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BILATERAL TRADE TRENDS AND PATTERNS OF BOSNIA AND HERZEGOVINA: CASE OF TRADE WITH TURKEY

ABSTRACT:

A country's trade pattern reflects its supply (export) and demand (import) specialization indicating national performance and competitiveness in the foreign as well as in the domestic market. By applying two different concepts of trade specialization (one based on traditional trade theories of comparative advantages and the other based on modern trade theories), complemented with the analysis of export-import flows and relations, the paper aims to identify characteristics of the position of Bosnia and Herzegovina (B&H) in its bilateral trade. The paper investigates trends, patterns and variations in the trade of B&H with Turkey during the eleven-year time frame (2009-2019), with special regard to identifying industries with revealed comparative advantages and industries with dominancy of IIT. The analysis employs different indicators such as indices of export composition, sectoral diversification/concentration, IIT intensity and structure, quality of exports and imports based on relative unit values and classification of industries by technological intensity. The research results indicated an unfavourable position of B&H in trade with Turkey, with no prominent changes in the observed period. The trade deficit is constantly present, with low export-import coverage and a declining export trend. The analysis revealed a higher level of export product concentration primarily on low value added products, and comparative advantages of B&H in fewer industries, mainly resource-based or medium-technologically intensive. Trade with Turkey is extremely inter-industry trade, viewed both at an aggregate and industrial level, also pointing to B&H's low competitiveness in analyzed trade relations.

Keywords: *trade patterns, inter-industry trade specialization, intra-industry trade specialization, Bosnia and Herzegovina, Turkey*

JEL: *F10, F14, L60, O52*

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1. INTRODUCTION

The paper focuses on the analysis of the trade pattern of Bosnia and Herzegovina (B&H) in its trade with Turkey, particularly concerning inter-and intra-industry trade specialization. The results derived from the analysis should point out the export/import structure and level of their diversification, prevailing trade component - inter- or intra-industry trade - and its trend, a dominant IIT type by product differentiation (vertical or horizontal), industries with comparative advantage and industries with high IIT intensity in trade with Turkey. The responses will contribute to the insight into the overall trade performance of B&H and its individual industries' competitive ability in the country's important bilateral trade relations.

The timeframe of the research encompasses the period between two revisions of the free trade agreement with Turkey - from 2009 to 2019. Trade relations between the two countries were significantly improved after the signing of the mutual free trade agreement on 3rd July 2002³ within the trade liberalization process spurred by the regional cooperation initiative Stability Pact for South-Eastern Europe. The agreement was asymmetric in favour of B&H for mutual rights and obligations over the first few years. In the meantime, the free trade agreement was revised twice - the first time, by the Protocol on amendments to the free trade agreement with Turkey, signed in May 2009, which was accompanied by the amended protocol on the origin of goods (November 2011)⁴, and later on, in May 2019.

This paper analyses trends and patterns of B&H trade with Turkey within the context of a many years-long mutual liberalised trade regime. The paper is structured as follows: The introduction is followed by a section on theoretical considerations of trade specialization. The third section describes the methodology used, i.e. the employed indicators and data. The fourth section presents and discusses the results of the research. The paper ends with concluding considerations.

2. Literature review

International trade specialization can be viewed both as geographical (structure by countries) and commodity (structure by products) and, according to Glejser, Gossens and Eede (1982, p. 363), both can be further differentiated into export specialization (specialization of supply) and import specialization (specialization of demand). International trade specialization can also be classified as inter-industry or intra-industry trade specialization.

3 The Agreement was a step forward compared to the originally signed trade and economic cooperation agreement of November 1995.

4 Other international documents signed by B&H and related to the trade with Turkey are available at: <http://mvteo.gov.ba/Content/Read/bilateralni-trgovinski-odnosi-drugi-akti-propisi?lang=en>

The classification into inter- and intra-industry specialization and trade is related to different theoretical concepts on the product structure of international trade. Comparative advantages based on traditional trade theory indicate a country's inter-industry specialization and export performance, while intensity and structure of intra-industry trade (IIT) indicates specialization and performance both in exports and in the domestic market. Inter-industry trade pertains to international trade in products of different industries and with different factor requirements (Carbaugh, 2015). It is based on inter-industry specialization, which in turn implies export specialization in the entire industries where the country has a comparative advantage. As a result of specialization, there is a dissimilarity between the products that a country exports and the products that it imports. Theoretical explanations of inter-industry specialization and trade derive from the classical and neoclassical theories, from Ricardo's theory of comparative advantages to Heckscher-Ohlin's factor endowment theory.

On the other hand, intra-industry trade is a two-way trade in the same or similar products which are classified within the same industry according to one of the following three criteria: substitution in production, substitution in consumption or identical technological intensity (Grimwade, 2000, p. 73). Intra-industry specialization is a narrower variant of specialization since the production is limited to a single or a small number of varieties of a given product, to keep the average costs at a low level. Based on greater specialization and internal economy of scale, IIT leads to an increase in production and allows a greater choice of differentiated products' varieties at lower prices for consumers (Melitz and Trefler, 2012; Yazdani and Pirpour, 2020). Although it can occur in homogenous products as well, IIT is typically related to trade in differentiated products, whether they are horizontally or vertically differentiated. Horizontally differentiated products are varieties of a single product, while vertically differentiated products reflect a different quality of the same variety (Greenway and Milner, 2003).

The explanation of IIT is based on several theoretical concepts. The vertical IIT (VIIT), as well as the inter-industry trade, is more affected by differences in factor endowment and differences in the level of income; consequently, its explanation is also related to traditional theories of comparative advantages. In the horizontal IIT (HIIT) a more significant role is played by similarity in income, the economy of scale and the number of varieties, and it is therefore far more based on the modern international trade theories which attach a particular significance to increasing returns, imperfect competition and consumers' preferences (Brkić, 2012).

Two basic approaches to modelling horizontal differentiation can be singled out in theoretical literature: the core-attributes approach, which starts from the assumption that consumers demand a particular combination of characteristics in the preferred

variety (Lancaster, 1981; Eaton and Kierzkowski, 1984), and the love-for-varieties approach, which is based on the assumption that consumers will use as many different varieties of the same product as possible (Dixit and Norman, 1980; Krugman, 1981; Helpman and Krugman, 1985).

The theoretical basis of vertical IIT was developed in papers by Falvey (1981), Falvey and Kierzkowski (1984), and Shaked and Sutton (1984). Products that belong to the same industry but are of different quality can be manufactured using a different mix of production factors and different technologies. A higher quality of a variety is related to higher requirements for capital and more advanced technology. The empirical literature provides significant proofs of the fact that the vertical IIT is the dominant type of IIT in world trade, particularly if it is the trade between countries at different levels of economic development (Mardas and Nikas, 2008; Boyrie and Kreinin, 2011).

Trade specialization in terms of distinction of the inter-industry from the intra-industry trade, either vertical or horizontal, has never been investigated in relations between B&H and Turkey before. Although the trade between the two countries has mostly proceeded freely for almost two decades, which should have yielded significant effects and caused a greater interest of researchers, according to our knowledge, some general trends of that trade have been analysed only in a small number of studies, primarily within a broader analysis of the trade between Turkey and Balkan countries. Çakir (2014) analysed economic flows (trade and investment) between Turkey and Balkan countries, including B&H, in the period 2006-2013, and concluded that Turkey's trade and investment have increased significantly in the region. Using the gravity model with exports and imports as dependent variables, Yaşar and Korkmaz (2017) analysed Turkey's trade with ten Balkan countries in the period 2006-2016 and established that there is unused trade potential especially between Bulgaria, Slovenia, B&H and Turkey. Mulalić (2019) analysed prospects for trilateral relations between Turkey, Serbia and B&H, including, besides others, effects on trade between the three countries. The described papers did not analyse the trade between B&H and Turkey in detail, unlike this paper, which is aimed at providing a deeper insight into the characteristics of that trade.

1. Research methodology

To assess the country's trade performance and specialization more fully, this analysis employs several indicators and methods. To analyse the inter-industry trade specialization and identify the product groups where B&H has comparative advantages in trade with Turkey, one of the most popular indices in the empirical literature - revealed comparative advantage index (RCA index) created by Balassa (1965, p. 106),

was employed. The index is also called the “export index of revealed comparative advantages” since all variables in the formula pertaining to exports. For the needs of this research, the original Balassa RCA index was modified for use in bilateral trade and is expressed by the following formula:

$$BI_{ijk} = \frac{X_{ijk}}{\sum_i X_{ijk}} \bigg/ \frac{X_{ij}}{\sum_i X_{ij}} \quad BI \in (0, \infty) \quad (1)$$

Legend: BI_{ijk} - RCA index of country j in the product i in the trade with country k ; X_{ijk} - exports of product i of country j to country k ; $\sum_i X_{ijk}$ - exports of country j to country k ; X_{ij} total exports of product i of country j ; $\sum_i X_{ij}$ - total exports of country j .

The value of the BI index higher than 1 indicates that the country has the comparative advantage in the given product group (the higher the value, the more pronounced the advantage), while the index value between 0 and 1 indicates the comparative disadvantage. Industries where B&H comparative advantages were identified in the first and the last year of the observed period were classified according to their technological intensity into five categories in line with Lall’s classification (Lall, 2000), to obtain the information on the quality of export flows’ structure.

The analysis of the sectoral concentration of B&H exports and imports employed the concentration ratio (CR) and Herfindal-Hirschman index (HHI). Export sectoral concentration ratio has been calculated as follows:

$$CR_{jk} = \sum_{i=1}^n \frac{X_{ijk}}{X_{jk}} \quad (2)$$

Legend: CR_{jk} - the sum of shares of the largest (four) exporting industries i from the country j (B&H) to the target market k (Turkey); X_{ijk} - exports of the industry i of the country j to the country k ; X_{jk} - the total exports of the country j to the country k ; n - number of industries ($n=1, \dots, 4$).

Export sectoral concentration/diversification has been measured by HHI as well, using the following formula (Mejía, 2011)⁵:

$$HHI_{jk} = \sum_{i=1}^n \left(\frac{X_{ijk}}{X_{jk}} \right)^2 \quad (3)$$

Legend: HHI_{jk} - degree of export sectoral concentration/diversification; X_{ijk} - value of exports of industry i of the country j to the country k ; X_{jk} - value of total exports of the country j to the country k ; n - number of industries i.e. SITC product groups ($n=1, \dots, 262$).

5 Import sectoral concentration measured by CR and HHI has been calculated applying similar formulas, but with import instead export variables.

If HHI value is lower than 0.15, it indicates low export concentration and specialization, i.e. a higher level of export diversification.⁶

Intra-industry trade and specialization were analysed using Grubel-Lloyd index (Grubel and Lloyd, 1975, p. 21) at the sectoral and aggregate level. For measuring IIT intensity inside an individual industry, we used the following formula:

$$GL_{ijk} = 1 - \frac{|X_{ijk} - M_{ijk}|}{(X_{ijk} + M_{ijk})} \quad 0 \leq GL_{ij} \leq 1 \quad (4)$$

Legend: GL_{ijk} - IIT intensity in industry i of country j in its trade with country k ; X_{ijk} - exports of industry i of country j to country k ; M_{ijk} - imports of industry i of country j from country k .

To obtain the average level of IIT for a country (for a set of industries), GL index is calculated according to the following formula (Grimwade, 2000, p. 74):

$$GL_{jk} = 1 - \frac{\sum_{i=1}^n |X_{ijk} - M_{ijk}|}{\sum_{i=1}^n (X_{ijk} + M_{ijk})} \quad 0 \leq GL_j \leq 1 \quad (5)$$

Legend: GL_{jk} - aggregate GL index, i.e. IIT intensity for all industries i of country j in its trade with country k ; n - number of industries i.e. SITC product groups ($n = 1, \dots, 262$).

To analyse the IIT structure, which means to separate industries with the dominant horizontal from those with the dominant vertical IIT, we used the so-called GHM methodology (Greenway, Hine and Milner, 1995). GHM methodology is based on the assumption that the relative difference between unit values of exports and imports reflects the difference in the quality of export and import product groups. Horizontal differentiation does not result in the variation in prices⁷, while vertical differentiation is defined in terms of varieties of different quality levels, which in turn results in differences in prices. GHM methodology uses the relative unit value index (RUV), which is calculated as the ratio of exports unit value to imports unit value:

$$RUV_{ijk} = \frac{UV_{ijk}^X}{UV_{ijk}^M} \quad (6)$$

Legend: RUV_{ijk} - ratio between exports and imports unit value for industry i in trade of the country j with the country k ; UV_{ijk}^X - unit value of exports for industry i in trade of the country j with the country k ; UV_{ijk}^M - unit value of imports for industry i in trade of the country j with the country k .

6 Federal Trade Commission & U.S. Department of Justice (2010).

7 Therefore, horizontal IIT exists when export unit values are close to the given products' import unit values.

Horizontal IIT exists when the RUV of the given product group ranges in the interval from 0.85 to 1.15. Trade in products whose RUV are beyond this interval is vertical IIT; if $RUV < 0.85$, there is the dominance of VIIT with lower-quality exports, while $RUV > 1.15$ indicates the dominance of VIIT with higher-quality exports.

For the purpose of this research, an industry is defined as a three-digit level product group of the Standard International Trade Classification (SITC). The analysis encompassed the industries which show B&H exports and/or imports in its trade with Turkey, which is 249 each year, out of the total of 262 at the given aggregation level.

3. Research results

Within the framework of an already largely liberalised mutual trade regime, trade trends and patterns will significantly depend, *inter alia*, on trading countries' characteristics such as their size, economic performances and, more specifically, trade performances. In this particular case, Turkey is a much larger country than B&H in terms of its geographic, demographic and economic dimensions of size: it covers a 15 times bigger area with 25 times larger population and has a 38 times higher level of GDP⁸. Significant differences between the two countries also exist in terms of their trade performance and competitiveness in the world market, with advantages on the Turkish side⁹. It is expected that an impact of country-specific characteristics will be more prominent if countries trade more with each other as it is the case in bilateral relations between B&H and Turkey.

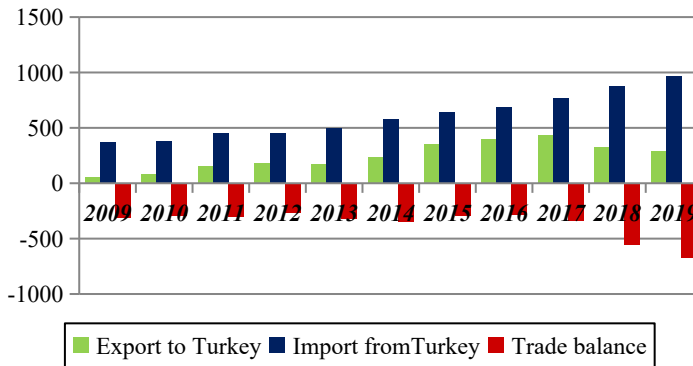
Turkey has been among the important trade partners of B&H for years. According to data from the Ministry of Foreign Trade and Economic Relations of B&H (MOF-TER, 2009-2020), Turkey mostly ranked seven or eight by the share in B&H exports, and it ranked eight by the share in B&H imports, except in 2019, when it reached rank six. In the observed period, Turkey's average share in B&H exports amounted to 2.58%, and its average share in B&H imports 3.68% (Table 2).

8 The area of Turkey amounts to 785,347 km², while the area of B&H only 51,209 km² (Britannica, 2021); population of Turkey is 83,155 million and population of B&H is 3,301 million; GDP of Turkey amounts to 760.94 bil. USD and GDP of B&H amounts to 19.86 bil. USD (IMF, 2019).

9 Turkey is significantly better ranked by the Global Competitiveness Index (GCI) than B&H - at 61st place among 141 countries (WEF, 2019), and by share in the world exports - at 29th place (WTO, 2019), while B&H ranks 92 and 104 respectively. The country also has a higher value of the Economic Complexity Index (ECI) - 0.60 (rank 39) compared to 0.52 of B&H (rank 43) (OECD, 2018). For a detailed insight into trade performance and efficiency of Turkey, especially in trade with its main partners, some studies such as Demir, Utkulu and Bilik (2019), the EC trade analysis etc. should be consulted (see the list of references).

Trade in goods between B&H and Turkey continuously increased in the observed period and, upon reaching the value of around 1.2 bil. BAM in 2019, was three times greater than in the beginning of the period. The increase in trade resulted both from the increase in exports and imports of B&H, with exports increasing faster. Compared to 2009, the value of exports grew five times, while the value of imports grew three times. Export-import coverage in B&H increased from the level of 14% to the level of 58% in 2016 (Table 2). However, the difference between imports and exports is still great, which generates a prominent B&H trade deficit.

Graph 1: Trends of B&H Trade Flows with Turkey, in mil BAM (2009-2019)



Source: Prepared by authors on the basis of trade data from BHAS

Due to the change in the export trend after 2017, which began to decrease while imports continued to rise (Graph 1), the B&H trade deficit with Turkey entered the growth zone again, while export-import coverage decreased to around 30% in 2019. According to data from the MOFTER, Turkey's share in B&H trade deficit increased from 4.50% on average to 7.48% in 2018 and 8.39% in 2019 and was mostly made up of industrial products.

Table 1: Trade Performances of B&H in Trade with Turkey, 2009-2019

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average
Export to Turkey, mil BAM	51.85	81.66	150.05	182.87	174.69	234.39	354.63	401.05	431.10	323.22	292.55	243.46
Export to Turkey, %	0.94	1.15	1.83	2.33	2.08	2.70	3.95	4.26	3.90	2.72	2.55	2.58
Import from Turkey, mil BAM	366.82	379.08	450.11	449.51	493.28	582.10	644.61	687.18	766.58	874.33	964.62	605.29
Import from Turkey, %	2.97	2.78	2.90	2.95	3.25	3.59	4.07	4.26	4.23	4.54	4.95	3.68
Trade balance, mil BAM	-314.97	-297.42	-300.06	-266.63	-318.60	-347.71	-289.98	-286.14	-335.48	-551.10	-672.07	-361.83
Total bilateral trade, mil BAM	418.67	460.74	600.16	632.38	667.97	816.49	999.24	1.088.23	1.197.67	1.197.55	1.257.18	848.75
Export-import coverage, %	14.14	21.54	33.34	40.68	35.41	40.27	55.01	58.36	56.24	36.97	30.33	38.39

Source: Authors' own calculation based on trade data from BHAS

Table 2: Product Export and Import Concentration of B&H in Trade with Turkey

Index	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change 2009/2019
$CR_{x(4)}$, %	58.67	61.74	75.87	68.21	64.27	51.47	63.87	59.32	63.50	65.62	67.19	↑ concentration
$CR_{M(4)}$, %	21.12	22.18	19.15	18.25	17.61	17.49	17.00	17.67	17.74	17.48	17.63	↓ concentration
HHI_x	0.12	0.13	0.29	0.19	0.10	0.11	0.14	0.14	0.16	0.14	0.17	↑ concentration
HHI_M	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	↓ concentration

Source: Authors' own calculation based on trade data from BHAS

Table 3: Revealed Comparative Advantages (BI) of B&H in Trade with Turkey

BI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Max BI index	102.55	85.46	54.01	26.75	40.74	36.04	25.34	23.32	25.47	36.67	35.49
(SITC product group)	(223)	(268)	(896)	(612)	(686)	(041)	(011)	(041)	(011)	(011)	(041)
Number of BI>1 items	33	36	26	25	26	30	26	27	28	33	35
Number of BI>4 items	17	14	17	14	13	16	15	15	15	16	16
Export of top 4 BI, %	13.63	28.97	1.40	53.06	27.14	17.02	57.69	49.91	48.52	41.17	37.23

Source: Authors' own calculation based on trade data from BHAS

Concerning the product structure of exports, the following five product groups had the greatest average export share: 421 Fixed vegetable fats and oils (17.76%), 282 Ferrous waste and scrap (14.69%), 641 Paper and paperboard (8.90%), 011 Meat of bovine animals, fresh, chilled or frozen (5.72%) and 041 Wheat (including spelt) and meslin, unmilled (5.19%). The export structure changed compared to the beginning of the period in favor of the lower value-added products.

The import sectoral structure was relatively stable in the observed period¹⁰. Most of products on the top 10 list pertain to textile. The following five product groups had the greatest average share in B&H imports: 775 Household-type, electrical and non-electrical equipment, n.e.s. (5.53%), 845 Articles of apparel, of textile fabrics, n.e.s. (5.29%), 893 Articles of plastics, n.e.s. (4.00%), 842 Women's or girls' clothing of textile fabrics, other than knitted or crocheted goods (3.35%) and 542 Medicaments, including veterinary medicaments (2.78%).

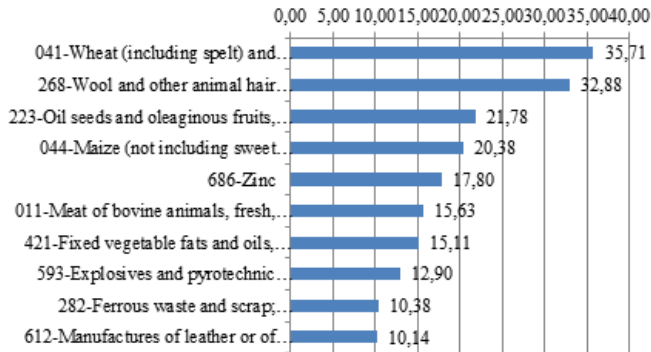
The total share of top four export product groups (export concentration ratio - CR) varied in the interval between 51.47% and 75.87%. Comparison of the CR in 2009, when it amounted to around 58.7% to 2019, when it amounted to 67.2%, reveals the increase in the export product concentration in B&H's trade with Turkey. HHI also indicates an increase in export product concentration, from the level of 0.12 to that of 0.17. However, HHI varied from 0.29 in 2009 to only 0.10 in 2013, when it began to rise again. (Table 3) The import share of the top four product groups amounted to 21.1% in 2009 and 17.6% in 2019, while HHI in imports amounted to 0.02 almost during the whole period. Both indices - CR and HHI - indicate a significantly lower degree of product concentration in imports compared to exports and a decreasing trend.

Bilateral RCA index revealed comparative advantages of B&H in more than seven times smaller number of industries compared to the number of industries with comparative disadvantages - on average, in only 30 out of 249 industries where trade with Turkey was registered. The number of industries with B&H's comparative advantages varied within the interval 25-36 in the observed period, reaching the second largest number in 2019 - 35 (Table 4). On average, 15 industries have a prominent comparative advantage ($BI > 4$). The highest average values of BI were observed in the following groups: wheat and meslin, wool and other animal hair, oil seeds and oleaginous fruits, maize, zink, meat of bovine animals, and fixed vegetable fats and oils¹¹ (Graph 2).

10 Seven product groups among the top ten ranked by import share appeared in almost all years: 893, 775, 845, 842, 542, 057 and 659.

11 Among the listed groups, the greatest significance for exports to Turkey, on average, was observed in fixed vegetable fats and oils (17.76%).

Graph 2: Top 10 Industries with Comparative Advantage of B&H
(Average BI, 2009-2019)

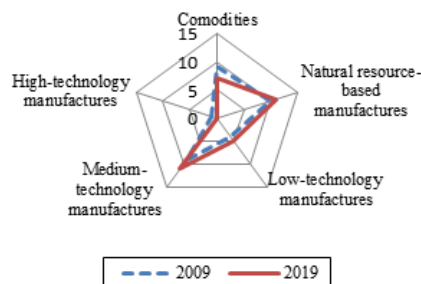


Source: Authors' own calculation on the basis of trade data from BHAS

Compared to 2009, in 2019 B&H gained the comparative advantage with the value of $BI > 4$ in 12 new product groups but at the same time lost or significantly decreased the comparative advantage in 11 product groups. Only 5 product groups (041, 268, 593, 671, 742) kept comparative advantages on the list of top BI values.

Comparative advantages of B&H on the Turkish market are mostly seen in natural resources based manufactures and medium technology manufactures industries (11 groups in each category), followed by primary products/commodities 12 (9). In principle, the situation has not significantly changed with respect to the classification of industries compared to the beginning of the past decade. (Graph 3)

Graph 3: Industries with Advantage of B&H by Technological Intensity
(2009, 2019)



Source: Authors' own calculation on the basis of trade data from BHAS

Trade with Turkey is almost completely inter-industry and ranged around 0.06 on average. It is almost seven times less than the share of IIT in B&H's total trade with the world, which amounted to 0.40 on average (Table 5). There were no significant changes in IIT share at the aggregate level in the observed period.

12 "Commodities" refers to primary products and resource-based (agro-based) products other than resource-based manufactures.

Table 4: IIT Intensity (GL Index) in B&H's Trade with the World and with Turkey

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average
GL index in total B&H trade	0.38	0.39	0.39	0.40	0.40	0.39	0.41	0.42	0.44	0.43	0.43	0.41
GL index in trade with Turkey	0.08	0.06	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.07	0.08	0.06

Source: Authors' own calculation based on trade data from BHAS

Table 5: Number of Product Groups by IIT Categories in Trade of B&H with Turkey

Number of items with specified GL index value	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Strong IIT ($0.75 < GL \leq 1.00$)	7	4	5	3	3	7	2	4	4	2	6
Moderate IIT ($0.50 < GL \leq 0.75$)	4	4	6	4	2	2	6	4	6	5	4
Potential IIT ($0.25 < GL \leq 0.50$)	4	8	9	7	8	7	8	10	5	8	9
Very low IIT ($0.00 < GL \leq 0.25$)	62	61	61	59	70	62	79	94	79	76	79
OWT ($GL = 0.00$)	125	126	127	131	123	136	112	101	126	128	116

Legend: GL - Grubel-Lloyd index of IIT; OWT - one-way trade i.e. completely inter-industry trade;

Source: Authors' own calculation based on trade data from BHAS, following interpretation of IIT intensity developed by Qasmi and Fausti (2001)

Table 6: Number of Product Groups with Horizontal and Vertical IIT in Trade of B&H with Turkey

Number of $GL > 0.50$ items	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Items with HIIT	3	0	0	1	0	0	0	1	2	2	1
Items with VIITh	2	5	5	2	4	3	5	3	4	4	4
Items with VIITI	7	8	6	4	2	7	3	4	4	1	5
Total number of items	12	13	11	7	6	10	8	8	10	7	10

Legend: HIIT - number of product groups with horizontal IIT; VIITh - number of product groups with vertical IIT of high quality; VIITI - number of product groups with vertical IIT of lower quality;

Source: Authors' own calculation based on trade data from BHAS

Out of the 249 product groups where exports and/or imports between B&H and Turkey was recorded, in as many as 125 groups only the one-way trade was observed in 2009. The number decreased to a certain degree and was 116 at the end of the period. The number of product groups where IIT dominated (either strong or moderate), i.e. where the value of $GL > 0.50$, was extremely small and ranged between min. 6 (2013) and max. 13 (2010). (Table 6) Relative unit value indices point out the dominance of product groups with vertical IIT of lower-quality B&H exports (Table 7). Besides, the structure of the list of product groups with the highest GL indices is almost different in the beginning from that at the end of the analyzed period (Table 8)¹³.

Table 7: The Highest IIT Intensity, by Product Groups (2009, 2019)

SITC Product Group, 2009	GL	SITC Product Group, 2019	GL
792-Aircraft and associated equipment; parts thereof	0.98	269-Worn clothing and other worn textile articles	1.00
057-Fruit and nuts, fresh or dried	0.91	058-Fruit, preserved, and fruit preparations (excluding fruit juices)	0.95
695-Tools for use in the hand or in machines	0.91	612-Manufactures of leather or of composition leather, n.e.s.	0.87
742-Pumps for liquids, liquid elevators; parts thereof	0.84	811-Prefabricated buildings	0.87
522-Inorganic chemical elements, oxides and halogen salts	0.84	098-Edible products and preparations, n.e.s.	0.83
292-Crude vegetable materials, n.e.s	0.81	821-Furniture and parts thereof	0.77
515-Organo-inorganic compounds, nucleic acids and their salts	0.78	248-Wood, simply worked, and railway sleepers of wood	0.56
512-Alcohols, phenols, phenol-alcohols, and their derivatives	0.57	725-Paper mill and pulp mill machinery, paper cutting machines; parts thereof	0.56
058-Fruit, preserved, and fruit preparations (excluding fruit juices)	0.55	746-Ball- or roller bearings	0.52
598-Miscellaneous chemical products, n.e.s.	0.55	743-Other pumps; compressors, fans, ventilating or recycling hoods; parts thereof	0.51

Source: Authors' own calculation based on trade data from BHAS

13 However, four product groups in the top 10 list of GL index value in 2019 are also on the list of groups with revealed comparative advantages in the same year.

The highest average shares of IIT in B&H's trade with Turkey are in the following product groups: 058 Fruit, preserved, and fruit preparations (excluding fruit juices), 695 Tools for use in the hand or in machines, and 743 Other pumps; compressors, fans, ventilating or recycling hoods; parts thereof.

4. CONCLUDING REMARKS

In the past decade, B&H improved its performances in trade with Turkey to a certain degree, but the present country's position is still unsatisfactory. In most of the observed period, the trade between the two countries increased, with faster growth of B&H exports than imports, and an increase in the export-import coverage. However, the trade deficit with Turkey is still significant, and it has been increasing again over the past few years due to a negative change in B&H's export trend. Besides, the export structure reveals a high degree of concentration, based on a significant export share of several product groups, mostly low value-added.

Comparative advantages of B&H were revealed in a small number of industries (an eighth of the total number of industries where trade with Turkey was registered). The pattern of comparative advantages still reflects the traditional product structure based on the natural resource-based product groups and medium technology manufactures, B&H has no comparative advantages in the sophisticated technology-intensive industries.

The pattern of intra-industry specialization and trade, which is considered a measure of diversification and technological sophistication of a given country's industries, points to similar conclusions as to the pattern of the revealed comparative advantages. B&H's trade with Turkey reveals the extreme dominance of the inter-industry trade, particularly the one-way trade. The intra-industry trade prevails in a small number of industries and is mostly of the vertical type, with exports of lower-quality products from B&H. The correspondence between some product groups with the highest IIT intensity and some product groups with comparative advantages of B&H was also observed, which implies that B&H conceded a significant part of the local market to Turkish exporters even in the products where the country has comparative advantages. The characteristics of the patterns of B&H's intra-industry trade flows to support the non-convergence of the country's industry structure with the structure of its trade partner, and insufficient competitive ability of a large number of industries.

The findings of the research lead to the conclusion that B&H has not made use of the trade potential of the free trade agreement which allows B&H free access to the huge Turkish market. On the contrary, the findings confirmed the theoretical thesis on trade liberalization effects, according to which the liberalization in the trade between

asymmetric countries in terms of the market size and efficiency will result in the benefit for a larger and more efficient country.

Results of this insight into these bilateral trade patterns could be used for strategic planning of the development of individual B&H industries. If complemented with an analysis of the degree of correspondence between Turkey's total import demand and B&H's export supply, results could also contribute to identifying B&H's industries with the potential to improve their export performance on the Turkish market.

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BILATERALNI TRGOVINSKI TRENDOVI I OBRASCI BOSNE I HERCEGOVINE: SLUČAJ TRGOVINE SA TURSKOM

SAŽETAK:

Trgovinski obrazac zemlje odražava specijalizaciju ponude (izvoza) i potražnje (uvoza), što ukazuje na nacionalne performanse i konkurentnost na stranom, kao i na domaćem tržištu. Uz primjenu dva različita koncepta trgovinske specijalizacije (jednog zasnovanog na tradicionalnoj teoriji komparativnih prednosti i drugog zasnovanog na modernim teorijama međunarodne trgovine), upotpunjenu analizom izvozno-uvoznih tokova i odnosa, rad ima za cilj identifikovanje karakteristika položaja Bosne i Hercegovine (BiH) u njenoj bilateralnoj trgovini. U radu se istraženi trendovi, obrasci i varijacije u trgovini B&H sa Turskom tokom jedanaestogodišnjeg vremenskog perioda (2009-2019.), sa posebnim naglaskom na identifikovanje industrija s otkrivenim komparativnim prednostima i industrija sa dominacijom IIT. U analizi su korišteni različiti pokazatelji kao što su indeksi kompozicije izvoza, sektorske diverzifikacije/koncentracije, intenziteta i strukture IIT, te kvaliteta izvoza i uvoza na osnovu relativnih jediničnih vrijednosti i klasifikacije djelatnosti prema tehnološkom intenzitetu. Rezultati istraživanja ukazali su na nepovoljan položaj BiH u trgovini sa Turskom, bez bitnijih promjena u posmatranom periodu. Permanentno je prisutan trgovinski deficit BiH, uz nisku pokrivenost uvoza izvozom, te pojavu opadajućeg izvoznog trenda. Analiza je utvrdila viši stepen izvozne robne koncentracije prevashodno na proizvode male dodate vrijednosti, te komparativne prednosti BiH u manjem broju industrija, uglavnom resursno zasnovanih ili srednje-tehnološki intenzivnih. Trgovina sa Turskom izrazito je inter-industrijska, posmatrano na agregatnom i industrijskom nivou, što takođe upućuje na nedovoljnu konkurentnost BiH u analiziranim trgovinskim odnosima.

Ključne riječi: *trgovinski obrazac, inter-industrijska trgovinska specijalizacija, intra-industrijska trgovinska specijalizacija, Bosna i Hercegovina, Turska*

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