COMPETITION POWER OF TURKEY'S HONEY EXPORT AND COMPARISON WITH BALKAN COUNTRIES

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Abstract

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Beekeeping is one of the oldest agricultural activities in the world. This activity, which is performed traditionally in some countries, has significant functions such as increasing income of producers and contributing to pollution crop production. Turkey has significant potential in honey production with proper ecology, rich flora and material genetic variation in bees. Determining the level of export competitiveness of honey in Turkey and comparing it with that of Balkan Countries (Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Greece, Moldavia, Montenegro, Macedonia, Romania, Serbia, and Slovenia) for 2001-2015 periods, was the major aim of this study. The competitiveness level of honey export was calculated using Revealed Comparative Advantage (RCA) index and Trade Balance Index (TBI). The data of this study was provided from International Trade Centre (INTRACEN) database. The results revealed that the average RCA and TBI scores for Turkey were 1.86 and 0.86, respectively. The findings shows that despite of weak comparative advantage, Turkey is still a net exporter country in honey export. According to the average RCA scores, Bulgaria, Romania and Serbia have strong, Croatia and Greece have low, and Republic of Macedonia has a weak comparative advantage in honey export while Albania, Bosnia and Herzegovina and Slovenia have no comparative advantage in honey export.

Key words: honey export; Revealed Comparative Advantage Index; Trade Balance Index; Balkan countries; Turkey

Introduction

Beekeeping activities gain importance thanks to better understanding of people about benefits and contributions to human health, spread use as nutrition, treatment and cosmetic purposes in developing and developed countries (Saner et al., 2011). As one of the oldest farm activity, beekeeping has been very important all around the World with different forms; as a traditional activity in Europe, a means of increasing farmers' income in Spain, Poland, Hungary, Greece and Turkey, important export resource in Far Eastern, Middle and South America and Africa, natural and a good pollination resource for U.S.A., Canada and Japan (Firatli et al., 2000; Vural, 2008; Koç et al., 2010; Saner et al., 2011; Engindeniz et al., 2014).

World honey production keeps rising in parallel with hive number. While World total honey production was 1.250 million tons in 2000, it reached to 1.499 million tons in 2010 and 1.511 million tons by 2014. China takes first place in terms of honey production. China produced 462 thousand tons of honey with %30.6 share of total production in 2014, followed by Turkey (104 thousand tons), U.S.A. (81 thousand tons) and Iran (76 thousand tons). In 2014, honey production quantity of Balkan countries (Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Greece, Hungary, Republic of Macedonia, Moldavia, Montenegro, Romania, Serbia, and Slovenia) is about 82 thousand tons. Romania ranks the first place of Balkan countries with 18 thousand tons of honey production and followed by Hungary (17 thousand tons),

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Greece (16 thousand tons) Bulgaria (9.3 thousand tons) and Croatia (6.3 thousand tons), respectively (FAOSTAT, 2017).

Honey trade volume of the World resulted around $ 4.7 billion in 2015. While World honey export was only 458 million $ in 2001, it went up to 2.3 billion $ in 2015 by 4.1 times raise. Along with leading honey producers, China is also keeping the first place of the World honey export. China was followed by Argentina till 2014, however, New Zeeland ranked second place in terms of honey export since 2015. In 2015, honey export amount of China, New Zealand, Argentina, Mexico, Germany and India are $ 289 million, $ 200 million, $ 164 million, $ 156 million, $ 142 million and $ 122 million, respectively. These six countries realize 46.1% of world total honey export value. Despite the fact that Turkey is a second largest honey producer among them, its honey export is low due to consuming a major part of honey production in the domestic market (Koç et al., 2010). Turkey is on 23rd place in the world ranking with export value $ 25 million by 2012. As for Balkan States, Hungary is on the 12th, Romania and Bulgaria are on the 15th and 19th positions with $ 80 million, $ 46 million and $ 38 million of export value respectively. The largest honey importers in the world are USA, Germany, United Kingdom, France and Japan. By 2015, honey import values of these countries had become $ 605 million, $ 325 million, $ 131 million, 128 million and $ 118 million, respectively, and made up 56.2 % of world honey import value. Honey import of Turkey is nearly absent. While in 2001 Turkey's honey import was $ 466 thousands, by 2015 it had decreased by $ 2 thousands. In 2015, total honey import of Balkan countries were $ 35 million, Greece took the top place with honey import value of $ 9 million. Greece was followed by Slovenia, Romania, Hungary and Bulgaria, respectively (INTRACEN, 2017).

Turkey has important potential of honey production given the appropriate ecology, rich flora and genetic variation of bee species (Güler and Demir, 2005; Yıldırım and Ağar, 2008). Turkey has been on the second place, having 7 million of hives and 104 thousand tons of honey production (FAOSTAT, 2017). However, with 15 kg average yield per hive, Turkey is far behind of World average (40 kg). In addition, comparatively low value of honey export level reveals that Turkey cannot utilize current potential of resources. Beekeeping in Turkey is very important both for increase of agricultural income and agricultural variation. However, institutionalization did not come true yet. Despite institutions present different standards for beekeepers, they prefer managing the business according to their traditions and self-experiences and so this situation prevents real potential of beekeeping sector to reveal (Koç et al., 2010; Ören et al., 2010).

The purpose of the study is to exhibit the competitiveness level of Turkey and Balkan countries (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Moldavia, Montenegro, Republic of Macedonia, Romania, Serbia, and Slovenia) in terms of honey export and to compare them with each other's.

Material and Method

Main material of the study is consisting of data obtained from International Trade Center (INTRACEN) database. Dataset between 2001-2015 years was used in the paper. Because of inconvenient data of the year 2016, the most appropriate dataset thought to be the period of 2001-2015 years. Along with the dataset, national and international literature as well as some reports were among the resources benefited from as an input.

In determination of competitiveness level of Turkey and Balkan countries of honey trade, Revealed Comparative Advantage Index and Trade Balance Index were used. Revealed Comparative Advantage Index was first found by Liesner (1958) and redefined and improved by Balassa (1965). Afterwards, it was named as Balassa Index. Revealed Comparative Advantage Index is commonly accepted in literature and used to scale specialization in international trade (Kanaka and Chinadurai, 2012; Pilinkiene, 2014; Torok and Jambor, 2016; Çicek and Bashimov, 2016). RCA index is used to determine weak and strong export sectors of countries (Aiginger, 2000; Bojnec and Fertö, 2007). The purpose is to find out whether countries have comparative advantage rather than determining factors underlying comparative advantage (Çakmak, 2005). Balassa formulates RCA index as below:

$$RCA_{ij} = \left[\left(\frac{X_{ij}}{X_i} \right) \Big/ \left(\frac{X_{wj}}{X_w} \right) \right]. \tag{1}$$

Here, we define RCA_{ij}, as Revealed Comparative Advantage Index of sector 'j' of 'i' country, X_{ij} as export, X_i as total export, X_{wj} as total World export of sector 'j' and X_w as total World export. RCA index is a value within 0 and ∞. If index score is greater than or equal to 1, it means that country has comparative advantage of that sector. In other words, the share of that sector in total export is greater than the share of World trade. If index score is less than 1, the sector does not have comparative advantage (Mushanyuri and Mzumara, 2013; Peker, 2015). Moreover, to indicate the strength of comparative advantage, RCA coefficient of Balassa is classified as below (Hinloopen and Marrewijk, 2000):

➤ Class 1: $0 < RCA \le 1$: No comparative advantage
➤ Class 2: $1 < RCA \le 2$: Weak comparative advantage
➤ Class 3: $2 < RCA \le 4$: Medium comparative advantage
➤ Class 4: $4 < RCA$: Strong comparative advantage

Competitiveness of various sectors and sub-sectors in domestic and international literature were determined, using RCA index. Textile industry in USA (Lyford and Welch, 2004), textile and readymade industry in Turkey (Çakmak, 2005), textile industry in China (Tao and Fu, 2007), furniture industry in Turkey (Altay ve Gürpınar, 2008), industry of Lithuanian (Startiene and Remeikiene, 2014), tomatoes in Turkey (Bashimov, 2016) and wine industry in Turkey (Uysal et al., 2016).

Another index that is used to determine competitiveness level of countries is Trade Balance Index. Trade Balance Index (TBI) is used to analysis whether a country is a net exporter or importer of a product and it is formulated as below (Lafay, 1992; Widodo, 2008).

$$TBI_{ij} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}. \tag{2}$$

TBI_{ij} is the trade balance indicator of j goods of country 'i'. X_{ij} and M_{ij} represent the export and import of 'j' product of 'i' country, respectively. This index value varies between -1 and +1. If $TBI_{ij} > 0$, the country is net exporter. If $TBI_{ij} < 0$, the country is net importer (Ullah and Kazuo, 2013).

Results and Discussion

While number of hives in Turkey was 4.1 million in 2001, it reached to 7.7 million increasing by %87.3 in 2015. Depending mainly to the increasing number of hives, the honey production reached to 108 thousand tons in 2015 from 60 thousand tons in 2001, which means a %78.9 increase during the examined period (Table 1). Despite increase in hive numbers and honey production, the yield per hive decreased. Although Turkey consumes major part of the honey in domestic market, she still has the potential to export even at comparatively small scale. Substantial amount of honey is exported to Germany as honeydew honey followed by France and Saudi Arabia. Turkey had honey surplus during 2001-2015 years period except for 2008 (Table 1).

Honey producer price of Turkey and Balkan countries during 2001-2015 period is given in Figure 1. Honey producer price has been on the rise since 2001. While honey producer price in Turkey was $ 3782 per tones in 2001, it rose up to $ 11710 in 2010 but later started to fall down to $ 7917 in 2015. Despite the decreases in honey producer prices, it is still higher than that of all Balkan countries except for Albania. Lowest producer price levels for Balkan countries are that of Moldavia, Bulgaria, Serbia and Hungary (Figure 1).

Revealed Comparative Advantage (RCA) index scores of Turkey and Balkan countries are given on Table 2. Mean RCA score of Turkey during 2001-2015 period was 1.81. According to the result, Turkey can be thought to have comparative advantage at honey trade. In other words, Turkey has competitive power of honey trade. However, competitive power is weak. In examined 2001-2015 period, it is seen that competitiveness of Turkey at honey trade decreased excluding 2001-2004 years.

Table 1
Number of beehives, honey production, honey yield and trade statistics in Turkey

Years	Number of beehives	Honey production (tons)	Honey Yield (kg)	Honey export Value (000 $)	Honey import Value (000 $)	Trade balance (000 $)
2001	4115353	60190	15	6800	466	6334
2002	4160892	74554	18	32335	690	31645
2003	4288853	69540	16	37090	1212	35878
2004	4399725	73929	17	16329	639	15690
2005	4590013	82336	18	6564	521	6043
2006	4851683	83842	17	5499	126	5373
2007	4825596	73935	15	1759	215	1544
2008	4888961	81364	17	2286	4002	-1716
2009	5339224	82003	15	4495	113	4382
2010	5602669	81115	15	5811	2	5809
2011	6011332	94245	16	5206	0	5206
2012	6348009	89162	14	6007	1	6006
2013	6641348	89162	14	12956	0	12956
2014	7082732	103525	14	18919	68	18851
2015	7709636	107665	14	25072	2	25070

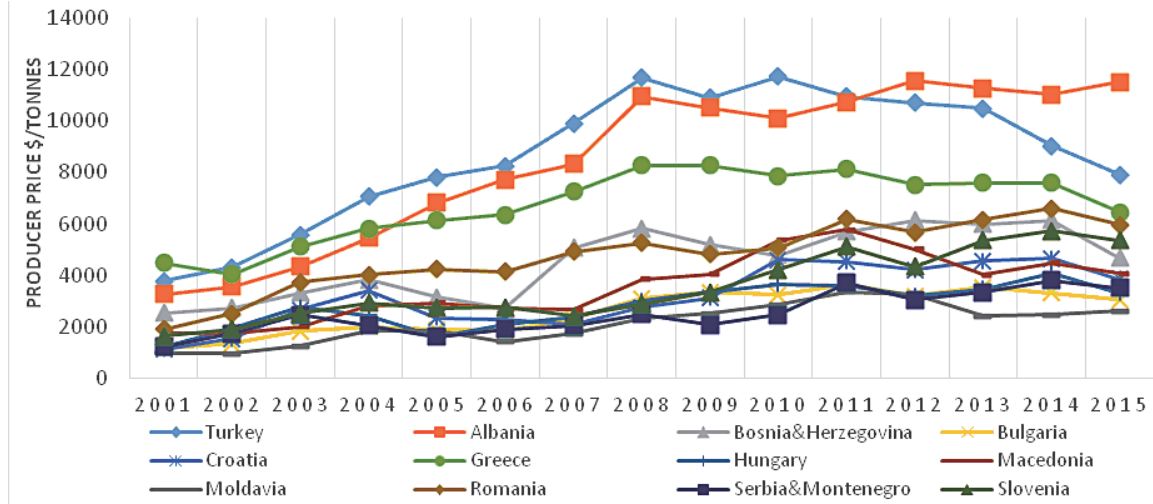*Source*: RTMFAL, 2017; FAOSTAT, 2017; INTRACEN, 2017

Fig. 1. Producer price of honey in Turkey and Balkan countries (FAOSTAT, 2017)

Out of Balkan countries, while Bulgaria, Croatia, Greece, Hungary, Macedonia, Moldavia, Romania and Serbia had a competitiveness of honey trade, Albania, Bosnia-Herzegovina, Montenegro and Slovenia were among non-competitive ones. The results of RCA revealed that while Moldavia (12.81), Bulgaria (11.30), Hungary (8.1), Romania (8.01) and Serbia (5.29) had high competitive power of honey trade, Croatia (2.54) and Greece (2.24) had moderate competitive power and Macedonia (1.36)

had weak competitive power. The comparison of RCA index score of honey trade of Turkey with Balkan countries during 2001-2015 period indicated that while Turkey was less competitive than that of Moldavia, Bulgaria, Romania, Serbia, Croatia and Greece, She was more competitive than that of Macedonia, Albania, Bosnia-Herzegovina, Montenegro and Slovenia (Table 2).

As for RCA index score calculation, high share of honey export in total export leads country to become more com-

Table 2
Revealed comparative advantage index score for Turkey and Balkan Countries*

Years	Turkey	Albania	Bosnia	Bul-garia	Croatia	Greece	Hun-gary	Mace-donia	Molda-via	Monte-negro	Roma-nia	Serbia	Slove-nia
2001	2.90	---	-----	9.26	2.77	2.88	8.43	0.45	11.21	----	9.78	----	0.78
2002	8.05	0.08	-----	10.49	4.42	1.11	9.49	0.06	29.39	----	7.93	----	0.58
2003	6.10	0.07	0.03	16.16	4.14	1.16	9.41	1.51	8.07	----	11.45	----	0.57
2004	2.75	0.00	0.06	15.60	1.51	2.86	9.71	0.58	5.34	----	9.97	----	0.54
2005	1.30	0.00	0.09	9.08	1.35	3.17	9.98	0.77	4.72	----	6.59	----	0.45
2006	0.93	0.07	0.02	9.22	2.14	1.97	9.19	0.69	5.26	0.62	9.17	1.20	0.31
2007	0.25	0.00	0.04	7.84	3.78	2.41	9.70	0.60	7.62	0.02	6.24	2.13	0.33
2008	0.21	0.07	0.01	6.75	4.58	1.75	9.92	------	8.07	0.16	6.21	2.38	0.23
2009	0.43	0.08	0.06	12.47	4.77	2.10	7.22	1.68	5.93	0.94	10.12	3.79	0.15
2010	0.52	0.31	0.09	14.67	2.73	2.33	6.49	1.77	10.18	0.02	8.59	7.78	0.12
2011	0.41	0.61	0.08	10.03	1.97	1.96	5.74	2.58	5.93	0.32	6.99	4.62	0.11
2012	0.41	0.34	0.02	12.36	1.41	2.46	6.40	2.93	11.13	0.00	8.00	11.94	0.15
2013	0.78	0.34	0.03	14.09	0.80	2.59	7.63	2.34	12.19	0.06	7.53	9.26	0.13
2014	0.97	0.00	0.04	11.48	0.68	2.18	6.65	1.83	33.59	0.04	6.25	4.74	0.18
2015	1.21	0.00	0.05	10.08	1.08	2.73	5.49	1.30	33.57	0.10	5.27	5.02	0.13
Mean	1.81	0.13	0.05	11.30	2.54	2.24	8.10	1.36	12.81	0.23	8.01	5.29	0.32

*Calculated by author

Table 3
Trade balance index score for Turkey and Balkan Countries*

Years	Turkey	Albania	Bosnia	Bul-garia	Croatia	Greece	Hun-gary	Mace-donia	Molda-via	Monte-negro	Roma-nia	Serbia	Slove-nia
2001	0.87	-1.00	----	0.96	0.83	-0.24	0.93	0.73	0.97	---	0.88	---	0.25
2002	0.96	-0.87	----	0.98	0.93	-0.61	0.95	0.17	0.98	---	0.83	---	0.89
2003	0.94	-0.76	-0.99	0.87	0.95	-0.41	0.90	0.93	0.88	---	0.96	---	0.61
2004	0.92	-1.00	-0.97	0.94	0.94	-0.34	0.84	0.77	0.99	---	0.99	---	0.02
2005	0.85	-1.00	-0.97	0.99	0.77	-0.35	0.88	0.85	0.94	---	0.99	---	-0.42
2006	0.96	-0.85	-0.99	0.98	0.98	-0.40	1.00	0.60	0.95	-0.91	0.98	0.91	-0.59
2007	0.78	-1.00	-0.98	0.90	0.98	-0.41	0.88	-0.20	0.83	-1.00	0.91	0.93	-0.32
2008	-0.27	-0.90	-1.00	0.74	0.91	-0.45	0.83	-----	0.92	-0.98	0.85	0.98	-0.56
2009	0.95	-0.88	-0.97	0.95	0.90	-0.35	0.94	0.07	0.99	-0.92	0.93	0.96	-0.71
2010	1.00	-0.45	-0.94	0.96	0.75	-0.17	0.97	-0.05	0.99	-1.00	0.89	0.96	-0.80
2011	1.00	-0.02	-0.94	0.94	0.70	-0.20	0.99	0.27	0.99	-0.96	0.84	0.97	-0.83
2012	1.00	-0.52	-0.99	0.90	0.53	0.03	0.95	0.12	0.99	-1.00	0.79	1.00	-0.77
2013	1.00	-0.32	-0.98	0.84	0.02	-0.09	0.99	0.06	0.89	-0.99	0.82	0.97	-0.82
2014	0.99	-1.00	-0.96	0.88	-0.17	-0.08	0.93	0.14	0.97	-1.00	0.73	1.00	-0.82
2015	1.00	-1.00	-0.93	0.86	-0.14	0.08	0.90	-0.26	0.96	-0.99	0.76	0.98	-0.85
Mean	0.86	-0.77	-0.97	0.91	0.66	-0.27	0.93	0.30	0.95	-0.98	0.88	0.97	-0.38

*Calculated by author

petitive. In other words, Countries that have more share of honey export in total export value are more competitive than others. For Turkey to be more competitive in honey trade, honey export should increase proportionally more than total export increase. This can be therefore achieved by keeping tendency of export rise in recent years.

Another index used to determine the competition level of honey trade between Turkey and Balkan countries was Trade Balance Index (TBI). TBI score is given at Table 3. TBI index of Turkey has been positive for all years of examined period (2001-2015 years) excluding the year of 2008. It can be said that Turkey is net exporter country during the period examined. Moreover, Turkey has not imported honey since 2009.

While Albania, Bosnia-Herzegovina, Greece, Montenegro and Slovenia had negative values of TBI scores, Bulgaria, Croatia, Hungary, Macedonia, Moldavia, Romania and Serbia had positive values. On the other hand, while Albania, Bosnia-Herzegovina, Greece, Montenegro and Slovenia are net importer countries, Bulgaria, Croatia, Hungary, Macedonia, Moldavia, Romania and Serbia are net exporter countries. Results of RCA and TBI index scores are matching with each other. It can be deduced that in terms of RCA index competitive countries can be defined as net exporter countries.

Conclusion

The results of study indicated that although Turkey was a net honey exporter country, she has a weak competition

power regarding honey trade. As regards honey trade competition, while Turkey is less competitive than Moldovia, Bulgaria, Romania, Serbia, Croatia and Greece, She is more competitive than Macedonia, Albania, Bosnia-Herzegovina, Montenegro and Slovenia.

Although the honey production quantity is relatively high in Turkey, its export is low due to mainly high domestic consumption and high producers' prices. Increasing the current competition power can be said to be mainly consistent with decreasing the relatively high domestic prices while raising productivity rates.

Out of Balkan countries, Moldovia, Bulgaria, Hungary, Romania, Serbia, Croatia, Greece and Macedonia are competitive in honey trade. These countries except for Greece are also net exporters. On the other hand, Albania, Bosnia-Herzegovina, Montenegro and Slovenia are among noncompetitive Balkan countries and they are also net importer countries. It is seen that Balkan countries which have competitive power have also relatively low producers' prices.

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