Agricultural Trade Integration in Western Balkans: Orientation and Complementarity

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Abstract

As guidance for the integration of Western Balkans (WBs) to EU is based on the lessons learnt by the accession of Central and Eastern Europe countries in 2004 and 2007, an important element for the prospects of WBs EU membership, is the regional trade integration through the CEFTA2006 agreement. Since CEFTA2006 entry into force in 2007, agricultural trade among CEFTA2006 members as well as among Western Balkan countries and EU members expanded significantly. EU countries constitute the destination of almost half of Western Balkan agricultural exports. In this context, this study attempts firstly to evaluate the degree of sectoral and geographical dispersion of six selected Western Balkan countries and CEFTA2006 members' agricultural exports, namely Albania, Bosnia & Herzegovina, Croatia, Montenegro, FYR Macedonia and Serbia and secondly to assess the extent of agricultural trade complementarity between Western Balkans and EU countries. The study, utilizing the latest available agricultural trade data (classified by the Combined nomenclature at two digit level) for the period 2007-2012, identifies twenty four agricultural sectors (CN codes 01-24) in order to construct three trade indices, namely Regional Hirschmann, Sectoral Hirschmann and the Trade Complementarity Index. Calculations indicate that among Western Balkan countries, Serbia and FYR Macedonia displays the utmost geographical distribution of their agricultural exports, while Bosnia-Herzegovina and Montenegro exhibit the greatest sectoral exports dispersion. As it concerns the complementarity of Western Balkans agricultural exports to EU markets, overall, neighboring EU members are not calculated as favorable towards agricultural exports, while North-Western EU countries like Finland, Germany, UK or France are displaying greater potentials as future exporting markets.

Keywords: *Western Balkans, CEFTA2006, agricultural exports*

1. Introduction

During most of 1990s, relations among Western Balkan (WB) countries were characterized more of "violent convulsions" (Woodward, 1995, p.19) rather than pacifying

stability. However, today, WBs has evolved to a region of reconciliation and regional cooperation attributed, among other factors, to the aspiration for EU membership that every country in the region is displaying (Delevic, 2011). Croatia is already an EU member since 1st July of 2013 while the rest countries of the region have either granted the status of a candidate (FYR Macedonia, Serbia, Montenegro) or a potential candidate (Albania, Kosovo, Bosnia and Herzegovina). The anticipation for EU membership has served as a strong motive for reforms to a wide range of domestic policies and institutions as well as an incentive towards compliance to the core political values of European Union (Noutcheva and Aydin-Düzgit, 2011).

As Lampietti et.al. (2009, p.3) point, guidance for the WB countries integration to EU is based on the experience and the lessons-learnt of the Central and Eastern Europe Countries (CEECs) accession of 2004 and 2007. Therefore, an important element towards EU integration for the WBs is the facilitation of regional cooperation through the establishment of a regional free trade area as the one provisioned by the CEFTA2006 agreement. CEFTA2006 agreement was signed by Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Moldova, Montenegro, Serbia and the United Nations Interim Administration Mission in Kosovo on behalf of Kosovo in 2006 as "an agreement on the amendment of and accession to the original Central European Free Trade Agreement" in which already members was the soon to be EU members Romania and Bulgaria (CEFTA2006, 2006). The agreement that entered into force in 2007, aimed to facilitate trade in goods and services by eliminating trade barriers and establishing a free trade area, to foster investments and to contribute to further regional integration offering provisions for intellectual property rights and competition rules (Faslia and Brahimi, 2012). CEFTA2006 consolidated 32 bilateral free trade agreements, which had signed among South Eastern European nations under the framework of the Stability Pact for South East Europe, so as to consist the first multilateral free trade agreement on the region (Kikerkova, 2011). However, as Krizmanic (2007) stress, CEFTA2006, like its predecessor, the initial CEFTA agreement, is viewed as a "waiting room", a valuable "instrument" or a "preparatory step" providing its members training and a secure route towards future full EU membership and integration to the highly competitive EU market. The accession of Croatia to EU in 2013 came as a confirmation of the expectations for a repetition of the successful paradigms laid down by the CEECs but also and as an answer to the worries of WB countries for a likely slowdown of EU enlargement (Kostovska, 2009).

As it regards agricultural trade, as Milovanovic (2011) highlight, agricultural exports and imports are not yet fully liberalized and protection to specific "sensitive" products like tobacco, sugar or alcoholic beverages still remain. The relative stagnation on the liberalization process is attributed to the presence of non-tariff barriers like sanity and phyto-sanity measures as well as to the gradual harmonization of legislation towards EU standards (Zenic-Zeljkovic, 2011). One such paradigm can be identified to the liberalization of tobacco products trade, an important trading product for WB countries, where the free trade agreement did not came into effect due to differences in regulations in Serbia and harmonization issues with EU standards (Milivojevic, 2011).

Overall, as presented on Table 1, agricultural trade consist an important aspect of CEFTA2006 members international trade. For 2012, 12.9 percent of total CEFTA2006 exports and 10.1 percent of imports were classified as agricultural products (see Table

Table 1: *Value of exports and imports (in Euros) of CEFTA2006 partners (2012)*

		Total	%	Agricultural	%	% of Total
Exports	Intra-CEFTA	7,120,127	23.8	1,729,093	44.8	24.3
	EU	17,165,401	57.3	1,768,248	45.8	10.3
	ROW	5,693,939	19.0	360,997.3	9.4	6.3
	TOTAL	29,979,467	100	3,858,338	100.0	12.9
Imports	Intra-CEFTA	6,762,947	11.1	1,959,350	31.9	29.0
	EU	31,110,136	50.9	3,289,565	53.5	10.6
	ROW	23,293,962	38.1	898,872.5	14.6	3.9
	TOTAL	61,167,045	100	6,147,787	100.0	10.1

Source: CEFTA Secreteriat, 2013 and Eurostat, 2013, own calculations.

1) while agricultural exports rose sharply with an average annual rate of 10.5 percent, during the period 2007-2011. Agricultural flows are even more important for intra-CEFTA2006 trade, almost a quarter of intra-CEFTA exports (24.3%) and a third of intra-CEFTA imports (29%) are of agricultural nature. However, the most important partner for CEFTA2006 members' agricultural exports and imports is EU. Approximately half (45.8 percent) of total agricultural exports are shipped towards EU countries while more than half (53.5 percent) of CEFTA's imports originate from the EU states. The above figures, verify the optimistic views expressed recently (e.g. Delevic, 2011) that CEFTA2006 has in general achieved its ambitions in key areas such as trade liberalization and that WB countries are "taking small steps towards the ultimate goal of EU membership".

Although optimism for the integration of WBs to the EU exists, all WB countries are facing common challenges at reforming their agro-food sector amid threats associated with the socialist past regime of political instability and lingering corruption (Kuipers et. al., 2013; Cochrane and Kristaq, 2013). Modernization of the agricultural sector is viewed as a priority step towards the improvement of competitiveness of WBs to the highly competitive EU market (Lampietti et.al., 2009) but also as an emphasis on the importance of agriculture to the national identity of WBs due to the existence, as Giraud et. al. (2013) stress, of strong ties among WB rural areas and the urban population.

Thus, the importance of agriculture in WBs and agricultural trade in the CEFTA2006 countries, the achievements of trade integration among WB countries as well as their prospects for full EU membership consist the main focus of this work. Consequently, the objectives of this paper are threefold. Firstly, to provide a sketch of agriculture in WB countries and a brief description on the current status of agricultural trade on the CEFTA2006 agreement with special attention to the agricultural exports and imports of six selected WB countries and members of the aforementioned agreement, namely Albania, Bosnia & Herzegovina, Croatia, Montenegro, FYR Macedonia and Serbia. Secondly, to evaluate the development, for the period 2007-2012, of the regional and sectoral agricultural exports dispersion of the six investigated WB countries and thirdly, to measure the degree of complementarity among WBs' agricultural exports and EU members' agricultural imports so as to identify the most favorable exporting markets to EU for the six investigated states.

In order to accomplish the goals set above, the paper, utilizing the latest available agricultural trade data from Eurostat (2013) (classified by the Combined nomenclature at two digit level) for the period 2007-2012, identifies twenty four agricultural sectors (CN codes 01-24) in order to construct three trade indices. The Regional Hirschmann Index (RHi) in order to evaluate the geographical concentration of the agricultural exports of each investigated WB country. The Sectoral Hirschmann Index (SHi) in order to evaluate the sectoral concentration of WB countries' agricultural exports and the Trade Complementarity Index in order to measure the degree of trade pattern compatibility among WB exports and EU members' imports. The rest of the work is structured as follows: Next section briefly sketch the main characteristics of agriculture in WBs and provide a description of the current status of agricultural trade in CEFTA2006, followed by a section that presents the three constructed trade indices and an explanation of their function. After that, the figures of the calculated indices are discussed in detail while the final section concludes.

2. Agriculture and Agricultural trade in Western Balkans and the CEFTA2006 agreement

Agriculture is an economic activity of significant importance for WB country's national economy. The average share of agriculture to the national income of WBs is 17 percent, a figure considerably larger than the EU average share (1.6 percent) (Arcotrass, 2006). According to Volk et. al. (2012), WBs agriculture is characterized predominantly as small scaled, with yields that lag EU averages, structured around private family farms that produce agricultural products destined to local markets or to own consumption. The predominant crops in WBs are cereals (except in Montenegro) and fruits and vegetables while tobacco is an important agricultural product in Macedonia, Bosnia and Herzegovina and Montenegro. Oil seeds and sugar beet crops are also present in all WBs while livestock production is limited to dairy products, beef, sheep and goats. Lampietti et.al. (2009) highlight the undercapitalized and highly fragmented nature of WBs agriculture that display limited linkages with the food industry. The lack of integration among agriculture and food industry is also stressed by Kuipers et. al. (2013) who assert that agricultural production in WBs is not harmonized with the evolved preferences of consumers for highly processed food products. One such paradigm can be pinpointed to the WBs market for agricultural organic products that consists a niche market that only recently started its development (Schaer, 2013). The incapability of WBs agriculture to meet the constantly diversified consumers' preferences can be identified, among other factors, as one of the main reasons for the presence of a widening agricultural trade deficit. Among the Western Balkan CEFTA2006 countries, Serbia is the only country without an agricultural trade deficit. The largest agricultural deficit is observed to Bosnia and Herzegovina. In 2012, Bosnia's agricultural imports were more than five times larger than exports.

The main characteristic of WB countries' trade performance is their intensive relationship with the European countries – members of the EU. European Union consist also the major trade partner for all CEFTA2006 countries. According to the latest available trade statistics from CEFTA2006 Secretariat (2013), for 2012, more than half of

the total value of total exports (29.9 bn €) and total imports (61.1 bn €) are directed or originated respectively to or from the EU-27 countries. Specifically, 57.4 percent (or 17.1 bn €) of CEFTA2006 eight members' total exports were shipped to EU-27 members, while 50.9 percent (or 31.1 bn €) of total imports originated from the EU. Although an expanding trade deficit exist among CEFTA2006 partners and the EU (13.9 billion Euros for 2012), total exports to EU rose marginally by 0.7 percent for the period 2011-2012 while total imports to EU increased by a 3 percent. Besides EU, WB countries and adjacent nations consist important trade partners for the CEFTA2006 countries. Intra-CEFTA2006 trade, for 2012, account for the 23.8% (7.1 bn €) of total CEFTA2006 exports and the 11.1 percent (6.7 bn €) of total CEFTA2006 imports. Intra-CEFTA2006 trade marginally declined after 2010, since for the period 2011-2012, intra-CEFTA2006 exports and imports decreased by 1.7 and 3 percent respectively. Other major trade partners for the investigated WB countries are Russia, Turkey and China. Russia, for 2012, consisted the origin of 7.5 percent of the total CEFTA imports and the destination of 5.3 percent of total CEFTA2006 exports. Additionally, Turkey supplied the 2.9 percent of CEFTAs imports while China provided the 6.2 percent of CEFTAs imports but received only the 0.8 of exports.

Among WB countries, Serbia, Croatia and Bosnia and Herzegovina contribute the greatest share of total CEFTA2006 exports and imports. Specifically Serbia alone evolves as the major trading partner in WBs accounting for the 36 percent of CEFTA2006's exports and the 18 percent of their imports. However, Serbia directs its exports mainly towards other CEFTA2006 members (68.3% of total exports) and not EU (10.3%). EU constitutes the major destination of exports for all other investigated WB countries. Albania and Montenegro exported during 2012 the 75.5 percent and 61.9 percent of their total exports to EU members.

Apart from total trade, EU-27 constitutes also the most important partner also for the agricultural trade of CEFTA2006 members. According to the latest data presented by CEFTA Secretariat (2013), EU absorbs and supply the majority of CEFTA's total agricultural exports (3.8 bn €) and imports (6.1 bn €) respectively (45.8% of exports and 53.5% of imports). Even if agricultural exports account only for the 12.9 percent of total CEFTA's exports and agricultural imports account for the 10.1 percent of total imports, intra-CEFTA exports and imports are more intensive in relation to the total exports and imports. Specifically, intra-CEFTA exports and imports account for the 44.8 percent and 29 percent of the total exports and total imports respectively. Furthermore, agricultural intra-CEFTA exports account for almost a quarter (24.3%) of total intra-CEFTA exports while the respective share of imports is 29 percent.

Among WB countries, Serbia is the only CEFTA2006 partner without an agricultural trade deficit. Serbia's agricultural exports rose significantly during the period 2007-2011 (average increase of 10.8%) while Serbia exported, during 2012, agricultural products of 1.9 bn Euros value and imported products of 1.1 bn Euros value. Its main source of agricultural imports was EU (47.8%) while half of its exports destined towards the EU-27. Even if intra-CEFTA total trade is quite important for Serbia, intra-CEFTA agricultural exports are calculated relatively more anemic (38.2% of total agricultural exports and 20.6% of total agricultural imports).

Alongside Serbia, Croatia, the second most important regional agricultural exporter, exported, for 2012, agricultural products of 1 bn Euros value while its respective im-

ports reached the 1.9 bn Euros. Croatia's intra-CEFTA agricultural imports are significantly inferior in relation to other members' imports since only the 11.2 percent is originated from CEFTA countries. EU consist the origin of the two thirds Croatia's agricultural imports while a 43% of its agricultural exports are destined EU26 countries. During the period 2007-2011, Croatia increased its agricultural exports by an average rate of 7.3 percent, closing its agricultural trade deficit, since agricultural imports rose by an inferior average rate (5.6%).

The largest agricultural deficit, among WB countries, is observed to Bosnia and Herzegovina. In 2012, Bosnia's agricultural imports were more than five times larger than exports. Nevertheless, during the last six years, trade deficit decreased radically as the average increase of agricultural exports (11.2%) was more than six times superior of the average increase of imports (1.8%). Agricultural imports, that topped in value the 2.4 bn Euros in 2012, originated mainly from EU, since almost half (51.3%) of its agricultural imports had as source an EU country. Contrary, agricultural exports destined mainly other CEFTA members (75.4 percent of agricultural exports). It is noteworthy that Bosnia, alongside with Montenegro are accounted as the two CEFTA members with the lesser share of their agricultural exports towards EU, 19.3 percent and 10.7 percent respectively.

The majority of Montenegro's agricultural exports are destined other WB countries (68.1% of the total agricultural exports) while alongside Bosnia and Herzegovina; Montenegro's intra-CEFTA agricultural imports are higher than imports from EU (27.1%). Agricultural imports, that reached the 442 million Euros in 2012, are almost ten times larger than agricultural exports. Montenegro's agricultural deficit rose substantially during the 2007-2012 period. The average increase of exports, during the same period (4.5%) was surpassed by an even higher (1.8 times) average increase of agricultural imports (8.2%).

Besides Montenegro, FYR Macedonia's agricultural trade evolvement, during 2007-2012, is also predominated by an expansion of its agricultural trade deficit. In 2012, agricultural imports were 1.4 times bigger than agricultural imports. In 2010, the same ratio was 1.2. The average increase of agricultural exports, for the period 2007-2012, was 6.9 percent while the respective rate for imports was 8.5 percent. The destination and origin of FYR Macedonia's agricultural imports and exports are relatively balanced among EU and other CEFTA countries. The majority of imports originate from EU (45.3%) while the majority of exports have as destination other CEFTA members (47.3%).

Finally, Albania, alongside Croatia, is calculated as the country with one of the lowest shares of intra-CEFTA agricultural imports. For 2012, of the 632 million Euros agricultural imports, 54.4 percent originated EU countries while only the 13.2 percent had as source other CEFTA members. EU constitute also the major destination for Albanian exports as more than half (56.5%) of total agricultural exports destined EU countries and 31.7 percent destined other CEFTA countries. Albania's agricultural exports are characterized by a relative stagnation. During the last six years, agricultural exports increased by an average rate of 0.9 percent, resulting to a subsequent widening of Albania's agricultural trade deficit, aided additionally by a sixfold average rate (6%) of agricultural imports increase.

Overall, all six investigated WB countries, as the Table 2 depicts, features as main

Table 2: *The major agricultural exports partners for the CEFTA-2006 partners (2012)*

	Partner	%		Partner	%		Partner	%
Albania	Greece	18%	**Montenegro**	Serbia	30%	**Bosnia and Herzegovina**	Croatia	42%
	Kosovo	17%		Bosnia and Herzegovina	17%		Serbia	20%
	Germany	15%		Russia	11%		Montenegro	7%
Croatia	Bosnia and Herzegovina	31%	**FYR Macedonia**	Serbia	19%	**Serbia**	Romania	20%
	Italy	12%		Kosovo	9%		Bosnia and Herzegovina	16%
	Slovenia	10%		Germany	7%		Montenegro	11%

Source: Eurostat (2013), own calculations

Table 3: *The major products of WB countries agricultural exports (2012)*

Albania	**%**	**Montenegro**	**%**
12-oil seeds and oleaginous fruits; miscellaneous grains…	38	22-beverages, spirits and vinegar	52
7-edible vegetables and certain roots and tubers	14	2-meat and edible meat offal	9
8-edible fruit and nuts; peel of citrus fruits or melons	10	8-edible fruit and nuts; peel of citrus fruits or melons	9
Croatia		**FYR Macedonia**	
17-sugars and sugar confectionery	15	24-tobacco and manufactured tobacco substitutes	24
10-cereals	12	22-beverages, spirits and vinegar	15
22-beverages, spirits and vinegar	10	7-edible vegetables and certain roots and tubers	11
Bosnia and Herzegovina		**Serbia**	
4-dairy produce; birds' eggs; natural honey; …	18	10-cereals	26
15-animal or vegetable fats and oils…	15	8-edible fruit and nuts; peel of citrus fruits or melons	14
19-preparations of cereals, flour, starch…	10	22-beverages, spirits and vinegar	8

Source: Eurostat (2013), own calculations

agricultural exporting partners, countries that either are adjacent or located to the wider region of South Europe. For example Albania, where its major exporting markets includes the neighboring countries of Greece (an EU member) and Kosovo (a WB and CEFTA2006 country) that gather respectively the 18% and 17% of Albania agricultural exports. Additionally, Bosnia's top three exporting markets include only WB countries (Croatia, Serbia and Montenegro), while Montenegro is the only investigated country with a non EU or a non WB country (Russia) among its major exporting partners.

Alongside Bosnia, FYR Macedonia's top three partners consist of Serbia (19% of its exports) and Kosovo (9%) of its exports. Croatia is the only investigated country with two EU members among its top three export markets, namely Italy and the neighboring Slovenia.

As it regards the synthesis of WB countries agricultural exports, as Table 3 depicts, overall, fruits and vegetables, beverages and cereals are the four categories of products that predominate WBs agricultural exports. Serbia, is mainly exporting cereals and fruits while FYR Macedonia exports tobacco products, beverages and vegetables. Half of Montenegro exports are consisted of beverages, spirits and vinegar as Bosnia and Herzegovina is mainly exporting dairy, fats and oils and cereals preparations. Croatia is the only country exporting, among its top three sectors, sugar and Albania is the only country that is leading exporting sector is oil seeds.

3. Methodology

Following the scopes of the current work, three trade indexes will be constructed utilizing agricultural exports and imports data from the six investigated WB countries and the 27 members of European Union. The three constructed indexes include the Regional Hirschman index, the Sectoral Hirschman index and the Complementarity Index.

Hirschman Index (Sectoral or Regional) is most widely known in economic literature as Herfindahl-Hirschman Index or HHI. As Rhoades pointed in 1993, the Herfindahl-Hirschman Index was developed autonomously by Hirschman in 1945 and Herfindahl in 1950 as a statistical measure of concentration in a variety of contexts. Following Mikic and Gilbert (2009) as well as acknowledging the paternity of index's name, as defended plausibly by Hirschman in 1964 (Hirschman, 1964), the current paper will refer to the constructed indexes as Regional Hirschman Index and Sectoral Hirschman Index.

As a measure of concentration, Hirschman Index (Regional of Sectoral), has found numerous applications to various kind of economic phenomena. The index has been used extensively in international trade literature (e.g. Sadequl, 2001; Ludema and Mayda, 2010)) and can be used to measure spatial or sectoral concentration of export flows (Banerjee and Ghose, 2013, De Castro, 2012), concentration of entities on economic sectors (e.g. banking sector) (Akomea and Adusei, 2013) or income and household expenditure inequality (Chameni Nembua, 2006). Although, it's widest popularity was achieved as a statistical index on the analysis of the competition effects of mergers (Whinston, 2006; Rhoades, 1993). Furthermore, the index has been modified extensively through the years, as recently by Matsumoto et. al. (2012), incorporating numerous critiques published in relative literature. The current work, following the United Nations "Handbook of Commonly used Trade Indices and Indicators" (Mikic & Gilbert, 2009) will construct the above mentioned indices as:

Regional Hirschman (RH_i),

$$RH_i = \sqrt{\sum_{j=1}^{n}\left(\frac{X_{i,j}}{\sum_{j=1}^{n} X_{i,j}}\right)^2}, \quad \forall\ i=1,\ldots,m \text{ and } j=1,\ldots,n \tag{1}$$

where, X denotes the value of agricultural exports among countries i and j for the period 2007-2012, when,

i account for the six investigated WB countries, namely Albania, Bosnia & Herzegovina, Montenegro, Croatia, FYR Macedonia, Serbia and

j account for the EU and CEFTA2006 countries.

The RH index can be measured with prices among 0 and 1, with 1 signaling an absolute reliance of one's country's exports to one nation. Higher degrees of *RH* index suggest the spatial concentration of one's exports to fewer exporting markets. Furthermore, the index can be viewed as a measure of diversification on export markets and an indicator of one's economy vulnerability to the external economic conditions of particular markets. Additionally, SH index can be viewed as an overall indicator of a country's diversification on export sectors. The index can obtain values among 0 and 1. Higher values of the index signals significant sectoral concentration of one's nations' exports while smaller values depict the expansion of exports' products variety.

Sectoral Hirschman Index (SH_i):

$$SH_i = \sqrt{\sum_{k=1}^{q}\left(\frac{X_{i,j}^{k}}{\sum_{j=1}^{n} X_{i,j}}\right)^2}, \quad \forall\ i=1,\ldots,m \text{ and } j=1,\ldots,n \tag{2}$$

Where, X denotes the value of agricultural exports for each investigated sector k, for the period 2007-2012, among countries i and j when

k account for the 24 sectors of the Combined Nomeclature-CN, as laid down by the Council Regulation (EEC) No 2658/87 that classify agricultural products to the sectors 01-24.

Besides the concentration indices, described above, Michaely (1996) introduced a statistical measure of trade compatibility among one country's exports and another country's imports under the notion that exporter's flows overlap importer's flows (WTO, 2012, p.30, (Sahoo, 2013).

Complementarity Index (C_i)

$$C_{i,j} = \left[\frac{1-\left(\sum_{k=1}^{q}\left|\frac{M_{j,w}}{\sum_{w} M_{j,w}} - \frac{X_{i,j}}{\sum_{j=1}^{n} X_{i,j}}\right|\right)}{2}\right]\times 100,$$

$$\forall\ k=1,\ldots,q \quad \text{and} \quad i=1,\ldots,m \quad \text{and} \quad i=1,\ldots,n \tag{3}$$

Where, M denotes the total value of agricultural imports, for each investigated sector k, for 2011, among countries j and the world.

The index can be thought as an overall measure of compatibility among exporter's country supply and importer's country demand. Furthermore, the index has been utilized as an indicator of potential exports expansion on the aftermath of a regional integration process. The index is taking the values of 0 to 100, with 100 to signals absolute compatibility among two trading nations. Overall, higher measurements of C_i suggest

that the importing country is a more favorable destination for the exports of one country while the possibilities of a trade agreement between the two nations more prosperous.

4. Results

The figures of the constructed indices (1), (2) and (3) discussed to the previous section, are presented below to the Tables 4 and 5. Table 4 presents the calculated indices for the Regional Hirschman (RHi) and the Sectoral Hirschman index (SHi) while Table 5 presents the results of the Complementarity index (Ci). Regarding the RH index, overall, as calculated figures suggest, all six investigated countries have improved their geographical diaspora of agricultural exports since RH indices appear decreasing during the period 2007-2012.

Specifically, for 2012, Serbia and FYR Macedonia, are calculated with the smaller index of regional concentration, 0.339 and 0.307 respectively, suggesting that they display the greater geographical distribution of their agricultural exports to the CEFTA and EU members, in relation to the other four investigated WB countries. The countries that appear to have the smaller degree of agricultural exports geographical dispersion are Bosnia and Herzegovina and Montenegro (0.509 and 0.470 respectively). Indeed, FYR Macedonia's top three agricultural export markets (Serbia, Kosovo and Germany) account for the 35 percent of the total FYROM's agricultural exports while for Serbia the respective share (for Romania, Bosnia and Herzegovina and Montenegro) is 47 percent. However, the share of the three biggest exporting markets for Bosnia and Herzegovina is 69 percent or for Montenegro 58 percent. Therefore, it is evident that Bosnia & Herzegovina and Montenegro are relatively reliant to a smaller number of exporting partners, exposed by that way, by a greater degree, to the economic conditions in specific markets, while Serbia and FYR Macedonia are maintaining a relatively more diverse panel of exporting markets mitigating comparably the risk of adverse economic situation to a partner country. Yet, Montenegro, even if appears to have the least geographical dispersion of its agricultural exports, displays the greater improvement on the index among the investigated countries. During 2007-2012, Montenegro regional dispersion, as reflected to the RH_i, improved by 25.2 percent. At the same time, Serbia deteriorated marginally (by -3.5 percent) and FYR Macedonia improved by 12.2 percent. The other two investigated countries improved also their relevant scores. Albania's RHi decreased by 14.3 percent during 2007-2012 (from 0.425 to 0.364) and Croatia by 11 percent during the same period (from 0.456 to 0.406).

The calculation of SH index, revealed also significant differences in the sectoral distribution of exports among CEFTA2006 partners. Croatia and Bosnia and Herzegovina are calculated with the smaller sectoral Hirschman index for the 2012, consisting the two WB countries with the relatively more sectorally diversified synthesis of their agricultural exports, with indices' figures of 0.283 and 0.310. Contrary, Montenegro and Albania are displayed as the least sectorally diversified countries as their relevant scores are 0.522 and 0.398 respectively. It is evident the Montenegro's three more important agricultural export sectors (Beverages, meat and fruits) are accounting for the 70 percent of its total agricultural exports, while for Albania the respective share (for oil seeds, oleaginous fruits, fruits and vegetables) is 62 percent. Dissimilar, Bosnia's top three

Table 4: *Calculated indices for the Regional Hirschman and the Sectoral Hirschman index*

	2007	2008	2009	2010	2011	2012
	Regional Hirschmann Index					
Albania	0.425	0.417	0.412	0.387		0.364
Bosnia & Herzegovina		0.557	0.523	0.529	0.507	0.509
Croatia	0.456	0.453	0.441	0.423	0.421	0.406
Montenegro	0.629	0.584	0.515	0.508	0.494	0.470
FYR Macedonia	0.350	0.328	0.321	0.319	0.316	0.307
Serbia	0.327	0.345	0.330	0.323	0.317	0.339
	Sectoral Hirschmann Index					
Albania	0.439	0.489	0.439	0.425		0.398
Bosnia & Herzegovina		0.304	0.305	0.306	0.299	0.310
Croatia	0.311	0.278	0.275	0.277	0.274	0.283
Montenegro	0.689	0.609	0.572	0.553	0.554	0.522
FYR Macedonia	0.402	0.381	0.376	0.354	0.339	0.336
Serbia	0.295	0.281	0.299	0.310	0.323	0.348

Source: Own calculations

exporting sectors (dairy and eggs, fats and oils and cereal preparations) account only for the 33 percent. Thus, Montenegro and Albania are relatively heavily reliant for their agricultural exports to a small number of products and subsequently more vulnerable to the economic conditions to those specific sectors. From the other hand, Croatia and Bosnia appear more diversified indicating that feature a broader base of exporting products. Overall, all six WB countries have improved their sectoral distribution of agricultural exports for the investigated period. The greater decrease on the SH index is recorded for Montenegro that improved its sectoral concentration by 24.2 percent following by FYR Macedonia that is noted with a decrease of 16.3 percent. Bosnia and Herzegovina, even if it consist one of the most sectorally diversified among CEFTA2006 countries, is calculated with a marginal decrease of -2.0 percent.

As Complementarity index (Ci) measures the degree of compatibility among one's country's exports and one country's imports, Table 5 indicate that WB countries are displaying noteworthy complementarity with numerous EU countries. Specifically, Bosnia & Herzegovina and Croatia are calculated as the countries that display the greater degree of complementarity with EU partners among CEFTA2006 members. The average complementarity index for Bosnia and Herzegovina is 69.5 while for Croatia 65.8. Contrary, the average index for Montenegro is 40.2 and for Albania 41.4 indicating a relative incompatibility among their agricultural exports and EU agricultural imports. Of the EU countries, overall, the average complementarity index is ranged between 51.8 for Italy and Hungary and 60 for Lithuania. Among EU partners, the top five as it regards its overall compatibility, as importing markets for the agricultural exports of CEFTA2006 countries, are Lithuania, Germany, Finland, Belgium and Sweden. Specifically, for each investigating West Balkan state, Serbia's agricultural exports are calculated significantly compatible with Belgium, Romania and Slovakia (with indices of

67.2, 66.9 and 66.4 respectively). Thus, for Serbia, Belgium, Romania and Slovakia consists the most favorable exporting markets signaling positive prospects for future exports expansion. Contrary, relatively smaller figures for the Ci index were calculated for Luxembourg, United Kingdom and Greece, suggesting a relatively mismatch among Serbia's exporting pattern and the aforementioned countries importing pattern. Consequently, even if UK consist one of the largest EU markets (in terms of the number of consumers) and Greece one of the EU partners in the South East European neighborhood, their prospects as promising exporting markets for the Serbian agricultural products are relatively negative. Similar, Montenegro's lowest Ci figures are calculated for

Table 5: *Calculated indices for the Complementarity Index (Ci)*

	Albania	**Bosnia & Herzego-vina**	**Croatia**	**FYR Mace-donia**	**Monte-negro**	**Serbia**	**Average**
Austria	45.0	70.1	64.2	60.6	39.0	61.1	56.7
Belgium	41.0	77.7	69.5	56.3	35.9	67.2	57.9
Bulgaria	38.2	60.9	62.8	49.9	32.8	61.2	51.0
Cyprus	36.4	66.7	71.2	61.4	35.3	63.6	55.7
Czech Republic	43.7	71.7	61.5	60.9	42.0	57.9	56.3
Denmark	39.4	72.2	64.5	58.2	43.4	57.6	55.9
Estonia	36.0	63.5	65.2	58.2	53.4	54.8	55.2
Finland	44.1	77.8	65.7	66.8	42.2	57.4	59.0
France	47.4	71.2	64.3	62.5	39.3	54.6	56.6
Germany	46.5	74.6	62.1	62.1	46.0	63.3	59.1
Greece	34.7	67.4	65.2	48.3	31.3	54.5	50.2
Hungary	35.0	63.9	65.1	51.3	34.6	61.2	51.8
Ireland	34.7	72.4	64.5	63.8	44.9	57.6	56.3
Italy	44.5	65.4	64.3	50.0	31.2	55.5	51.8
Latvia	41.3	67.6	68.4	58.6	46.8	62.3	57.5
Lithuania	51.3	69.7	62.0	63.0	53.2	60.7	60.0
Luxembourg	43.7	73.9	61.7	65.9	42.7	48.3	56.0
Malta	35.2	72.6	67.3	59.4	42.7	56.1	55.6
Netherlands	41.8	71.4	67.7	55.3	39.2	65.9	56.9
Poland	44.6	65.9	62.3	52.5	37.3	62.4	54.2
Portugal	47.3	67.9	63.6	50.0	34.4	60.5	54.0
Romania	39.1	59.7	69.4	48.1	31.7	66.9	52.5
Slovakia	39.4	70.2	68.2	56.8	40.4	66.4	56.9
Slovenia	41.5	67.8	69.9	57.5	37.9	62.7	56.2
Spain	47.7	67.1	78.2	55.8	32.8	62.1	57.3
Sweden	40.4	75.4	63.8	63.5	46.5	56.0	57.6
United Kingdom	38.5	71.4	63.4	68.4	48.8	52.6	57.2
Average	41.4	69.5	65.8	58.0	40.2	59.6	

Source: Own calculations

Italy, Greece and Romania (figures of 31.2, 31.3 and 31.7 respectively) suggesting that even if those countries are EU members in a relative geographical proximity, they are unfavorable for Montenegro's agricultural exports. Contrary, to Serbia, Montenegro's greater compatibility is calculated with UK and the Baltic states of Lithuania and Estonia, indicating relative positive potentials for future exports expansion.

Likewise Montenegro, FYR Macedonia and Albania display their smaller degree of agricultural exports match with geographically approximate or even adjacent EU countries. Montenegro's smaller complementarity indices were calculated for Romania, Greece and Bulgaria while Albania's for Greece, Hungary and Ireland. Thus, FYR Macedonia's and Albania's agricultural exports supply is relatively inharmonious with the demand for agricultural imports by its neighbors. On the other side, countries of North-West Europe as UK, Finland and Ireland for FYR Macedonia and France, Spain and Portugal for Albania are calculated with considerable size on their complementarity indices signaling positive potential for FYR Macedonia's and Albania's agricultural bilateral relations. Croatia, the 28th EU member, for 2011, displayed greater agricultural exports complementarity with the adjacent Slovenia, the relatively distant Cyprus and one of the biggest markets in EU, Spain. Contrary, agricultural exports are calculated unfavorable by Czech Republic, Lithuania and Germany. As the calculated indices indicate, Croatia agricultural exports are relatively more favorable by countries of South Europe than the rest EU partners. Finally, Bosnia and Herzegovina, the country, among CEFTA2006 members, with the relatively more sizable complementarity indices, is displaying its greater potential as a future agricultural exporter with EU members of the North like Finland, Belgium, Sweden and Germany. On the other side, less favorable prospects were calculated for Romania, Bulgaria and Hungary signaling a mismatch between Bosnia's agricultural exports and its neighbors agricultural imports.

5. Conclusions

Western Balkan countries, having left behind their dim past are now on the path of regional cooperation and integration to the European Union. The accession of Croatia to EU on July 1st 2013 signaled the first accession of a WB country, widening the prospects towards future integration of all WB countries to the European Union and weighing partially the doubts for an "enlargement fatigue" (Szolucha, 2010) by the European Union. As guidance for the integration of WBs to EU is based on the lessons learnt by the accession of CEECs in 2004 and 2007, an important element for the prospects of WBs EU membership, is the regional trade integration through the CEFTA2006 agreement. Taking into account the importance of agricultural trade and agriculture to the WBs economy, the present study focused on the research of the geographical and sectoral dispersion of WBs agricultural exports as well as on the assessment of the complementarity with the agricultural importing markets of the EU members. Therefore, the current work, calculating three trade indices, namely Regional Hirschman (RHi), Sectoral Hirschman index (SHi) and Complementarity index (Ci) highlight that after 2007, although the existence of significant differences among WB countries remain, agricultural exports from WBs are improving their regional and sectoral orientation becoming more spatially dispersed and more evenly sectorally distributed. Additionally, overall,

neighboring EU members are not calculated as favorable towards WBs agricultural exports, while North-Western EU countries like Finland, Germany, UK or France are displaying greater potentials as future exporting markets.

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