

Potential Analysis on Taiwan Agricultural Products Entering the International Market

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ABSTRACT

This study probes into the trade exchange of Taiwan's agricultural products, through structural analysis, to recognize the transformation of the import structure of Taiwanese agricultural products; and analyzes the export potential of Taiwan's agricultural products by relative advantages of import and export values. The research findings are generalized below: analysis on the trade change of Taiwan's agricultural products: the export structure changes slightly between pork, aquatic products, and agricultural machines. According to analysis on the structure of export areas, the exports of Taiwan's agricultural products tend to be Asia. Using 2007 as an example, besides the U.S., 72% of the said exports are throughout Asia, including Japan, China, Vietnam, Thailand, Korea, Malaysia, Singapore, the Philippines, etc.; in addition, the agricultural products of Taiwan that have significant export potential are cow and pigskin manufactures, refrigerated tunas, refrigerated bonitos, eels, squids, tilapias, soya beans, butterfly orchids, etc.

Keywords: structural analysis, agricultural products, Potential Analysis

INTRODUCTION

Taiwan's participation in the World Trade Organization (WTO) in 2002 leads to a new era of business in Taiwan. Upon the framework of WTO, Taiwan should liberate imports and reduce customs duties, which result in competitive advantages and increased export opportunities for Taiwanese agricultural products. In the past, agricultural development in Taiwan was based on domestic sales. With improvements in agricultural production techniques and farming operations management, there are excess productions of some agricultural products, particularly fruit, and most of these agricultural products are high-quality. However, due to the lack of export experience, they cannot successfully be sold to foreign countries. The farmers in Taiwan cannot acquire the profits and the consumers in other areas do not have the opportunities to reach these products. With the impact of WTO, farmers intend to export these high quality agricultural products, other related agricultural units, and actively promote international marketing (Liu & Huang, 2007). However, what are the agricultural products with export advantages? What is the trade exchange of Taiwan agricultural products? These are questions worthy of further study.

This paper aims to probe into Taiwanese agricultural products with export potential. The following sections will first explore the trade exchange of Taiwanese agricultural products through structural analysis to recognize import structural transformations; then analyze Taiwanese agricultural products with export potential by relative advantage of import and export value.

THE TRADE CHANGE OF TAIWAN AGRICULTURAL PRODUCTS

The trade database of Taiwanese agricultural products was constructed in 1989, and thus, the analysis of this study is based on data from 1989 to 2007.

Changes of agricultural values of trade

According to Table 1, the percentage of the export value of agricultural products of trade reduced from 13.95% in 1989 to 1.46% in 2007. The export value of agricultural products increased from 3.81 billion USD in 1989 to 5.64 billion USD in 1995, and it further reduced to 3.43 billion USD in 2007. As to imports, the percentage of the import value of agricultural products of trade reduced from 21.09% in 1989 to 1.46% in 2007. The export value of agricultural

products increased from 6.28 billion USD in 1989 to 9.99 billion USD in 1996, and it further increased to 10.45 billion USD in 2007.

With regard to the change of imports and exports after Taiwan's participation in WTO (2002), the export of agricultural products fluctuates. The export values in 2003, 2004, 2005, 2006, and 2007 were 3.24 billion USD, 3.55 billion USD, 3.58 billion USD, 3.29 billion USD, and 3.43 billion USD, respectively; the import of agricultural products continued to increase, and import values in 2003, 2004, 2005, 2006, and 2007 were 7.82 billion USD, 8.86 billion USD, 9.35 billion USD, 3.29 billion USD, and 10.45 billion USD, respectively; and the trade deficit of imports and exports of agricultural products is increasing.

Table 1. General trade of Taiwanese agricultural products

Unit: Thousand USD, %

Year	Total of export value of agricultural products	Ratio of agricultural products exported, in total exports	Total of import values of agricultural products	Ratio of agricultural products imported, in total imports	Positive balance and trade deficit of agricultural products
1989	3813047	13.95	6285416	21.09	-2472368
1990	3672210	12.87	6129255	20.01	-2457045
1991	3836036	12.78	6352613	20.54	-2516578
1992	4107386	11.39	7502857	19.65	-3395471
1993	4201221	11.29	7798914	20.13	-3597693
1994	4547262	12.44	8153677	20.95	-3606414
1995	5644649	11.72	9774011	19.55	-4129362
1996	5484881	na	9986606	na	-4501725
1997	3985392	8.81	9931108	26.01	-5945716
1998	3155594	2.85	7804545	7.46	-4648951
1999	3101762	6.08	7641893	17.24	-4540131
2000	3278889	5.54	7601942	14.44	-4323053
2001	3030837	6.09	6862710	18.32	-3831873
2002	3149853	2.41	7105407	6.31	-3955555
2003	3243417	2.25	7829519	6.15	-4586102
2004	3554228	2.04	8862024	5.28	-5307796
2005	3582293	1.89	9355094	5.15	-5772801
2006	3298664	1.55	9428077	4.68	-6129413
2007	3433119	1.46	10455936	4.79	-7022817

Source: Council of Agriculture, "Import and export comparison of past years" of agricultural product trade statistics system: http://agrapp.coa.gov.tw/TS2/TS2Jsp/TS20106_R.jsp, April 13, 2008

na means errors in figures of database

Change of export structure

Table 2 shows the structural changes of the important exported agricultural products of Taiwan, from 1989 to 2007. Wood (furniture) exports ranked the first in 1989, with an export value of 0.799 billion USD (13.17% of export value of agricultural products), followed by wood manufactures (9.41%), pork and refrigerated meat (6.78%), manufactured eels (5.88%), and refrigerated tunas (4.65%), which are 39.89% of the total export value of agricultural products. In addition, since Taiwan was one of the affected areas of foot-and-mouth disease in 1997, the export of pork manufactures was influenced. In 2000, regarding the export of cattle, leather was the first, with an export value of 0.685 billion USD (14.48% of agricultural product export value), followed by refrigerated tunas (12.16%), wood furniture (9.08%), wood manufactures (5.05%), and other agricultural products (4.51%), which were 45.68% of the total agricultural products export value.

In 2005, the export of refrigerated tunas ranked the first, with an export value of 0.835 billion USD (18.18% of agricultural product export value), followed by cattle, leather (10.56%), other agricultural products (5.24%), other leather products (4.07%), and wood furniture (3.58%), which were 41.63% of the agricultural product export value.

In 2007, the export of refrigerated tunas ranked the first, with an export value of 0.835 billion USD (9.48% of agricultural product export value), followed by cattle leather (9.36%), other agricultural products (6.06%), refrigerated bonitos (5.21%), and agricultural machines (4.31%), which were 41.63% of the agricultural products export value.

Table 2. Structure changes of top 5 exported agricultural products in Taiwan

Unit: thousand USD, %

	1989		2000	
1	Wood, furniture	798774.7 (13.17)	Cattle, leather	685937.1 (14.88)
2	Wood, manufactures	570489.59 (9.41)	Tunas, refrigerated	560530.6 (12.16)
3	Pork, refrigerated meat	411111.31 (6.78)	Wood, furniture	418349.7 (9.08)
4	Eels, manufactured	356684.8 (5.88)	Wood, manufactures	232559.5 (5.05)
5	Tunas, refrigerated	281852.65 (4.65)	Other agricultural products	207758.3 (4.51)
Total		2418913.05 (39.89)		2105135.2 (45.68)

	2005		2007	
1	Tunas, refrigerated	835115.1 (18.18)	Tunas, refrigerated	109735.1 (9.48)
2	Cattle, leather	485054.5 (10.56)	Cattle, leather	108301.5 (9.36)
3	Other agricultural products	240470.1 (5.24)	Other agricultural products	70160 (6.06)
4	Other, leather	187130.1 (4.07)	Bonitos, refrigerated	60295.9 (5.21)
5	Wood, furniture	164384.4 (3.58)	Agricultural machines	49865.3 (4.31)
Total		1912154 (41.63)		

Source: Council of Ag

Changes of import structure

Table 3 shows the structural changes of important exports of agricultural products in Taiwan, from 1989 to 2007. Corn, soy beans, and cotton were the major imported agricultural products in 1989 (9.16%, 8.13%, and 6.92% of agricultural product import values). Logs and manufactures of broadleaf trees were fourth and fifth in the ranking, respectively (5.98% of agricultural product import values), and refrigerated tunas were 4.5%. The above were 34.69% of agricultural products import values.

In 2000, corn and soy beans imports ranked the first and second and their import values, which were 0.685 billion USD and 0.56 billion USD, respectively (6.78% and 5.99% in agricultural products import values), followed by tobacco products, alcohol, and other agricultural products, at 5.89%, 4.29%, and 4.08%, respectively.

In 2005, the ranking remained the same as that in 2000. However, their percentages in agricultural product import values increased slightly to 7.1%, 6.99%, 5.98%, 4.87%, and 4.5%, respectively.

In 2007, corn and soy bean imports were the first and second, and their import values were 0.717 billion USD and 0.706 billion USD (11.5% and 9.6% in agricultural product import values), respectively; and wheat was third (4.94% of agricultural product import values). Tobacco products and alcohol were fourth and fifth, 4.85%, and 4.14% in agricultural products import values, respectively. The above are 35.9% of agricultural products import values.

Changes of import and export areas

Japan is a major export area for Taiwanese agricultural products. According to Table 4, export ratios from Taiwan to Japan were 61.4%, 36.85%, 35.96%, and 24.69% in 1989, 2000, 2005, and 2007. However, the export ratio continues to decline.

Table 3. Structural changes of top 5 imported agricultural products in Taiwan

Unit: Thousand USD, %

	1989		2000	
1	Corn, crops	610703.39 (9.16)	Corn, crops	685937.1 (6.78)
2	Soy beans, oil-bearing crops	542007.82 (8.13)	soy beans, oil-bearing crops	560530.6 (5.99)
3	Cotton	461249.3 (6.92)	Tobacco products	487035.5 (5.89)
4	Broadleaf trees, logs	398764.32 (5.98)	Alcohol	356275.4 (4.29)
5	Broadleaf trees, manufactures	299631.78 (4.5)	Other agricultural products	338643.1 (4.08)
Total		2312356.6 (34.69)		2241860 (27.01)

	2005			2007		
1	Corn, crops	717560.7	(7.1)	Corn, crops	390303.2	(11.5)
2	Soy beans, oil-bearing crops	706863.3	(6.99)	Soy beans, oil-bearing crops	324314.9	(9.6)
3	Tobacco products	604519.1	(5.98)	Wheat, crops	167343.1	(4.94)
4	Alcohol	491882.9	(4.87)	Tobacco products	163825.9	(4.85)
5	Other agricultural products	454723.9	(4.5)	Alcohol	139834.9	(4.14)
Total		2975549.9	(29.4)		1185622	(35.9)

Source: Council of Agriculture, "Published rankings of import and export values of agricultural products to different nations", in the trade statistics system: http://agrapp.coa.gov.tw/TS2/TS2Jsp/TS20102_R.jsp, April 13, 2008

The U.S. is also a major export area for Taiwanese agricultural products, and the export ratios were 12.91%, 11.04%, 9.61%, and 10.95% over the past years. Although the ranking of the U.S. changes from the second to the fourth, the export ratio for Taiwan to the U.S. remains stable. Upon WTO, China became a major export area for Taiwanese agricultural products. Including Hong Kong, China became the major export area for Taiwanese agricultural products in 2007. In addition, in 2007, most of the export areas for Taiwanese agricultural products were in Asia (73%).

Table 4. Principal exports areas of Taiwanese agricultural products in 1989~2007

Unit: Thousand USD, %

Ranking	1989			2000		
	Country	Export value	Ratio	Country	Export value	Ratio
1	Japan	2,341,342	61.4	Japan	1,208,302	36.85
2	U.S.	492,344	12.91	Hong Kong	864,547	26.36
3	Hong Kong	242,067	6.35	U.S.	362,059	11.04
4	Korea	155,966	4.09	Vietnam	116,341	3.55
5	Thailand	84,194	2.21	Korea	90,683	2.77
6	Indonesia	56,770	1.49	Thailand	78,803	2.4
7	Singapore	53,954	1.41	Singapore	62,107	1.89
8	German	30,788	0.81	China	50,456	1.54
9	Canada	29,370	0.77	Malaysia	47,699	1.45
10	Spain	29,287	0.77	Indonesia	31,971	0.98
Total		3,516,083	92.21	Total	2,912,968	88.83

Ranking	2005			2007		
	Country	Export value	Ratio	Country	Export value	Ratio
1	Japan	1,288,491	35.96	Japan	847,928	24.69
2	Hong Kong	491,478	13.71	Hong Kong	450,102	13.11
3	China	361,064	10.07	China	430,740	12.54
4	U.S.	344,404	9.61	U.S.	376,195	10.95
5	Vietnam	280,273	7.82	Vietnam	288,697	8.41
6	Thailand	142,083	3.97	Thailand	191,000	5.56
7	Korea	87,409	2.44	Korea	114,246	3.33
8	Others	64,566	1.8	Malaysia	68,945	2.01
9	Malaysia	55,378	1.55	Singapore	63,031	1.84
10	Singapore	51,956	1.45	The Philippines	50,622	1.47
Total		3,167,101	88.38	Total	2,881,508	83.91

Source: Council of Agriculture, "Import and export values of agricultural products of the top ten nations" in the agricultural products trade statistics system: http://agrapp.coa.gov.tw/TS2/TS2Jsp/TS20102_R.jsp, April 13, 2008.

The U.S. is a major import area for Taiwanese agricultural products. Import ratios of Taiwan to the U.S. were 37.82%, 33.6%, 29.79%, and 33.23%, in 1989, 2000, 2005, and 2007. However, the ratio remained fixed at 1/3. In 1989, 2000, and 2005, the U.S., Malaysia, Australia, and Japan were the top 4 import areas; China was the second major import area of Taiwan, in 2007 (6.81% of agricultural products import values).

Table 5. Major import areas for Taiwanese agricultural products in 1989~2007

Unit: Thousand USD, %

Ranking	1989			2000		
	Country	Import value	Ratio	Country	Import value	Ratio
1	U.S.	2,377,663	37.82	U.S.	2,554,810	33.6
2	Malaysia	555,106	8.83	Australia	600,928	7.9
3	Australia	510,234	8.12	Japan	428,869	5.64
4	Japan	431,047	6.86	Malaysia	384,889	5.06
5	Indonesia	301,349	4.79	Thailand	347,163	4.57
6	Thailand	174,651	2.78	Indonesia	338,023	4.45
7	Hong Kong	168,191	2.68	China	321,607	4.23
8	New Zealand	151,075	2.4	New Zealand	274,739	3.61
9	Canada	131,717	2.1	Britain	240,534	3.16
10	Korea	102,172	1.63	Canada	239,349	3.15
	Total	4,903,204	78.01	Total	5,730,910	75.37

Ranking	2005			2007		
	Country	Import value	Ratio	Country	Import value	Ratio
1	U.S.	2,787,482	29.79	U.S.	3,474,890	33.23
2	Australia	718,213	7.68	China	711,812	6.81
3	Japan	689,211	7.37	Japan	704,268	6.74
4	China	567,526	6.07	Australia	664,974	6.36
5	Malaysia	545,077	5.83	Malaysia	638,358	6.11
6	Thailand	427,380	4.57	Thailand	495,572	4.74
7	New Zealand	422,587	4.52	New Zealand	445,667	4.26
8	Indonesia	340,001	3.63	Indonesia	332,483	3.18
9	Brazil	259,597	2.77	Vietnam	299,028	2.86
10	Canada	252,754	2.7	Canada	252,110	2.41
	Total	7,009,829	75	Total	8,019,160	77

Source: Council of Agriculture, "Import and export values of agricultural products of the top ten nations" in the agricultural product trade statistics system." http://agrapp.coa.gov.tw/TS2/TS2Jsp/TS20102_R.jsp, April 13, 2008

Based on the above, trade exchange of Taiwanese agricultural products is generalized below:

- (1) Export structure of agricultural products changes considerably, the top agricultural products in 1989, 2000, 2005, and 2007 were wood, furniture, cattle, leather, and refrigerated tunas, which indicates that agricultural production in Taiwan changes with environments.
- (2) Import structure of agricultural products changes insignificantly. Crops (corn, soy beans, wheat), cotton, and wood products relating to people are the major import products. However, after liberalization, imported tobacco manufactures and alcohol products significantly increased.
- (3) Import and export of agricultural products tend to be in Asia, which is the major export area of Taiwan agricultural products. China plays a significant role in cross-Strait business.

POTENTIAL ANALYSIS OF TAIWAN'S AGRICULTURAL PRODUCTS ENTERING THE INTERNATIONAL MARKET

Taiwan has potential agricultural products to enter the international market

In order to facilitate the export of agricultural products, agricultural units promote international marketing of agricultural products, established the "Promotional Marketing Plan for Agricultural Products", and select items with export advantages or potential according to the demands of international markets, production techniques, export potential, and performance. These items include three categories: (1) the first category is products with advantages and uniqueness of past export performance, such as bell fruits, butterfly orchids, and eels (15 items); (2) the second category is items with stable export growth, which breeds or techniques should be improved, and includes papayas, pineapples,

flowers, and seeds (18 items); (3) the third category is products with serious competition from other countries. The marketing channels or new product R&D should be enhanced to construct market segmentation of the products and expand the export market. The category includes 15 items such as bananas and rice products. The items of these three categories are shown in Table 6 (Liu & Huang, 2007).

The export of these agricultural products from recent years are shown in Table 7. Few are detailed items or new products, and they are not listed in the trade data of agricultural products. Therefore, the statistics of original or similar data is described below. With regard to aquatic products, live eels have the highest export value (0.165 billion USD in 2007). The competition of live eels in the markets of Japan and China is severe. Tilapias are also called Taiwan sea bream, and because of improvements in breeding techniques, tilapia sashimi is popular in the Japanese market (the export value is 0.066 billion USD in 2007); groupers are a fish with high value and export is increasing. Due to improvements in preservation techniques, the export value of butterfly orchids and Dancing Lady Orchids continues to increase. The export value of butterfly orchids in 2007 reached 0.050 billion USD. Dancing Lady Orchids are mostly exported to Japan, as cut flowers; and butterfly orchids are exported to Europe, the U.S., and Japan as potted flowers. Regarding fruit, the unique quality of bell fruits, guava, and starfruit, such as Black Pearl bell fruits or Crystal guavas have become popular in the international market.

Table 6. Agricultural products with export potential

Categories	Items
Category 1	Bell fruits, guavas, starfruit, dates, cabbages, high-quality oolong tea, butterfly orchids, Dancing Lady Orchids, aquatic seeds, aquarium fish, seafood, refrigerated sea eels, Taiwan sea bream (tilapias), eels, live groupers, refrigerated milk fish, and other products.
Category 2	Papayas, pineapples, litchis, mangos, tangerines, grapes, refrigerated soya beans, green bamboo shoots, refrigerated spinach, sweet corn, other orchids, flowers, seeds, refrigerated tunas, bonitos, refrigerated squids and other products, refrigerated bull frog legs, refrigerated mackerels, refrigerated Pacific Saury, and mixed bamboos.
Category 3	Bananas, lemons, grapefruit, yams, rice (glutinous rice) vinegar, glutinous rice cakes, glutinous rice, ground rice noodles, native chickens, ducks, and their byproducts, alcohol eggs, iron eggs, western sausages and hams (pork), fried chicken, carbon, and bamboo handicrafts.

Source: Council of Agriculture, Promotional Marketing Plan for Agricultural Products, 2003.

As to the products in the second category, the export values fluctuate. Among others, aquatic products are the most important, and the second are flowers and vegetables. As to aquatic products, the export values of refrigerated mackerels and squids are the most (0.078 billion USD in 2007). The export of flowers and seeds, such as Flamingo flowers, *pachira macrocarpa*, and chrysanthemum, also continue increasing. As to vegetables, refrigerated soya beans are mostly exported to the market in Japan. Currently, due to remaining insecticides on refrigerated soya beans exported from China to Japan, Taiwanese soya beans have become popular in Japan. As to fruit, Jade Purse litchis, Ai-Wen mangos, Kyoho grapes, and Diamond Pineapple are unique to Taiwan, and therefore, have export potential.

Bananas are the most important fruit in the third category. However, in recent years, because of the competition with bananas from the Philippines, the export value of bananas from Taiwan has been reduced (from 0.030 billion USD in 1998 to 0.01 billion USD in 2007). However, the bananas produced in southern Taiwan and Dwarf Bananas produced in central Taiwan possess competitive advantages because of the unique taste. As to manufactured livestock products, the export value of ducks and their byproducts have been reduced, possibly due to severe international competition.

Taiwan agricultural products with export advantages

Taiwanese agricultural products with export potential refer to export values of products that are greater than import values. In other words, the export values of these agricultural products in Taiwan are more as there are advantages that are more competitive or in greater demand in foreign markets. Based on the approach of Chiou, Duan, and Lyu (1990), this study selected 35 agricultural products with export values greater than import values from imported and exported items in Taiwan in 2007 as the base to probe into Taiwan's agricultural products with export advantages, as shown in Table 8.

Among others, the top 3 agricultural products with the most positive balances are cattle leather (0.53 billion USD), refrigerated tunas (0.399 billion USD), and refrigerated bonitos (0.165 billion USD). In addition, there are important exported Taiwanese agricultural products. Eels, squids, tilapias, and other aquatic products are the fourth, fifth, sixth, and seventh in the ranking, respectively. As to vegetables and the other products, a positive balance of soya beans is the highest (0.04 billion USD, the 10th in ranking). With regard to flowers and seeds, a positive balance of butterfly orchids is the highest (0.05 billion USD, the 9th in ranking). As to livestock and their byproducts, a positive balance of feathers is the highest (0.028 billion USD, 14th in the ranking).

The above is generalized below:

- (1) Among the products with export potential selected by the agricultural units, fruits involve product differentiation; aquatic products tend to be high-price or new items. Flowers and the seeds are popular in international markets. The units also try to promote rice products and livestock products with Chinese characteristics.
- (2) The export values of manufactured leathers, refrigerated, and live fish in Taiwan are high; the exports of refrigerated vegetables, live flowers, and plants are also significant.

Table 7. The export of potential Taiwan agricultural products in the last ten years

Unit: Thousand USD

Categories		Items	1998	2004	2007
			Export value	Export value	Export value
Category 1	Fruit	Bell fruits	2,362.2	10.61	321.7
		Guava	2.4	868.5	1,445
		Starfruit		3483.5	66.9
		Dates	564	54.1	282.3
	Vegetables	Cabbages		848.6	1,445
	Tea	High-quality oolong tea	16651	21226.7	23132
	Flowers	Butterfly orchids	12138.2	23391.7	49609.8
		Dancing Lady Orchids	4333	6755.5	7799.5
	Aquatic products	Aquarium fish	1063.5	2235.1	2703.5
		Seafood, refrigerated sea eels	3.4	576.5	962.4
		Taiwan sea breams(tilapias)	40671.8	53205.2	65976.3
		Eels	140774.5	147132.8	165444
		Live groupers	58	547.3	836.3
		Refrigerated milk fish and other products	12206.7	13583	16604.5
Category 2	Fruit	Papayas	1.9	91.4	212.1
		Pineapples	792.8	971.8	764.7
		Litchis	6277.6	5070.0	2753.4
		Mangos	802.1	5171.6	11340.8
		Tangerines	1818.3	-	-
		Grapes	802.6	415.5	2911.5
	Vegetables and fruit	Refrigerated soya beans	46095	47390.1	39779.7
		Green bamboo shoots	10408.7	14.7	1590.3
		Refrigerated spinach	2.7	4588.0	7.9
		Sweet corn	321	310.9	146.7
	Fruit	Other orchids		6848.6	
		Flowers and seeds	14306	20952.76	43521.1
	Aquatic products	Refrigerated tuna and bonitos	14306	893401.8	43521.1
		Refrigerated squids and the products	60457.9	4196.4	77642.1
		Refrigerated bull frog legs		1945.7	
		Refrigerated mackerels	60457.9	1324.0	77642.1
		Refrigerated Pacific Saury	4280.1	9927.3	27535.6
	Forest products	Mixed bamboos	2288.7	91.7	1320.4
Category 3	Fruit	Bananas	30202.1	10297.1	16637.1
		Lemons		3.76	4.9
		Grapefruits	27.8	785.7	1116

	Grains	Others and fresh yams	3.9	0.6	52.8
	Manufactured livestock products	Ducks, byproducts	7792	482.9	22923.9

Source: Council of Agriculture, "Values of import and export nations of agricultural products" in the agricultural product trade statistics system:http://agrapp.coa.gov.tw/TS2/TS2Jsp/TS20102_R.jsp, April 13, 2008

Table 8. Top 35 Taiwanese agricultural products with advantages (2007)

Unit: Thousand USD

	Items	Export value	Positive balance	Ranking
Vegetables, fruit and other products	Soya beans	39779.7	39737.9	10
	Bananas	16637.1	16636.9	19
	Mangos	11340.8	10100.6	23
	Ginger	5079.9	4856.3	26
	Litchis	2753.4	2560.8	31
	Plums	2253.2	1224.6	35
	Mushrooms	6735.2	3483.4	28
	Watermelon seeds	2589.2	1452.2	34
Fish and byproducts	Tunas	399356.5	392371.4	2
	Bonitos	164897.6	164673.5	3
	Eels	165444	164477.2	4
	Squids	77642.1	71507.8	5
	Tilapias	65976.3	65958.4	6
	Mackerels	33944.7	31535.3	12
	Pacific Saury	27535.6	27433.6	15
	Sailfish	23457.4	22937.6	16
	Sharks	21782.1	21492.6	18
	Milk fish	16604.5	16559	20
	Mackerels	5106.3	4915	25
	Sea ear	3772.2	3771.7	27
	Perch	2684.5	2684.5	30
	Aquarium fish	2703.5	1562.8	33
	Other products	153271.2	52385.3	7
Leather and related products	Pig skin and byproducts	91973.4	51104.9	8
	Goat skin and byproducts	28839.1	16471.9	21
	Cattle skin and byproducts	532219.9	408383.2	1
Flowers	Butterfly orchids	49609.8	49550.3	9
	Dancing Lady Orchids	7799.5	7799.5	24
	Flamingo flower	3042.8	3010.3	29
	Seeds and other products	43521.1	33538.5	11
Livestock and manufactures	Livestock, meat and ducks	22923.9	22873.4	17
	Feather	160280.2	28189.5	14
Fish feed	Fish feed	30404	28341.4	13
Grain and manufactures	Noodle	23095.9	11258.5	22
Bee products	Beekeeping products	4045.5	1654.3	32

Source: Council of Agriculture, "Values of import and export nations of agricultural products" in the agricultural product trade statistics system:http://agrapp.coa.gov.tw/TS2/TS2Jsp/TS20102_R.jsp, April 13, 2008

CONCLUSIONS

This study analyzed Taiwanese agricultural products of export potential and probes into the trade exchange of Taiwanese agricultural products through structural analysis, in order to determine the transformation of import and

export structures of agricultural products, and analyzed Taiwan's agricultural products with export potential by relative advantage of import and export values. It also probed into the possible obstacles of agricultural product exports. The research findings are generalized as follows: export structure of agricultural products changes slightly between pork, aquatic products, and agricultural machines. The changes imply two inferences: (1) Taiwan's agricultural product export has transformed from primary products to high-priced, high-quality products, such as expensive tuna products; (2) in competitive international markets, products with current competitive advantages may change in the future, to be replaced by other potential agricultural products or new products.

According to the analysis of export structures, Taiwan's agricultural products are mostly exported throughout Asia. Using 2007 as an example, with the exception of the export ratio to the U.S. (10.95 %), the majority is in Asia (72%). The major export areas include Japan, China, Vietnam, Thailand, Korea, Malaysia, Singapore, the Philippines, etc. In addition, Taiwanese agricultural products with the most export potential include cow and pigskin manufactures, refrigerated tunas, refrigerated bonitos, eels, squids, tilapias, soya beans, butterfly orchids, etc.

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