

Article

The Assessment of Turkey's Competitiveness in Cherry Trade

Hasan ARISOY ¹, Mehmet Ferda KAYA ², İsmail ARAS ³, and Abdirizak ALI ABDULLAHI ^{4, *}

- ¹ Selcuk University, Faculty of Agriculture, Department of Agricultural Economics 42075, Selcuklu-Konya/ Turkey arisoy@selcuk.edu.tr
- ² Mevlana Development Agency: Seyh Sadrettin Neighborhood, Feritpaşa Street, No:18, 42040, Meram-Konya / Turkey mferda88@gmail.com
- ³ Republic of Turkey Ministry of Agriculture and Forestry: Eskisehir Road 9th km Lodumlu – Ankara / Turkey aras008@gmail.com
- ⁴ Selcuk University, Faculty of Agriculture, Department of Agricultural Economics 42075, Selcuklu-Konya/ Turkey abduressak@gmail.com
- * Correspondence: abduressak@gmail.com

Abstract: Trade of agricultural products has gained importance with the development of global trade. Cherries has a crucial place in Turkish agricultural exports. Fresh cherries are in the scope of this study. The aim of this study is to examine Turkey's position and competitiveness in cherry trade. Trade Intensity Analysis Method which represents the course of trade flow among countries is used in the study. The study indicates that European countries which are Turkey's tradition trade partner has a biggest trade share with Turkey and that share did not much change in years. By the way, Asia market especially China, became a game changer in cherry trade and Turkey should prepare itself for this situation.

Keywords: Cherry; trade intensity analysis method; concentration coefficient; Turkey

1. Introduction

Adam Smith's The Wealth of Nations which he wrote in 1776, is considered to be the beginning of modern economics. One of the most important parts of the book is the chapter on theory of absolute advantages. This theory reveals that foreign trade is in favor of countries and has an impact on welfare [19]. Although it has been almost 240 years since Smith's work and several theories have been developed, the fact that foreign trade is in favor of the countries has taken its place in the economic literature as a general acceptance.

Especially after the 1990s, the World Trade Organization sanctions on trade liberalization have accelerated the increase in world trade. As of 2020, world trade volume and value have grown by 4% and 5% on average, respectively, since 1995. [26]. Although world trade has shown an upward trend in the course of time, there has also been a decrease in some periods. As a matter of fact, the growth rate in world trade remained at 3.0% in 2018 and 2.6% in 2019, growth could then rebound to 3.0% in 2020. The main reasons for this periodic decline are; the shrinking demand of developed countries and the trade agreements held in the regional dimension [23].

Trade volume is increasing in Turkey as well as in the world. Turkey's foreign trade volume in the last 30 years (1987-2020) was above the world average, with an average annual growth of 18.4%. However, Turkey is a country that has tackled foreign trade deficit for many years. As a matter of fact, the exports account 17 billion 850 million dollars \$ in 2020, and the imports account 22 billion 381 million dollars in the same year. As a result, the foreign trade deficit was 49 billion 915 million dollars and the rate of exports meeting imports was approximately 72.5% [24]. Turkey ranks 29th place in the world with export exported a total of \$177B On the other hand, Agrofood exports make up 12.4% of

Turkey's total exports. It is understood that Turkey's exports of agricultural products show a better performance than total exports.

Cherry is an important product that is subject to trade in world agricultural products. Cherry trade, especially in recent years, continues to increase. Total world cherry export value reached 3.8 billion \$ in 2020 from 348 million \$ in 2001. In this increase, Chile has a significant share. Chile increased its share of cherry exports from 5.4% to 72.5% in that period [12]. Turkey ranks first in terms of world cherry production area and quantity according to the 2016 data. However, it ranks fourth in cherry exports [12]. In particular, Chile has become the world leader in cherry trade and has changed cherry market balances with its breakthrough.

Although there are many studies on cherry in the literature, there are limited number of studies showing the course of cherry trade and trade concentration. [1] in the Bursa region, [9] in the Isparta region and [21] in Konya-Ereğli region, discussed the overview of cherry exports, regional importance and export increasing measures. [2] showed that cherry is an important export item and producers can obtain revenue advantage if they use direct marketing methods. [14] emphasized the importance of raising the quality of cherries and raising the awareness of producers. [3], in his study called Agricultural Innovation in Turkey, in Kemalpaşa district of Izmir, has described the contribution of innovation to production and sales made in cherry. [20] examined the production of cherry on the basis of competitiveness of Serbia in agriculture. In their work, an export-oriented value chain and the rise in Serbia's cherry exports were examined.

Turkey, a major agricultural country, can take better advantage of existing agricultural potential to close the foreign trade deficit. For this reason, increasing the number of studies on trade of agricultural products is extremely important.

The aim of this study is to determine the position of Turkey in world cherry trade. Besides, the overall changes in the direction and value of the cherry trade between Turkey and importer countries will be examined. Thus, the share that Turkey has in the cherry markets of importer countries and the change in that share will be determined. Another purpose of this study is to discuss the impact of cherry export of various countries especially like Chile on Turkey's cherry trade.

2. Materials and Methods

The main material of the study is the data obtained from the International Trade Center database [16] In addition, we benefited from scientific studies related to the subject and the documents of the institutions like The United Nations Food and Agriculture Organization (FAO), Turkey Statistical Institute (TUIK), Turkey Exporters Assembly (TIM).

Many methods can be used in the analysis of international commercial developments. In this study, Trade Intensity Analysis method is used which shows the progress of bilateral trade relations. With this method, the change in trade shares between the exporting country and the importing country and the trade intensity between the two countries can be demonstrated [10-13]. Thereby, it contributes to the future planning of trading countries by determining the stability and continuity of the product trade between the two countries.

The model depends on the assumption that importer country's export ratio is fixed. If this constant rate changes over time, some factors will be considered playing a role [10-13]

Trade Concentration (territorialism) Coefficient = $X_{ij} * X_k / X_i * X_j$

X_{ikj} = k product export value of j country to i country

X_k = world foreign trade value of product k

X_{jk} = k product export value of j country

X_{ik} = k product import value of i country

If the importing and exporting countries do not fall under the influence of structural and regional factors, the share of exporter country in importer country and the share of the importing country in total world trade will not change for this product. If the increase

in the world trade share of the exporting country is higher than it should be theoretically, the concentration variable shows that as a trade partner, the importing country has an increasing attitude and interest in favor of the exporting country.

By dividing the world trade share to expected world trade share, one can determine determined how the concentration of the selected product trade between the two countries. The increase in this concentration coefficient in time shows the development of time dimension of trade relations. Greater than 1 of the concentration coefficient indicates that the importing country has shifted to the product of the exporting country above the theoretical expected rate [10-11-13]

In this study, the concentration coefficients between Turkey and some countries like Germany, Russia, Netherlands, Austria, Sweden and Italy are calculated. These countries were selected since they represent approximately 85% of Turkey's total export value cherries.

Research manuscripts reporting large datasets that are deposited in a publicly available database should specify where the data have been deposited and provide the relevant accession numbers. If the accession numbers have not yet been obtained at the time of submission, please state that they will be provided during review. They must be provided prior to publication.

Interventionary studies involving animals or humans, and other studies that require ethical approval, must list the authority that provided approval and the corresponding ethical approval code.

3. Results and Discussion

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

Cherry is a type of a fruit that grows in hot climate, and is widely traded. World cherry demand has scaled up over time correspondingly with the increase of the production area. Total cherry production area raised by 26% in the period between 2001 and 2020. Cherries are cultivated in many countries around the world. Turkey has the largest plantation area for cherries, and it corresponds to 174% of all plantation area. Turkey's plantation area tripled during the period between 2001 and 2020. As one can observe from Table 1 that covers seven biggest plantation areas of cherries and world total plantation areas, Spain and Iran's plantation areas stayed constant, while the USA and Chile experienced an increase in that period. Especially, Chile's plantation area increased almost 6 times.

Turkey not only leads the global cherry production but also leads the plantation area. Turkey meets almost one quarter of the world cherry production. The USA and Chile come after Turkey for cherry production. Moreover, in cherry yield the USA is leading country, however Turkey follows a fluctuating course in years. [12].

World total cherry export value was 3.8 billion \$ in 2020 (Table 2). World cherry export increased approximately six times between 2001 and 2020. The most crucial cherry exporter countries in the world are, respectively, Chile, USA, Hong Kong, Turkey, Austria, Spain and Canada. Those countries consist 84% of the cherry exports. It is striking that Chile has experienced a dramatic change. In 2001, Chile's share of world cherry export was 5.4%. However, in 2020 that value rose to 72.5%. Thanks to huge investment through cherry production, [18-8-17]. Chile's cherry export went up in the same period, and then Chile became a leading country in the cherry export.

Turkey's cherry export with an average growth of 18.4% annually in spite of the fluctuations between 2001 and 2020. However, Turkey's annual export rise for the same period was 18.4% [12]. Turkey's export value increased by years, however Turkey's share of export in world diminished. In 2001, Turkey's share in world export of cherries was 14% in 2001 while it decreased to 5.9% in 2020 (Table 2). There are two reasons for the fall of the market place of Turkey. First, the upward trend in cherry export is higher than in other

exporting countries excluding Turkey. Secondly, Turkey's unit export value is low comparing with other exporting countries (Table 4).

The most important cherry importer countries are China, Hong Kong, Germany, South Korea, Austria, and Canada (Table 3). The share of Asian countries in cherry imports is relatively high. Besides, Asian market draws attention as a developing market. In recent years, especially in China, there is a demand rise in parallel with the rise in global demand. China applied consumption based growth strategy after 2008 economic crisis, and became a significant market for cherry. Even though China was not one of the biggest 10 importer countries in 2007, nowadays it became the biggest cherry importer. On the other hand, several countries have decreased their imports. For example, Japan was the biggest importer in 2001, but now it ranks 11th. The main reason is the increase in Japan's cherry production.

Turkey is also responsive to the developments in Asian markets. Even though Turkey does not export to China, it takes measures to enter Chinese market. In this context, Republic of Turkey Ministry of Agriculture and Forestry and the Republic of China's Quality Control, Inspection and Quarantine General Administration (AQSIQ) has prepared the "Protocol for Plant Health Requirements for Cherry Exports from Turkey to China", and "Regulation for Plant Quarantine" [5].

Besides, according to a study made in Chile, one third of Chinese consumers are tend to consume cherry in the summer [4]. It is an advantage for Turkey since it harvests cherry in the summer.

Turkey generally uses road transportation for cherry trade. [9] determine that 97.59 % of exporting firms prefer road transportation. This is an obstruction preventing competition with Chile.

Every country wants to increase export incomes. That is why unit export value is as important as quantity of exports [25]. In 2013, Turkey and Chile exported nearly same amount of cherry, but Turkey had export income half of what Chile earned. Chile had competitive advantage since Chilean cherry producers organized and cooperated. Besides, Chile had price advantage since Chile's harvest time is different from Europe, and its R&D based production in global value chain [7].

In Table 4, unit export values for cherry exporting countries are given. World average cherry export income is 5057 \$/ton for the year 2020. Turkey has relatively poor performance with the half of global average cherry export income. The only country which had worse performance than Turkey is Uzbekistan. With respect to unit prices, Spain is the closest country to Turkey. In general, the cherry price exported from Europe is lower than in other parts of the world. The unit value of exports in Turkey is decreasing by years. The simultaneous maturation of cherries in Europe and Asia is one of the factors that reduce the unit value of exports, and the quality, type and consumer preferences of the cherry can also lead to a change in the unit export value.

In table 7, we select the countries which are the biggest trade partner of Turkey in cherry trade. After that, we calculated the concentration coefficient for the selected countries in between 2001 and 2020 (Table 7, Graph 1).

Turkey has increased its cherry trade with Germany which takes place on the top of importing countries. The concentration coefficient which was 2.3 in 2001, increased to 8.2 in 2020. Turkey's trade density with Germany continues to increase in cherry exports (Table 8).

The other important importing country is Russia. The concentration coefficient that demonstrates the trade density between Turkey and Russia, increased from 0.7 to 5.8 between 2001 and 2020. Even though the two countries had political issues after 2015, it is striking that the concentration coefficients were 6.5 and 5.8. There are two potential reasons behind this records. The first reason is that cherry is a seasonal product, and its trade takes short period of time, that is why the cherry trade was not affected due to the jet crisis. This crisis started on November 24, 2015, and lasted until June 12, 2020. However, the cherry exports were not affected. The second one is the sanctions imposed on Russia

by EU, the US, Canada, and Norway because of Russia's annexation of Crimea, and de-escalation efforts in Ukraine. Due to sanctions, Russia halted its food exports from those countries, but it increased its cherry imports from Turkey.

Turkey's cherry trade with Holland, Sweden, and Italy has also increased throughout years. However, its cherry trade with Austria has significantly declined (Table 8). Even though Austria has increased its cherry imports, it has chosen some other markets.

4. Conclusions

This section is not mandatory but can be added to the manuscript if the discussion is unusually long or complex.

Cherry which is a seasonal fruit and must be stored, can grow different geographies of the world. Turkey is a leading country in cherry production, but comes after the US and Chile in cherry exportation. Besides exports, domestic consumption of cherry is high in Turkey.

Turkey has increased its cherry exports by years. However, its share in cherry market has decreased by years. Turkey has chosen to focus on European markets because of geographical proximity, suitable trade policies, and relative prosperity of European consumers. For example, Iraq which is the third biggest country in Turkey's cherry exports with respect to quantity, exported only 4431 \$/ton in 2020. The value of exports to European countries is around 3000-4000 \$/ton. The focus on prosperous countries has also increased Turkey's exports.

As a result of the study, there are two trends in the world cherry markets. First one is the dramatic rise of the Chile in cherry markets. Second is the rise in cherry imports of Asian countries. Chile has accomplished this level of exports by all-out policies. The continuity in R&D policies played an important role in this success. China has implemented policies encouraging consumption in order to encounter 2008 economic crisis. In this context, its cherry exports have significantly boosted throughout those years. In addition to China, other Asian countries such as Hong Kong, South Korea, Taiwan, and Japan have also raised their cherry imports.

Turkey has played its cards well, and tried to obtain shares in cherry imports of those countries by making bilateral trade agreements. After negotiations with Chinese delegations, the reason why Turkey has lagged behind in the cherry exports, was revealed. The quality and taste of cherries are affected when they are stored in cold stores for 16 days as a protection caution for Mediterranean fruit fly. In order to solve this issue, the delegations of the two country has negotiated, and made progress. Herein, all stakeholders, especially exporting firms, should pay attention. Turkey has the advantage of that the consumers in China tend to consume cherries in the summer.

While Chile which has an important share in cherry imports of China exports cherry through sea route, Turkey prefers to export through road transport. That is why Turkey opts for the neighboring countries. Yet, it needs to increase its capacity in sea route in an attempt to reach far and new markets.

In conclusion, Turkey is an important country in cherry exports, and takes steps to enter to new markets. In addition to those steps, it is important to make progress in some areas like augmentation in modern packing facilities, discovery of methods for speedy shipment, and making publicity and advertisement for new markets like Asian markets. The coordination between the cherry producers and exports will bring about cut down in production costs, and provide competition advantage. Therefore, cooperation should be encouraged. In order to boost the incomes in cherry exports, it is needed to enter into the Far East countries such as China and South Korea.

Author Contributions: Writing—Original Draft Preparation: E.N.; Formal Analysis: E.N.; Methodology: E.N.; Writing—Review and Editing: E.N.; Review and Supervision: S.M., D.B.H. and N.-G.V. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Appendix

Table 1 - World cherry plantation area (hectare)

Years	World	Turkey	USA	Syria	Italy	Iran	Spain	Chile
2001	353640	30200	27559	11187	27320	25302	27830	6210
2005	355457	43000	32027	12000	27888	27815	23515	7100
2010	396328	67046	34411	27521	30020	27817	24290	13143
2011	404534	69985	34730	28022	30207	28166	24967	13174
2012	403606	74414	34961	29674	29736	28537	24972	13642
2013	416948	76459	36462	29536	30581	32110	25300	16243
2014	408422	79042	36300	29471	29766	20748	25594	16933
2015	411829	81409	36353	30016	30123	21300	26492	20591
2016	420582	84746	37110	35004	29970	28397	25252	24498
2017	420701	85401	37430	29702	29274	18784	27592	25109
2018	416191	84087	34400	30383	29160	12581	27370	30179
2019	439500	83447	34600	29961	29210	28330	27470	38392
2020	445068	82729	34400	30317	29010	24033	27760	39645

Source: FAO Statistics. 2020.

Table 2 - World cherry export (000 \$)

Years	World	Chile	USA	Hong Kong. China	Turkey	Austria	Spain
2001	348359	21674	152093	176	48702	27546	15521
2005	647759	56044	217871	1138	92146	66516	39127
2010	1271081	300782	356467	33807	147828	85647	64092
2011	1528721	368615	449223	73845	131001	72652	79842
2012	1666011	377332	523535	98855	156394	105107	74657
2013	1564522	390200	427603	78424	154717	69973	66445
2014	1948191	659676	475011	127816	145032	57715	97439
2015	1758994	509291	427294	181804	122672	55265	65646
2016	2412423	850547	455074	347643	182539	55265	66488
2017	2259711	571249	604094	301736	159042	97294	80861
2018	3068879	1078972	500458	647801	161674	69908	73968
2019	3576901	1559684	477744	764728	183839	54528	93206
2020	3814810	1594769	477671	849068	223709	52619	66408

Source: FAO Statistics, 2020

Table 3 - World cherry import (000 \$)

Years	World	China	Hong Kong. China	Germany	South Korea	Austria	Canada	Taiwan. China
2001	421684	46705	19622	55895	1365	34439	23903	26740
2005	718339	73278	21507	85738	8851	75240	62603	50513
2010	1246879	270565	124454	77220	33051	87343	131120	56847
2011	1555921	438655	179401	128950	43101	70766	160578	80412
2012	1771228	644298	248075	135358	82711	98720	160321	88585
2013	1644381	567325	199542	138146	89844	80384	138574	68594
2014	2046671	962737	338670	124009	125452	66021	131312	92249
2015	2074125	1082825	333843	112378	125801	63309	110982	75404
2016	2547947	1421588	535114	160744	124976	118147	107475	88312
2017	2540380	1324675	441915	192653	160405	77864	139065	110655
2018	3494222	2243069	835167	162446	163096	66768	124012	103541
2019	3680980	2491802	989897	164218	136758	71470	125189	100648
2020	393252	2601000	862291	187407	140748	103339	149058	93294

Source: FAOSTAT. 2020.

Table 4 - Unit export values for cherry exported countries

Exporter Countries	Unit export value (\$/ton)					Export value (000 \$)	Export Quantity (Tons)
	2016	2017	2018	2019	2020	2020	2020
World	4405	4324	4335	4827	5057	3814810	754387
Chile	7189	7010	5846	7083	6872	1594769	232055
USA	6288	5664	5960	5887	7520	477671	63524
Hong Kong. China	4259	4353	4684	4559	5144	849068	165065
Turkey	2288	2645	2147	2283	2564	223709	87252
Austria	3726	3909	3688	3476	3870	73352	18954
Spain	3132	2906	2338	3443	3582	66408	18537
Canada	6231	5493	6447	6208	7927	54096	6824
Uzbekistan	1582	2190	4172	1942	1935	60705	31371
New Zeeland	11794	14936	13602	15856	14835	41376	2789
Australia	10538	12480	11149	11481	13229	55693	4210

Source: FAOSTAT. 2020.

Table 5 - Turkey’s unit export values for imported countries

Imported Countries	Unit export value (\$/ton)	Export value (000 \$)	Export Quantity (Tons)
--------------------	----------------------------	--------------------------	------------------------------

	2016	2017	2018	2019	2020	2020	2020
Total	2288	2645	2147	2283	2564	223704	87254
Germany	3228	3659	3568	3197	3501	90642	25894
Russia	1548	1510	1306	1712	1749	51774	29599
Holland	4318	4715	4773	3977	3579	7663	2141
Austria	3021	4021	2959	2981	3519	13638	3876
Sweden	2549	2678	243	2778	2432	6698	2754
Italy	2549	2678	243	2778	2432	6698	2754
Norway	4387	4674	4471	4701	5156	7847	1522
Iraq	283	397	287	274	612	4431	7243
Denmark	3191	3199	3134	2735	3176	3932	1238
Belgium	6630	6804		2550	2544	201	79
United Kingdom	2367	3311	3155	232	2838	3896	1373
Saudi Arabia	1634	2574	1572	2685	821	46	56
Belarus	757	1212	931	1192	1580	1708	1081
Singapore	6507	5572	4492	3938	4426	2275	514
Hong Kong. China	5155	4752	3672	4026	4459	5922	1328

Source: ITC. 2020

Table 6 - Chile’s unit export values for imported countries

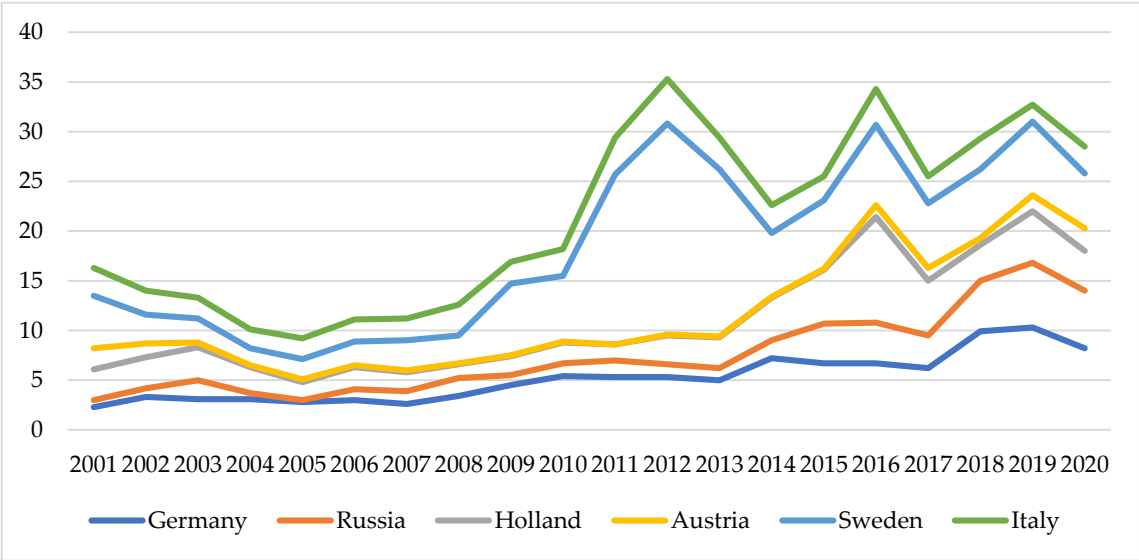
Imported Countries	Unit export value (\$/ton)					Export value (000 \$)	Export Quantity (Tons)
	2016	2017	2018	2019	2020	2020	2020
Total	7189	7010	5846	7083	6873	1594439	231991
China	7652	7558	5974	7247	6935	1469081	211844
USA	4551	4450	4253	5400	5593	26213	4687
Taiwan. China	7501	7072	5901	6930	7982	16715	2094
Hong Kong. China	4481	5147	5185	6268	6399	3430	536
Brasilia	4675	3810	4515	4766	5314	11786	2218
United Kingdom	6298	5598	5237	5326	5340	10013	1875
South Korea	7180	7247	7522	7441	8172	25644	3138
Thailand	7880	7833	6668	8056	8097	8057	995
Spain	6345	5313	5749	7421	7853	2670	340
Holland	6179	5655	5773	6619	6787	2579	380
Ecuador	2040	2063	2099	1963	2387	3850	1613
France	7771	8619	7629	8660	8433	1130	134
Mexico	5885	7647	6552	8855	8398	949	113
Italy	7255	6676	7311	7136	8458	406	48
Germany	7612	7765	8429	10670	11321	600	53
Canada	4984	5644	4854	5807	5336	3079	577
Russia	10711	9581	10852	11101	11853	1375	116

Source: FAOSTAT. 2020.

Table 7 - Cherry export (000 \$)

Years	World Export Value	Turkey Export Value	Germany's Import Value	Turkey's Exports to Germany	Russia's Import Value	Turkey's Exports to Russia	Holland's Import Value	Turkey's Exports to Holland	Austria's Import Value	Turkey's Exports to Austria	Sweden's Import Value	Turkey's Exports to Sweden	Italy's Import Value	Turkey's Exports to Italy
2001	401787	49284	55895	15587	4705	400	15242	5742	34439	8952	2507	1629	17147	5881
2002	433263	49384	48706	18396	3322	344	18861	6648	34007	5451	2865	933	12131	3331
2003	546738	77696	64068	28012	10727	2917	25483	11777	49717	3806	3742	1275	21315	6212
2004	589564	118001	80349	50544	29202	3454	30357	15655	99983	3045	6139	2095	39749	14911
2005	646730	93594	85738	35032	41856	1360	25877	6741	75240	2750	5969	1737	23498	7151
2006	768875	129261	94915	47443	59737	10976	26835	9831	91400	2911	5961	2423	30110	11344
2007	856747	144203	96788	42948	96001	21404	29686	9269	87832	2509	6199	3127	25677	9722
2008	1047748	113458	100537	37079	92099	18315	37542	5817	73022	468	4531	1370	26556	8906
2009	958158	132939	72810	45702	121678	17424	35136	9290	88895	1259	2348	2347	34387	10704
2010	1201773	147835	77220	51618	143674	22725	31398	8289	87343	1081	3272	2643	30271	9924
2011	1570436	131042	128950	57043	125580	17847	32640	4433	70766	82	3425	4885	30302	9475
2012	1647798	156394	135358	67610	110195	13259	27394	7518	98720	516	3624	7290	31768	13549
2013	1582427	154717	138146	66930	122066	14445	28353	8686	80384	727	4498	7387	23992	7531
2014	1938715	145032	124009	67067	93912	12973	29730	9572	66021	435	12323	5860	28415	5866
2015	1763437	122672	112378	52465	71053	21452	23502	8906	63309	558	11559	5550	20096	3370
2016	2388961	182539	160744	81972	85386	26766	20035	16288	118147	10624	16081	10004	32758	8917
2017	2259711	159042	192653	84021	94517	21704	31020	12062	77864	7060	11834	5395	18427	3489
2018	3068879	161674	162446	84398	116816	31369	32761	6196	66768	2323	11685	4259	23245	3848
2019	3576901	183839	164218	86898	129323	43464	37578	10125	71470	5845	8263	3131	37937	3239
2020	3814810	223710	187407	90642	150978	51776	32574	7663	103339	13638	12459	4019	42101	6698

Source: FAOSTAT. 2020.



Graph 1 - The concentration coefficients of Turkey in cherry

Table 8 - The concentration coefficients

Years	Germany	Russia	Holland	Austria	Sweden	Italy
2001	2.3	0.7	3.1	2.1	5.3	2.8
2002	3.3	0.9	3.1	1.4	2.9	2.4
2003	3.1	1.9	3.3	0.5	2.4	2.1
2004	3.1	0.6	2.6	0.2	1.7	1.9
2005	2.8	0.2	1.8	0.3	2.0	2.1
2006	3.0	1.1	2.2	0.2	2.4	2.2
2007	2.6	1.3	1.9	0.2	3.0	2.2
2008	3.4	1.8	1.4	0.1	2.8	3.1
2009	4.5	1.0	1.9	0.1	7.2	2.2
2010	5.4	1.3	2.1	0.1	6.6	2.7
2011	5.3	1.7	1.6	0.0	17.1	3.7
2012	5.3	1.3	2.9	0.1	21.2	4.5
2013	5.0	1.2	3.1	0.1	16.8	3.2
2014	7.2	1.8	4.3	0.1	6.4	2.8
2015	6.7	4	5.4	0.1	6.9	2.4
2016	6.7	4.1	10.6	1.2	8.1	3.6
2017	6.2	3.3	5.5	1.3	6.5	2.7
2018	9.9	5.1	3.6	0.7	6.9	3.1
2019	10.3	6.5	5.2	1.6	7.4	1.7
2020	8.2	5.8	4.0	2.3	5.5	2.7

References

1. Açikköse, S.; Gürbüz, İ. B. Export investigation of cherry for the city of bursa. *Turkish Journal of Agricultural and Natural Sciences*, 5(2): 191–202, 2018.
2. Adanacioğlu, H. Marketing efficiency of cherry growers in direct marketing strategies. *Balkan and Near Eastern Journal of Social Sciences*, 03 (01), 2017.
3. Akkoyunlu, Ş. Agricultural innovations in turkey. NCCR Trade Regulation Working Paper No 2013/30 December 2013.
4. Anonymous. *Description of the Chilean cherry committee dated 08/31/2017*. Retrieved in January, 15, 2018 from <http://www.freshplaza.com/article/180700/Chilean-cherry-exporters-prepare-strategy-for-the-new-campaign>., 2017.
5. Anonymous. *Türk kirazlarının çin'e ihraç edilmesine yönelik bitki sağlığı gereklilikleri protokolü*. Retrieved in January, 15, 2018 from <http://intranet.uib.org.tr/srklr/Sirkuler/2017/193/20175231668473.pdf>., 2015.
6. Arisoy, H.; Bayramoğlu, Z.; Çelik, Y.; Özer, O. O. Regional concentration of Turkish dried fruits exports. *Turkish Journal of Agriculture - Food Science and Technology* 1(2): 269–280, 2014.
7. Bamber, P.; Stark-Fernandez, K. *Fresh cherry industry in Chile. Chapter 21, Asia-Pacific Economic Cooperation, Services in Global Value Chains: Manufacturing-Related Services*, Retrieved in March, 01, 2018 from <https://www.apec.org/-/media/APEC/Publications/2015/11/Services-in-Global-Value-Chains-Manufacturing-Related-Services/TOC/Chapter-21-Fresh-Cherry-Industry-in-Chile.pdf>, 2015.
8. Blonigen, B. A.; Fontagne, L.; Sly, N.; Toubal, F. Cherries for sale: the incidence and timing of cross-border M&A. *Journal of International Economics*, 94, 341–357, 2014.
9. Çerçinli, Öz. F.; Bal, T. The analysis of cherry export in terms of cherry exporter perspective in Isparta province. *Journal of Agricultural Faculty of Mustafa Kemal University*, 21(1):71-82, 2016.
10. Eraktan, G. Auswirkungen der Assoziierung der Türkei mit der EWG auf die türkische Landwirtschaft. Publikationen der Landwirtschaftlichen Fakultät der Universität Ankara-1064, Wissenschaftliche Forschungen und Studien-567, Ankara, 1988.
11. Eraktan, G.; Arisoy, H. Türkiye'nin Yaş Meyve Sebze İhracatı – Mevcut Durum, Sorunlar ve Çözüm Önerileri. *İstanbul Ticaret Odası Yayınları – Sektörel Etütler ve Araştırmalar*, Yayın No:2010-92, ISBN:978-9944-60-865-7 (Basılı), ISBN:978-9944-60-866-4 (Elektronik), İstanbul, 2012.
12. FAO. Food and agriculture organization of the united nations, statistics, Retrieved in January, 15, 2020 from <http://www.fao.org/statistics/en/>, 2020.
13. Froment, R.; Zighera, J. *La structure du commerce mondial, Conference de la Society d'Econometrie*, Zurich, 1964.
14. Gül, M.; Kart, M. C. O.; Yilmaz, Ş. G.; Uzunkaya, K. *Opportunities and constraints for cherry exporters in turkey*. Custos e @gronegócio on line - v. 12, n. 2 – Abr/Jun - 2016.
15. Hey, J. *Full steam ahead for chilean cherries*. Retrieved in January, 15, 2018 from <http://www.fruitnet.com/asiafruit/article/170816/full-steam-ahead-for-chilean-cherries>, 2016.
16. ITC. International trade center, trade statistics. Retrieved in January, 15, 2020 from <http://www.intracen.org/itc/market-info-tools/trade-statistics/>, 2020.
17. Luong, T. A. *Picking cherries or lemons: A unified theory of cross-border mergers and acquisitions*. *World Economy*, 2018, 41, 653–666, 2018.
18. Ramondo, N. Foreign plants and industry productivity: Evidence from Chile. *Scandinavian Journal of Economics*, 111 (4), 789–809, 2009.
19. Smith, A. *Wealth of Nations*. English originally translated: Haldun Derin, Offering: Gülten Kazgan, Türkiye İş Bankası Kültür Yayınları, ISBN: 9754589275, 1776.
20. Sredojevic, Z.; Milic, D.; Jelocnik, M. Investment in sweet and sour cherry production and new processing programs in terms of serbian agriculture competitiveness. *Petroleum Gas University of Ploiesti Bulletin, Economic Sciences Series*, Vol. 63 No. 3, 2011, 37-49, 2011.
21. Tekdemir, N. A research on socio-economic structure of white cherry (prunus avium l.) Growers in ereğli district in konya province. Master Thesis, Ankara University, Turkey, 2011.
22. TIM. *Turkish exporters assembly, agricultural report*. Retrieved in March, 2018 from http://www.tim.org.tr/files/downloads/Raporlar/Tarim_Raporu_2017.pdf, 2016b.
23. TIM. *Turkish exporters assembly, economy and foreign trade report*. Retrieved in March, 01, 2018 from <http://www.tim.org.tr/tr/ihracat-arastirma-raporlari-ekonomi-ve-dis-ticaret-raporlari.html>, 2016a.
24. TUIK. Turkish statistical institute, foreign trade statistics. Retrieved in March, 01, 2018 from <http://www.tuik.gov.tr/Ust-Menu.do?metod=temelist>, 2020.
25. Vandebussche, H. Quality in exports. European Commission Directorate-General for Economic and Financial Affairs, *Economic Papers*: 528 September 2014, ISSN 1725-3187 (online), 2014.
26. WTO. World trade organization, *documents and resources*. Retrieved in March, 01, 2018 from www.wto.org., 2020.