishment for fake products in China

Although maple syrup has been introduced in China for only a short period, it has been introduced as a natural, healthy, safe, and luxury Western food product. The taste, color, smell, and production process, from collecting sap from trees to boiling the sap into syrup, has been well received in China. As a result of the ongoing globalization and rising income, Chinese consumers, especially young and educated consumers, have developed strong preferences and demands for products like beer, wine, coffee, lobsters, and cheese that were traditionally not present in the Chinese diet and cuisine. For example, China's beer production was extremely limited until the 1980s, but has now

emerged as the world's largest beer market since 2002 (Wang et al., 1997; FAO, 2022). Similarly, as a country culturally and historically attached to tea, China's coffee consumption has increased by more than 600% between 2006 and 2020. Furthermore, Chinese consumers, especially those in their 20s to 40s or with relatively higher income, have proven themselves to be connoisseurs of fine wines from Italy, gourmet cheeses from France, freshly caught abalone from New Zealand, fresh Bing cherries from Chile, and live lobsters from Canada or the United States. It seems reasonable to predict that maple syrup will be added to the refined list of foreign foods for many Chinese consumers.

The rapid growth in maple syrup imports in the greater China region in the past decade suggests that their imports are likely to continue to grow at a significant rate. The increase in maple syrup imports of Japan and the Republic of Korea, with similar food culture and consumption characteristics to China, also confirms that many Asian consumers will presumably enjoy maple syrup when it is available and affordable (Atlantic Cooperation, 2019; Korea Business Services, Inc., 2020).

Regarding weaknesses, maple syrup has not been a traditional part of the Chinese diet and cuisine, hence, there is a limited number of Chinese food recipes that include maple syrup. Most consumers in China have never tried maple syrup, and therefore do not know the best ways to consume it or use it as an ingredient. The maple industry needs to improve its efforts in studying Chinese food culture and developing new products and recipes for Chinese consumers. Furthermore, in comparison to honey and other syrups that are readily available in China, maple syrup is more expensive, less widely available, and is not packaged or labeled for Chinese consumers. There is limited information provided to Chinese consumers regarding maple syrup and its uses and there is also limited knowledge within the industry at large of Chinese consumers' preferences for maple products. The maple syrup industry, especially the exporters, need to collaborate more effectively with Chinese importers to ensure that maple syrup is more affordable and accessible to Chinese consumers.

There are many opportunities for increasing maple syrup exports to China. First, China does not produce any maple syrup, which means that all of the demand for the product must be met from imports. China has emerged as a large importer of many food products and will likely increase its imports of U.S. food products to reduce its trade surplus with the United States (USDA, 2020). Many American food products, such as baby formula, vegetable oil, and frozen pork, have earned an excellent reputation in quality and safety among Chinese consumers (USDA, 2020). Second, the rising income of Chinese consumers makes maple syrup affordable for more and more people. Third, since luxury food products are often purchased as gifts for parents, relatives, and friends in China, maple syrup as a foreign product with a beautiful color has the potential to be one of these gifts. Fourth, because both bakery goods and baking at home have become popular in China, especially within urban areas, there are increasing opportunities for maple syrup to be used as a complement to baked goods. Fifth, the number of foreigners who live, work, or study in China and the number of Chinese people who study, visit, or work abroad have increased rapidly in the past two decades. Such activities and movements could help introduce maple syrup in China.

There are potential threats to the expansion of maple syrup exports to China. First, maple syrup is not a part of the Chinese diet or cuisine and there are language and cultural barriers that exist in regard to maple syrup as a relatively new foreign product in China. Second, there are ongoing trade disputes and retaliations between China and the United States, as well as rising tensions between the two nations in their political and economic relations. Third, China is a large sugar producer, consumer, and importer, but there has been almost no growth in per capita sugar consumption in China since the mid-1980s. China also has an ongoing public health campaign of reducing sugar intake to prevent diabetes and obesity. Fourth, there is a lack of enforcement for trademark protection and punishment for fake products in China. This could be a potential threat to maple syrup as a luxury, expensive, and imported product in China.

Conclusions and Recommendations

As a pioneering study focused on China's emerging maple syrup market, this paper has reviewed the development and trends of China's maple syrup imports, examined the market characteristics with a focus on distribution channels and consumer preferences and feedback, and assessed the strengths, weaknesses, opportunities, and threats of maple syrup in the Chinese markets. Such information is expected to be useful to maple syrup producers, processors, exporters, policy makers, educators, Extension specialists, and other stakeholders of the maple industry.

This study suggests four major conclusions and recommendations. First, as a large country that does not produce maple syrup, China's maple syrup imports are likely to continue to grow at significant rates because of increasing average income, ongoing urbanization, and growing consumer demand for imported food products. The North American maple syrup industry should begin to include China in its export strategies and promotion efforts. As maple production in the United States and Canada continues to increase, the Canadian maple industry, with support from the Quebec Maple Producers Association (PPAQ), has made great efforts in increasing its exports. On the other hand, the U.S. maple industry is loosely organized in promoting its exports. For example, early attempts by the Vermont Agency of Agriculture, Food and Markets to advance international maple syrup export research were met with skepticism. This reaction suggests that the U.S. maple syrup industry needs to work to better develop an identity for its maple syrup as a global specialty sweetener.

Second, the maple syrup products available in the Chinese market are not developed, packaged, or labeled for the Chinese market. It is of the utmost importance to rectify these marketing issues. In addition, new maple syrup products and recipes must be developed with consideration for Chinese cooking and food culture. Maple products for the Chinese markets should be labeled in Chinese, using units that are familiar to Chinese consumers, and marketed as luxury food products according to Chinese custom. While China is a large country with significant variations in food consumption patterns and preferences across regions, it is important to incorporate such differences in product and recipe development, introduction materials, and marketing strategies.

Third, while U.S. agricultural exports to China increased sharply in the past two years, reaching a record high of \$36.4 billion in fiscal year 2022 (USDA, 2023), the exports have been concentrated

in soybeans, corn, sorghum, cotton, alfalfa, beef, pork, powdered milk, and other bulk products. This study suggests that maple syrup, as a unique product mainly produced in Canada and the United States, has great market potential in China and should be included in agricultural trade negotiations with China. Maple syrup may also serve as a pilot study to assist in understanding Chinese consumer preferences for imported food products with the end goal of expanding the exports of high-value and regional products to China.

Fourth, while there are extremely limited information and studies on Chinese consumer preferences for maple syrup and its attributes, there is a growing need for the maple industry, government agents, and researchers to work together to understand Chinese consumer preferences and willingness to pay in order to incorporate such information in product and recipe development and market promotion efforts. While maple syrup has nostalgic significance for many producers, distributors, retailers, and consumers in North America, industry leaders have begun to acknowledge the opportunity to expand sales into non-maple-producing regions in North America and beyond to market the ever-increasing supply of syrup. With this acknowledgment, the maple industry has begun adopting new marketing strategies that place a greater emphasis on product quality, flavor, and positive environmental attributes. These adjustments aim to expand awareness of maple products to consumers in broader geographic regions and demographic profiles. More research in China is vital to understand consumer preferences and inform effective product promotion, packaging, and placement to further develop this emerging market.

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