



Türkiye-Taiwan Agricultural Trade Analysis and Future Prospect¹

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**Article Info:***Author(s):**Cheng-Yi, LAI**Pei-Ju, LIAO**Fahri YAVUZ**Received: 01/09/2022**Accepted: 3/02/2024***Keywords:***Taiwan, Türkiye,
Agricultural Trade, Future
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The distinct differences and complementarity between Taiwan and Türkiye offer collaboration opportunities, paving the way for trade and investments to reach mutual benefits in various aspects. This study specifically focuses on agricultural trade, given its direct impact on the daily lives of citizens in both nations and its symbolic role in trade development. This research examines public data from governments and international organizations, along with esteemed publications and credible news reports, to explore the potential for bilateral cooperation, identify existing obstacles, and bolster trade volumes between Taiwan and Türkiye. The findings underscore the significance of domestic political stability, the global business cycle, and diplomatic relations as the key influencers of overall trade volume. Furthermore, diplomatic ties and policies are crucial in shaping agricultural trade. While the total agricultural trade volume between both nations experienced a noteworthy threefold surge from 2012 to 2022, hitting its peak in 2020, the growth trend of agricultural trade doesn't consistently align with overall trade patterns. Numerous challenges hinder trade sustainability and prospects for future cooperation. These obstacles include high transportation expenses due to long-distance and cold chain logistics, limited market exposure, the absence of preferential tariff treatments, and Taiwan's diplomatic dilemma. No formal diplomatic relations essentially increase the difficulty in negotiating bilateral agreements.

The research provides several viable recommendations. For instance, Taiwanese firms might seek direct investment and technology sharing with Türkiye with lower production costs. Correspondently, Türkiye can benefit from technological transfer, stimulating agricultural sector innovation. Additionally, both nations should prioritize trading lightweight, high-value products to overcome the current uneconomic shipment cost while gradually diversifying and increasing trade volume to achieve a scale economy. A significant trade volume could serve as leverage for future preferential tariff negotiations and tighten the relationship between these two countries to fulfill mutual interests in economics and geopolitics.



1. Introduction

Regarding Taiwan's unique political circumstances, it lacks official diplomatic recognition by most countries worldwide, including Türkiye. Nonetheless, Taiwan has engaged in various international organizations under different names, functioning as a well-established sovereign island nation. Furthermore, Taiwan strategically utilizes its pivotal geographical location, advanced technology, and well-developed democratic reputation to build dependable trade partnerships worldwide and enhance its international prominence.

On the other hand, Türkiye holds significant geopolitical influence and is renowned as a pivotal supplier of agricultural products. Therefore, increased support from Türkiye could significantly advance Taiwan's objective of enhancing international visibility and fostering mutual benefits across various domains for both nations.

The primary objective of this study is to investigate the potential for long-term collaboration between Taiwan and Türkiye, particularly within the agricultural sector. Agricultural trade holds considerable symbolic value, as it can effectively promote mutual public recognition among the citizens of both countries, further facilitating a more comprehensive trade development. Due to the long distance, there is nearly no conflict of interest between both nations; instead, the inherent

complementarity forms the cornerstone for fostering deeper cooperation. Taiwan can offer expertise and experience in crop enhancement, rural development, food processing, and agricultural technology. Conversely, Türkiye can leverage its abundant land resources, skilled workforce, and consistent production of critical agricultural goods such as forestry products, corn, and noodles, which Taiwan might encounter challenges in independently producing on a large scale. Additionally, strengthening ties in the agricultural sector can contribute to reducing poverty and enhancing food security.

The research methodology of this paper includes report reviews and comprehensive data analysis from various sources, including public data from governments and reputable international organizations. After data collection and analysis, we aim to present our perspectives supported by references from credible publications and news sources.

1.1. Taiwan Economy Status and Agriculture Sector

According to the data from the International Monetary Fund (IMF) world economic outlook, Taiwan's nominal Gross Domestic Product (GDP) is USD 0.79 trillion (twenty-first of the world), and its GDP per capita is USD 33,907 (thirtieth) in 2023. As for the estimation of the annual real GDP growth rate, it has

fluctuated between 2% to 4% in the past five years. Even in 2020, the pandemic year, Taiwan could maintain the rate at 3.1%.

In the agricultural industry, agriculture accounts for approximately 1.4% of GDP. According to the Taiwan Agriculture Factsheet 2022 by the Ministry of Agriculture, Taiwan (MOA, R.O.C.) in 2022, the arable land size is around 787,000 ha with 735,000 ha cropped. The farmland is used for rice (30.5%), fruit trees (24.5%), vegetables (19.3%), miscellaneous grains (10.1%), and flowers (2%).

Due to limited arable land and a high-density population, the average cropland per family is merely 0.72 hectares. Relatively small farming lands result in difficulties in trading internationally. Given that condition, Taiwan's agriculture mainly focuses on quality agriculture, agritourism, and smart agriculture (Chen, Q.R., 2011). In 2022, the total export value of agricultural products amounted to USD 5.24 billion, and the import value was USD 20.51 billion.

Taiwan's food sufficiency rate is merely 30.7% in 2022. Consequently, increasing the rate to above 40% is the primary goal of the agriculture industry (Andoko, 2020).

1.2. Türkiye Economy Status and Agriculture Sector:

Türkiye is one of the G-20 countries. The nominal GDP of Türkiye in 2023 is USD 1.03 trillion and ranked as the nineteenth biggest economy in the world. Türkiye's PPP estimation is around USD 3.57 trillion, the eleventh. GDP per capita is approximately USD 11,931, the seventy-first. Türkiye is categorized as one of the Emerging Markets by the IMF.

Türkiye's agriculture is essential for Türkiye's economy. According to The World Bank, in 2022, the agriculture sector contributed 6.5% of the GDP. This share has steadily decreased in the past ten years. Based

on FAOSTAT, the agricultural land size is 37.76 million ha. The size of arable land in Türkiye is within the top twenty in the world, which has roughly 20 million ha of arable land.

Türkiye is the tenth agricultural output country and the fourth biggest vegetable producer. Türkiye is the world's biggest producer of hazelnuts, raisins, figs, apricots, etc. Türkiye produces more than 50 million tons of fresh vegetables and fruits annually (The World Bank Data, 2022).

In general, Türkiye's agriculture industry is mature and has the advantage of a scale economy. Yet, owing to the increasing food demand, productivity and quality should improve by introducing up-to-date and advanced technology ("Author", 2019).

1.3. Benefits for Türkiye to build a tighter relationship with Taiwan

With rapid economic growth, Türkiye has recently expressed its interest in increasing its regional influence in the Middle East and Asia. In 2019, Türkiye proposed the "Asia Anew Initiative," reflecting its ambition to become more involved in East Asia and the Pacific regions (Temmuz & Selma, 2020).

There are several reasons for Türkiye to increase trade with Taiwan. Firstly, Taiwan is a member of the Asia-Pacific Economic Cooperation (APEC) and has strong connections with Latin American and Caribbean countries (Kasim, 2015). Despite the relationship between Taiwan and Mainland China, Taiwan has a trading volume of approximately USD 200 billion with Mainland China and generated a trade surplus of over USD 30 billion in the past five years, as per data from the Ministry of Finance (MOF), R.O.C. Besides, Taiwan is among China's top ten import partners, and Taiwan and Mainland China have had a Cross-Strait Economic Cooperation Framework Agreement (ECFA) since 2010. This agreement reduces taxes on trade between

Taiwan and China for most products, providing Türkiye with access to the Chinese market through Taiwan.

Secondly, Taiwan boasts a relatively more mature and secure legal system and patent protection in comparison to China. Besides, being a democratic country, Taiwan offers a more trustworthy investment environment, particularly concerning intellectual property protection.

Thirdly, products can be handily shipped from Taiwan to other East Asian countries such as Japan, South Korea, and ASEAN (Association of Southeast Asian Nations) member countries. In summary, Taiwan presents itself as a suitable choice for Türkiye to diversify its market risk.

From an agricultural industrial perspective, Taiwan and Türkiye also exhibit complementarity. Taiwan has developed a high-quality agriculture sector over several decades. As more than 60% of Taiwan's food relies on imports, it is crucial for Taiwan to have reliable partners capable of consistently producing agricultural products (Chen, W.X., 2011). Türkiye possesses the advantage of a larger scale of agricultural land. Collaborating would

be a win-win situation for both countries. Under the 2017 agriculture cooperation memorandum of understanding (MOU) signed between Taiwan and Türkiye, Taiwan can benefit from stable food import sources, while Türkiye can achieve greater agricultural productivity through technical cooperation with Taiwan.

2. Trade Development Between Taiwan and Türkiye

Based on data from the Ministry of Economic Affairs (MOEA), R.O.C., the total trade value fluctuated from USD 1.2 Billion to 2 Billion (Table 1) in the past decade. In 2022, Türkiye was Taiwan's thirty-fourth trading partner. Specifically, Türkiye is Taiwan's fifty-third biggest import partner and twenty-fourth export partner. In 2022, the import value was USD 0.40 billion with the export value was USD 1.58 billion (Table 1). Taiwan has more benefits from this trade relationship. In recent years, the import value has gradually increased; meanwhile, though both sides are working on diminishing the trade gap, it presents an increasing trend since 2019.

Table 1. Trade details between Taiwan and Türkiye from Taiwan's perspective in the past decade

Years	Value (Unit: Billion USD)			
	Total Trade Volume	Export	Import	Trade Gap
2010	1.624	1.441	0.183	1.258
2011	1.831	1.62	0.211	1.408
2012	1.793	1.605	0.188	1.417
2013	1.775	1.606	0.169	1.437
2014	1.873	1.7	0.173	1.526
2015	1.691	1.512	0.179	1.333
2016	1.403	1.211	0.192	1.018
2017	1.818	1.55	0.267	1.283
2018	1.701	1.331	0.37	0.96
2019	1.358	1.022	0.337	0.685
2020	1.432	1.072	0.36	0.712
2021	1.767	1.368	0.399	0.969
2022	1.97	1.575	0.394	1.181

Source: MOF, R.O.C. (Taiwan)

2.1. Main Products between Taiwan and Türkiye

Since Taiwan is one of the largest IC production countries, the top exports from Taiwan to Türkiye are semiconductor production machinery and related appliances. Plastic products, steel, and other industrial machines account for a significant proportion of exports. On the contrary, the top import products from Türkiye to Taiwan are vehicles and accessories. Industrial machines and appliances occupy a critical proportion as well. Since Taiwan lacks natural resources, Türkiye is an essential supplier for Taiwan, such as forest products, ores, metal products, and so on (Yeh et al., 2017).

2.2. Determinant of Trading Performance Assumption

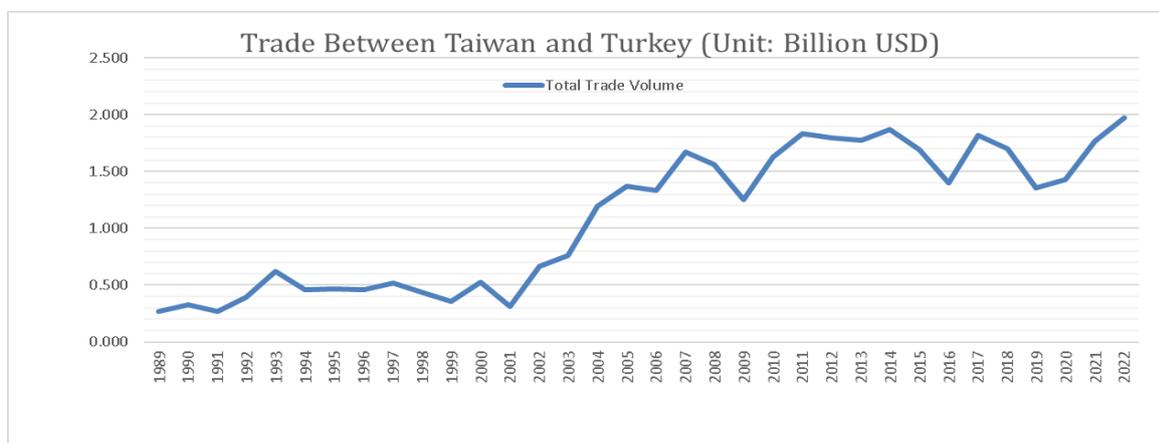
Several factors significantly influence the trade volume between Taiwan and Türkiye. These factors include the diplomatic relationship, domestic political stability in both countries and world economic trends. Some critical years for the trade development will be listed in the following paragraph:

The first pivotal increase occurred in 1993. It was the year when Taiwan elevated the status of its de facto embassy, known as the Taipei Economic and Cultural Representative Office in Ankara (now the Taipei

Economic and Cultural Mission in Ankara). In the same year, Türkiye established its de facto embassy in Taipei, Taiwan. Although the increase was not very substantial, it opened the gate for bilateral trade development.

A second pivotal increase was driven by the establishment of The Taiwan Democracy Foundation in 2003. This development created a new avenue for Taiwan to engage with the world, particularly in democratic countries (Kasim, 2015). Since then, annual trade volumes have consistently risen, and Türkiye was among the countries that increased their trade with Taiwan. The overall trade volume between Taiwan and Türkiye steadily grew during this period.

However, in 2016, there was a significant drop in trade volume (Graph 1) as Taiwan switched government and changed its ambiguous stance towards China. Concerns about armed conflicts were widespread, but neither Taiwan nor Mainland China engaged in hostilities. This rational approach boosted investor confidence, resulting in a swift recovery in global trade with Taiwan. In the same year, a coup took place in Türkiye. Although it was resolved promptly, it marked a critical turning point for Türkiye's economy. Some countries, especially Western nations, expressed concerns about Türkiye's domestic political stability and human rights performance (Muhammet, 2021).



Graph 1. Trade volume between Türkiye and Taiwan by year

3. Agriculture Trade Between Taiwan and Türkiye

While agricultural trade represents a relatively small share of overall trade, its significance is no less than other industries due to its direct impact on the public. Agricultural products are closely linked to food security and national well-being. Long-term, stable agricultural trade between nations can foster a positive national image and trust. It is particularly crucial for countries with lower food self-sufficiency rates, such as Taiwan, to emphasize the importance of seeking dependable trade partners like Türkiye.

In 2022, agricultural trade between Taiwan and Türkiye accounted for just 3% of their total trade volume and 0.2% of Taiwan's global agricultural trade. However, it has exhibited substantial growth in both value and volume over the past decade. In 2016, the total agricultural trade value was USD 34.8 million, which surged to USD 71.44 million in 2020. Compared to

general trade, it presented an opposite trend during this period. Moreover, the total agricultural trade volume dropped slightly from 2021 to 2022, which similarly exhibited an opposite trend compared to general trade (Table 2).

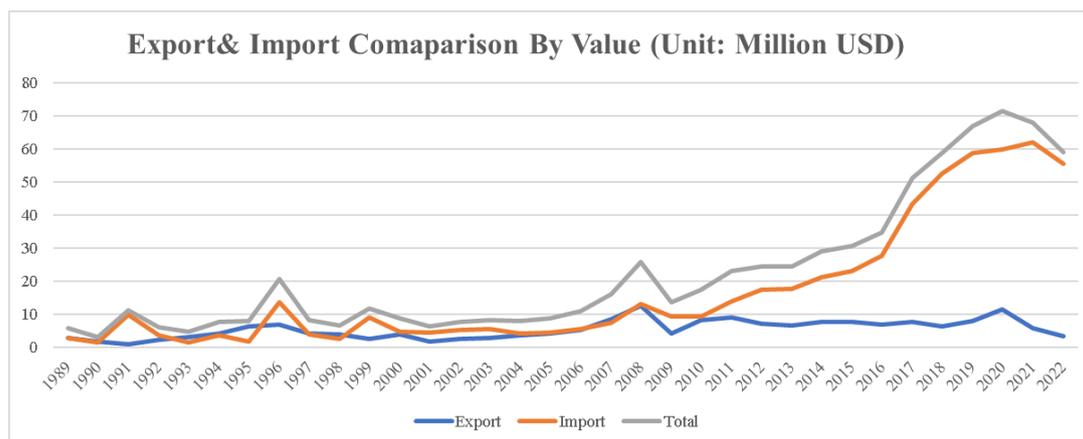
Despite fluctuations in total trade volume due to various factors, the upward trajectory of agricultural trade remains steady. A pivotal turning point occurred in 2016 when Taiwan signed a bilateral investment promotion MOU with Türkiye and subsequently signed an agricultural cooperation MOU in 2017, contributing to recent trade growth.

The value of imports from Türkiye to Taiwan significantly surpasses Taiwan's exports to Türkiye. In 2022, exports totaled USD 3.44 million, marking an all-time low in recent years, while imports amounted to USD 55.52 million. Within the realm of agricultural trade, Türkiye ranks as the thirty-sixth import partner for Taiwan.

Table 2. Agricultural trade details between Taiwan and Türkiye from Taiwan's perspective

Data Period	Export to Türkiye		Import from Türkiye		Total	
	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)
2011	6670.12	9.10	5492.74	13.97	12162.86	23.07
2012	6966.55	7.09	6774.85	17.34	13741.40	24.43
2013	6287.46	6.71	7587.13	17.82	13874.60	24.52
2014	7389.19	7.86	8030.74	21.21	15419.93	29.08
2015	8483.34	7.69	12209.39	22.98	20692.74	30.67
2016	8567.66	7.04	35731.87	27.76	44299.53	34.80
2017	9723.91	7.69	61291.57	43.43	71015.49	51.12
2018	6613.93	6.35	85904.86	52.45	92518.79	58.80
2019	12123.34	7.97	111897.42	58.71	124020.75	66.68
2020	21381.24	11.54	119206.31	59.89	140587.55	71.44
2021	6306.17	5.94	98321.95	61.99	104628.12	67.93
2022	1324.43	3.44	54742.69	55.52	56067.12	58.96

Source: MOA, R.O.C. (Taiwan)



Graph 2. Agricultural trade volume between Taiwan and Türkiye by year

3.1. Facts of Agricultural Import from Türkiye to Taiwan

In 2022, Taiwan imports USD 55.52 million of agricultural products from Türkiye, representing 94% of the total agricultural trade value. The largest import category was the combination of crop products, totaling approximately USD 24 million and accounting for 57.7% of imports (Graph 3). It's worth noting that the category of crop products held the top position except in 2020. The distance between Taiwan and Türkiye presents a primary challenge since most fresh products necessitate efficient logistics and a well-maintained cold chain. Additionally, the COVID-19 pandemic potentially impacted the supply chain in 2020, resulting in increased difficulties with higher costs for product shipment, especially for agricultural products further leading to a significant reduction in trade volume (Guan et al., 2020). It is also critical to track the extent and duration of the 2023 Türkiye Earthquake's impact on agricultural trade between Taiwan and Türkiye (Food and Agriculture Organization of the United Nations [FAO], 2023).

Noteworthy products within this category include corn starch, noodles, hazelnuts, cotton, and dried fruits, all recognized for their extended shelf life. Each product achieved respective import values of up to USD 1 million. In 2022, Türkiye was Taiwan's largest import

partner for hazelnuts, second for noodles and dried fruits, fifth for corn starch, and eleventh for cotton. Notably, only hazelnuts, noodles, and dried fruits remain the top three imported products from Türkiye to Taiwan regularly. The market share and positions of the other products vary significantly each year.

Despite Türkiye being a major producer of various agricultural goods, logistical challenges and a lack of preferential customs treatment hinder the delivery of fresh products to Taiwan compared to other APEC countries (Colakoglu, 2018). Moreover, differing culinary preferences between Türkiye and Taiwan also impact consumers' willingness to make these purchases.

Forest products constitute the second-largest import category, constituting 32.8% of all imports from Türkiye (Graph 3). Türkiye holds the position of Taiwan's eighteenth-largest forest product import partner. It's important to highlight that almost 99% of Taiwan's forest products are imported (MOA, R.O.C.). As Türkiye owns substantial forest resources, it is a critical opportunity for Türkiye to expand its export of forest products to Taiwan. The value of forest product imports from Türkiye increased from USD 0.19 million in 2015 to USD 8 million in 2016, further reaching USD 28.6 million in 2020 (Table 3).

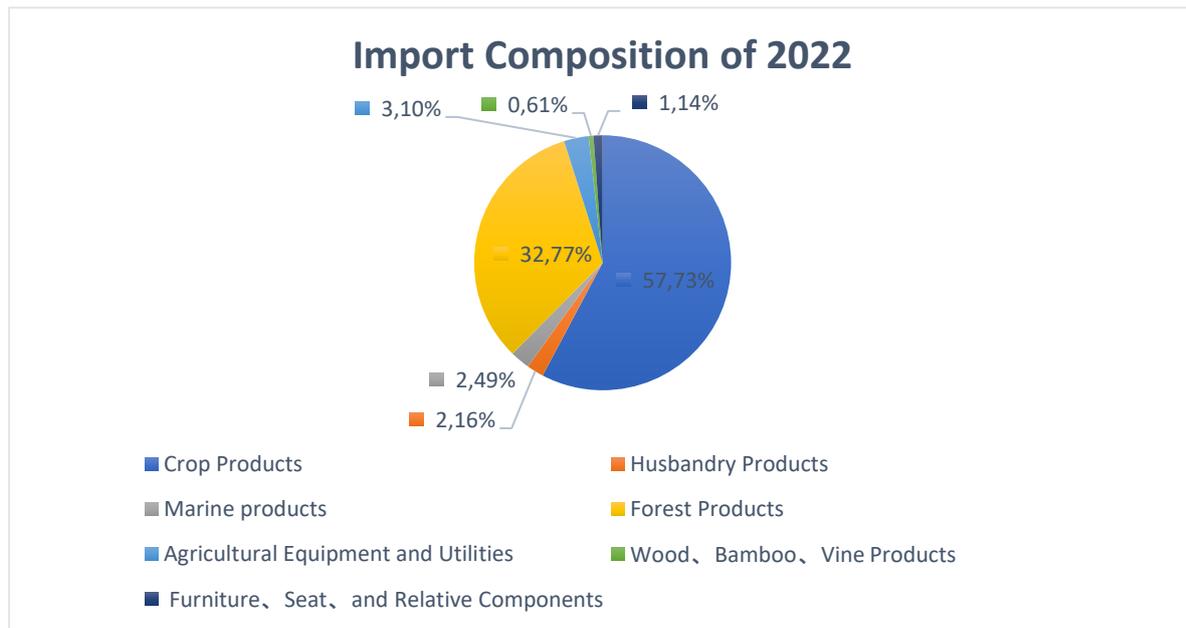
Agricultural Equipment and Utilities comprise the third-largest category, making up 3.1% of imports. This

category has shown consistent growth in recent years. Specifically, Taiwan purchased more than USD 1.5 million of agricultural machinery in 2020 and 2022, with the import demand growing significantly annually since 2013.

Marine products account for 2.5% of imports. Taiwan imported USD 0.71 million worth of tuna and USD 0.67 million of mollusks. Both products are within the top ten

import suppliers to Taiwan; however, they were imported with values exceeding USD 1 million before 2020, which signifies there may still be space to develop these markets.

Husbandry products represent 2.16% of imports, with cow leather amounting to USD 0.75 million and ranking as the tenth-largest supplier to Taiwan.



Graph 3. Composition of agriculture products import from Türkiye to Taiwan by value, 2022

Table 3. Agricultural Products Import details from Türkiye to Taiwan in the past decade

Data Period	Import Total		Crop Products		Husbandry Products		Marine Products		Forest Products		Agricultural Equipment and Utilities	
	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)
2011	5492.74	13.97	4,247.13	9.80	797.07	1.75	365.71	2.09	51.40	0.14	14.07	0.06
2012	6774.85	17.34	5,623.56	13.23	576.04	1.32	504.15	2.57	68.04	0.15	2.01	0.03
2013	7587.13	17.82	6,679.90	13.35	386.50	2.03	431.96	1.84	36.35	0.15	44.31	0.39
2014	8030.74	21.21	6,983.88	13.42	472.63	5.36	382.27	1.44	36.18	0.12	139.75	0.65
2015	12209.39	22.98	10,987.11	17.17	375.59	3.38	312.81	1.53	425.91	0.19	92.94	0.53
2016	35731.87	27.76	11,337.93	16.21	63.39	0.90	279.20	1.59	23,906.99	8.00	143.82	0.85
2017	61291.57	43.43	12,750.65	21.43	796.04	2.49	376.05	2.79	47,267.74	15.79	76.56	0.71
2018	85904.86	52.45	27,942.14	26.82	260.40	1.05	281.07	2.67	57,333.22	21.21	46.05	0.39
2019	111897.42	58.71	39,461.88	30.03	447.58	1.17	326.39	2.64	71,451.80	23.53	143.68	0.82
2020	119206.31	59.89	29,154.76	24.02	642.45	1.10	859.21	3.28	87,993.67	28.58	337.23	2.43
2021	98321.95	61.99	35,582.67	35.64	1,002.29	1.84	225.81	1.36	61,101.08	21.68	121.91	0.86
2022	54742.69	55.52	14,734.28	32.05	318.48	1.20	169.71	1.38	38,865.54	18.20	205.88	1.72

Source: MOA, R.O.C. (Taiwan)

3.2. Facts of Agricultural Export from Taiwan to Türkiye

In 2022, the export value of agricultural trade from Taiwan to Türkiye was approximately USD 3.44 million, which accounts for roughly 6% of the total agricultural trade value.

The largest export category is crop products, accounting for 65.7% (Graph 4). The value has remained relatively steady at around USD 2 million and reached USD 4.82 million in 2020. Given that in terms of production scale and pricing, Taiwan lacks significant advantages. As a result, its focus primarily lies on exporting to higher-priced markets.

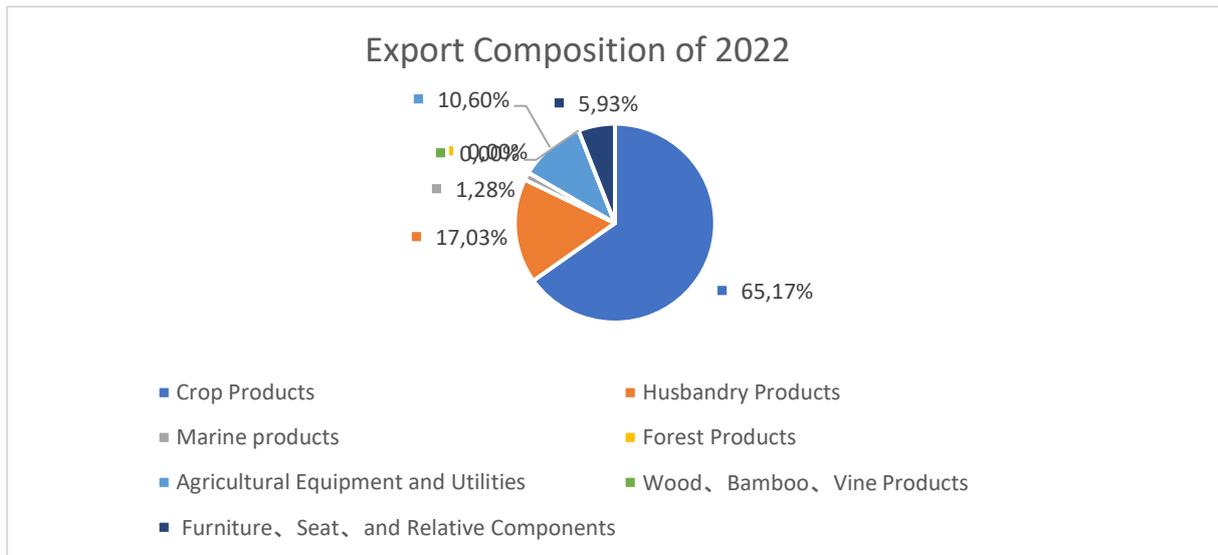
Noteworthy products within this category include beverages, juice, cultivation seeds, and rice. In 2022, Taiwan exported USD 0.96 million worth of beverages and USD 0.36 million of juice to Türkiye. The export amounts of these two products have increased significantly since 2020. Meanwhile, seed exports amounted to USD 0.27 million, fluctuating between USD 0.2 million and USD 0.4 million, primarily composed of watermelon and pumpkin seeds.

Rice is Taiwan's most important agricultural product and staple, with an annual production of up to 1.5 million tons. The production surpasses domestic demand; therefore, there is enough surplus for

exportation. However, Türkiye hasn't regularly imported substantial amounts of rice from Taiwan. Over the past two decades, Türkiye only imported more than three 3000 tons in 2008 and 2020. Merely 80 tons of rice were exported to Türkiye in 2022. As rice has a long shelf life, Taiwan should seek ways to continue and expand its rice exports to Türkiye.

Although agricultural machinery and utilities only accounted for 10.6% of total exports in 2022, in some years, the trade value of this category surpassed crop products, becoming the most important export product from Taiwan to Türkiye. Among this group, it is primarily composed of chemical fertilizers. In the past decade, chemical fertilizers accounted for more than 80% of this category, exporting at least USD 2 million annually. It reached a record high of USD 6.04 million in 2020 remarkably, yet plummeted to merely USD 0.08 million in 2022, significantly decreasing the total export value.

Husbandry products accounted for 17% of exports and the second-largest category. Although the export value is only USD 0.59 million, it's noteworthy that Türkiye has increased its wool purchase from Taiwan. The value has risen from USD 0.1 million in 2020 to USD 0.56 million in 2022.



Graph 4. Composition of agriculture products export from Taiwan to Türkiye by value, 2022

Table 4. Agricultural Products Export details from Taiwan to Türkiye in the past decade

Data Period	Export Total		Crop Products		Husbandry Products		Marine Products		Forest Products		Agricultural Equipment and Utilities	
	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)	Weight (Ton)	Value (Million USD)
2011	6670.12	9.10	473.06	0.78	17.85	0.37	39.98	0.23	164.02	0.35	5205.53	5.38
2012	6966.55	7.09	436.23	0.87	6.17	0.08	50.55	0.17	16.00	0.01	6006.43	4.72
2013	6287.46	6.71	759.19	1.22	235.17	0.67	32.48	0.08	49.00	0.04	5046.90	3.84
2014	7389.19	7.86	1401.78	2.42	73.83	0.27	57.01	0.12	292.04	0.59	5420.07	3.74
2015	8483.34	7.69	863.61	1.86	6.56	0.17	48.83	0.18	160.65	0.62	7355.85	4.60
2016	8567.66	7.04	919.07	2.30	7.31	0.14	30.16	0.20	37.15	0.20	7514.60	4.00
2017	9723.91	7.69	1010.99	2.43	0.20	0.04	60.13	0.31	981.83	0.83	7621.58	3.88
2018	6613.93	6.35	1091.81	2.34	12.99	0.30	0.00	0.00	143.64	0.08	5330.30	3.43
2019	12123.34	7.97	1004.71	2.09	0.30	0.08	43.06	0.27	12.86	0.19	11041.21	5.20
2020	21381.24	11.54	6384.26	4.82	7.17	0.19	0.00	0.00	0.15	0.00	14959.00	6.36
2021	6306.17	5.94	1120.21	2.92	15.72	0.28	9.00	0.04	0.00	0.00	5112.36	2.40
2022	1324.43	3.44	1128.01	2.24	37.79	0.59	9.00	0.04	0.00	0.00	134.90	0.36

Source: MOA, R.O.C. (Taiwan)

4. Findings and Discussion

While there exist numerous differences between Taiwan and Türkiye, they demonstrate a high degree of industrial complementarity, and there are relatively few conflicts of interest between the two parties. However, to achieve their future goals, there are still several obstacles to overcome, particularly in the context of agricultural trade.

4.1. Main Obstacles for Trading Between Taiwan and Türkiye

1.) Political Dilemma

Türkiye's strict adherence to the "One China Policy" restricts the level of official activities. Taiwan's need for a second de facto embassy in Istanbul becomes apparent, as it would bring the European market closer and enhance administrative efficiency, directly increasing the appeal for Taiwanese firms to invest in Türkiye. Yet, it would not happen unless China can make a certain extent of compromise.

2.) Geographical Distance and Transportation Costs

Taiwan and Türkiye are separated by an 8000km distance, with direct flights taking at least 12 hours. The cold chain and transportation costs contribute to higher product costs. Sea transportation presents an alternative, yet it will take a longer duration. Either way, the current trade volume between Taiwan and Türkiye isn't economically favorable.

3.) Lack of Preferential Tariffs

As both countries have not reached a Free Trade Agreement (FTA) yet, it substantially diminishes the competitiveness of their product for each side. Taiwan will require substantial time to establish a bilateral agreement with the EU customs ally, along with political challenges. Türkiye's products may become

less competitive, as many of them can be substituted by products from APEC countries unless Türkiye can make an incompatible advantage in price or quantity. Conversely, Taiwan primarily focuses on mid- and high-price markets and the processing sector, shaping its unique market position.

4.) Imbalanced Trade

Given that Taiwan has enjoyed a significant trade surplus with Türkiye for years, it could potentially diminish the interest of Türkiye authorities in Taiwan.

5.) Social Differences

Türkiye belongs to the Turkic states and is an Islamic country, leading to various social norms that contrast with those in Taiwan, especially for dietary cultures.

4.2. Solutions to Improve the Trade Model

1.) Increase Direct Investment and Transfer Know-How to Türkiye

Based on trade data, agricultural machinery, and utilities are the most critical agricultural products exported from Taiwan to Türkiye. Given Türkiye's policy includes encouraging foreign capital investments, especially since the Türkiye president has called for foreign investments through the media several times, it presents a viable option for Taiwanese firms to establish production facilities in Türkiye (Kutlu, 2021). These firms would gain access to more affordable raw materials, land, and labor. Additionally, they can benefit from the free trade arrangements of the EU union and its FTA partners, resulting in significant cost reductions compared to directly exporting agricultural products from Taiwan; moreover, this strategy can facilitate technology transfer and contribute to industrial transformation. Several of Taiwan's agriculture firms have already adopted similar strategies in Southeast Asia and Latin American countries, yielding favorable

outcomes. These firms have experience in technology transfer and deploying experts from Taiwan.

2.) Extend Friendly Gestures towards Taiwan's Concerns

In recent years, an increasing number of high-level officials and parliament members from Western countries have visited Taiwan, especially in the post-COVID-19 era, including former US House Speaker Nancy Pelosi. China has responded with uttering disappointment by adopting minimal proactive action in practice. Moreover, if Türkiye can offer increased support to Taiwan, it could foster a positive image among Western countries. Taiwan is a well-developed democratic sovereign state; thus, Türkiye can benefit from higher trade volume with Taiwan. Türkiye can also present its democratic image through cooperation with Taiwan, paving the way for future official agreements and increasing its geopolitical prominence in East Asia.

3.) Convene Official Bilateral Meetings

Based on previous data, it is evident that total trade and agricultural volumes significantly improve when both parties enter into agreements or sign MOUs. Therefore, such joint meetings are concluded effective for a short period. Due to Türkiye's passive attitude towards Taiwan, Taiwan should exert more effort to cultivate cooperation with Türkiye.

4.) Increase Trade Efficiency and Achieve Economies of Scale

Considering the relatively low trade volume between Türkiye and Taiwan, the shipping costs, especially for specific agricultural products needing cold chain infrastructure, are not cost-effective. Overcoming the current uneconomical transportation expenses involves prioritizing trading goods that are low in weight yet high in value, such as high-tech items and processed food products. This approach aims to establish a mutually profitable trade model and gradually increase trade volume and diverse trading items to meet the demand and interest of both sides in the long term. Consequently, the expansion of trade volume will lead to the reduction of the transport cost per unit.

5.) Enhance Exposure and Advertising

Companies from both countries can enhance brand visibility through various forms of media advertising and invest more in market development and customer education.

6.) Promote Academic Collaborations

Encourage universities to collaborate on researching economic issues and international trade. By conducting thorough tests and using solid evidence, these collaborations aim to minimize challenges from multiple aspects and maximize the benefits for both sides. Taiwan has actively pushed its universities to build ties with universities from Türkiye, especially in some critical areas.

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